

**ANNUAL REPORT**

**ON**

**PORT STATE CONTROL**

**IN THE ASIA-PACIFIC REGION**

**2016**



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## FOREWORD

We are pleased to present the **Annual Report on Port State Control in the Asia-Pacific Region 2016**.

Since the introduction of the new inspection regime in 2014 in the Tokyo MOU, the number of deficiencies, number of detentions, detention percentage and number of individual under-performing ships have all decreased, whilst the number of inspections has increased slightly. From these facts we can conclude there has been an improvement in both the quality and performance of ships operating in the region attributed to successful and effective operation of the Tokyo MOU. These positive and encouraging outputs result from the great efforts of the member Authorities of the Tokyo MOU for continuous enhancement and improvement of port State inspections.

This annual report outlines the port State control developments and activities of the Tokyo MOU that took place in 2016. In addition, the report also provides port State control statistics and analysis on the results of inspections carried out by member Authorities during the year.

Although there has been a general trend of improvement in the quality and performance of shipping in the region, there are still unsafe and substandard ships trading around the region. The Tokyo MOU is firmly determined to continue its endeavours to improve and harmonize PSC activities towards the aim of eradication of substandard ships in the region.

Carlos Fanta  
Chairman  
Port State Control Committee

Hideo Kubota  
Secretary  
Tokyo MOU Secretariat

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## OVERVIEW

### GENERAL INTRODUCTION

The Annual Report on Port State Control in the Asia-Pacific Region is published under the auspices of the Port State Control Committee of the Memorandum of Understanding on Port State Control in the Asia-Pacific Region (Tokyo MOU). This annual report is the twenty-second issue and covers port State control activities and developments in the 2016 calendar year.

The Memorandum was formed in Tokyo on 1 December 1993 and came into effect on 1 April 1994. In accordance with the provisions of the Memorandum, Authorities that have signed and formally accepted the Memorandum or that have been accepted by unanimous consent of the Port State Control Committee become full members. Currently, the Memorandum has 20 full members, namely: Australia, Canada, Chile, China, Fiji, Hong Kong (China), Indonesia, Japan, Republic of Korea, Malaysia, the Republic of the Marshall Islands, New Zealand, Papua New Guinea, Peru, the Philippines, the Russian Federation, Singapore, Thailand, Vanuatu and Viet Nam. A maritime Authority that has declared its intention to fully adhere to the Memorandum within a three-year period may be accepted as a co-operating member by unanimous consent of the Port State Control Committee. Panama is currently participating in the Tokyo MOU as a co-operating member Authority.

The main objectives of the Memorandum are to establish an effective port State control regime in the Asia-Pacific region through co-operation of its members, harmonization of the members' activities, to eliminate sub-standard shipping, to promote maritime safety and security, to protect the marine environment and to safeguard seafarers working and living conditions on board ships.

The Port State Control Committee established under the Memorandum monitors and controls the implementation and on-going operation of the Memorandum. The Committee consists of representatives from the member Authorities, co-operating member Authorities and observers. Observer status has been granted to the following maritime Authorities and inter-governmental organizations by the Committee: Democratic People's Republic of Korea, Macao (China), Samoa, Solomon Islands, Tonga, United States Coast Guard, the International Maritime Organization (IMO), the International Labour Organization (ILO), the Paris MOU, the Viña del Mar Agreement, the Indian Ocean MOU, the Black Sea MOU and the Riyadh MOU. The Secretariat of the Memorandum is located in Tokyo, Japan.

For the purpose of the Memorandum, the following instruments are the basis for port State control activities in the region:

- the International Convention on Load

- Lines, 1966;
- the Protocol of 1988 relating to the International Convention on Load Lines, 1966, as amended;
- the International Convention for the Safety of Life at Sea, 1974, as amended;
- the Protocol of 1978 relating to the International Convention for the Safety of Life at Sea, 1974;
- the Protocol of 1988 relating to the International Convention for the Safety of Life at Sea, 1974;
- the International Convention for the Prevention of Pollution from Ships 1973, as modified by the Protocol of 1978 relating thereto, as amended;
- the International Convention on Standards for Training, Certification and Watchkeeping for Seafarers, 1978, as amended;
- the Convention on the International Regulations for Preventing Collisions at Sea, 1972;
- the International Convention on Tonnage Measurement of Ships, 1969;
- the Merchant Shipping (Minimum Standards) Convention, 1976 (ILO Convention No. 147);
- the Maritime Labour Convention, 2006;
- the International Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001; and
- the Protocol of 1992 to amend the International Convention on Civil Liability for Oil Pollution Damage, 1969.

## REVIEW OF YEAR 2016

The Tokyo MOU conducted a concentrated inspection campaign (CIC) on Cargo Securing Arrangements from 1 September to 30 November 2016. During the CIC period, a total of 8,367 PSC inspections were carried out by the member Authorities, of which 5,338 were with a CIC inspection. 4,263 or 79.12% of those inspections were ships that were carrying, or required to carry, a cargo securing manual while 1,125 or 20.88% of inspections were ships carrying cargo in bulk that were not having, and were not required to have a cargo securing manual. 19 ships were detained as a result of deficiencies found during the CIC, which represents a CIC detention percentage of 0.45% much lower than the overall detention percentage of 3.23% for the same period. There were 499 or 11.7% inspections resulted in deficiencies being issued for Cargo Securing Arrangements. The general results of the CIC demonstrated a high level of compliance with Cargo Securing Arrangements by the industry. Regional PSC regimes of the Black Sea MOU, the Indian Ocean MOU and the Viña del Mar Agreement also joined the CIC.

During 2016 the number of under-performing ships continuously decreased. This positive outcome is illustrative of effective implementation of the relevant measures targeting under-performing ships in the region.

Comparing with the beginning of introduction of the measures targeting under-performing ships, both the numbers of under-performing ships listed and individual ships involved have declined up to 70% approximately. These results unequivocally demonstrate that the measures put in place to target under-performing ships are appropriate and the implementation of these measures is effective. It is also encouraging that, in addition to the Tokyo MOU, similar approaches have been introduced and implemented in the Black Sea MOU and the Indian Ocean MOU regions.

After more than ten years since its adoption, conditions for entry into force of the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (BWM) were finally met on 8 September 2016. The BWM Convention will become effective on 8 September 2017. In order to enforce control under the BWM during PSC, the Tokyo MOU has adopted amendments to the Memorandum for inclusion of the BWM as a relevant instrument. Relevant PSC guidelines will be developed so as to assist PSC officers to verify compliance with the BWM in a harmonized and effective manner. Control of compliance with the BWM will be another new challenge for PSC officers not seen since the enforcement of the MLC in 2013.

#### **THE PORT STATE CONTROL COMMITTEE**

The Port State Control Committee held its twenty-seventh meeting from 17 to 20 October 2016 in Hobart, Australia. The meeting was hosted by the Australian Maritime Safety Authority (AMSA). The meeting was chaired by Mr. Carlos Fanta, Rear Admiral (retired), Head of Port State Control Division,

Directorate of Maritime Safety, Security and Operation, Directorate General of the Maritime Territory and Merchant Marine (DIRECTEMAR) of Chile.

The meeting was attended by representatives from the member Authorities of Australia, Canada, Chile, China, Hong Kong (China), Japan, the Republic of Korea, Malaysia, the Marshall Islands, New Zealand, Papua New Guinea, Peru, the Philippines, the Russian Federation, Singapore, Thailand, Vanuatu and Viet Nam; co-operating member Authority of Panama; and observers of Macao (China), the United States Coast Guard, the Black Sea MOU, the Indian Ocean MOU, the Paris MOU and the Viña del Mar Agreement.

The Committee considered the application for observer status by Samoa. In accordance with provision of the Memorandum, the Committee agreed unanimously to accept Samoa as an observer to the Tokyo MOU. The Committee adopted the amendment to the Memorandum to include the BWM as a relevant instrument under the Tokyo MOU. The amendment will take effect on 8 September 2017, concurrently with the entry into force of the BWM. To provide necessary guidance for PSC officers the Committee established an intersessional group tasked with developing BWM guidelines prior to the implementation date.

For the purpose of supporting improvement of compliance and performance of members, the Committee agreed to introduce a peer support review scheme. The Committee decided that the peer support review will be implemented on a trial basis (pilot project) at first and then put forward as a formal scheme if the outcome of pilot project is successful and positive. The Committee considered the analysis report of the most important key performance indicators



(KPIs). The Committee was informed of the status of implementation of the new inspection regime (NIR) and measures on under-performing ships.

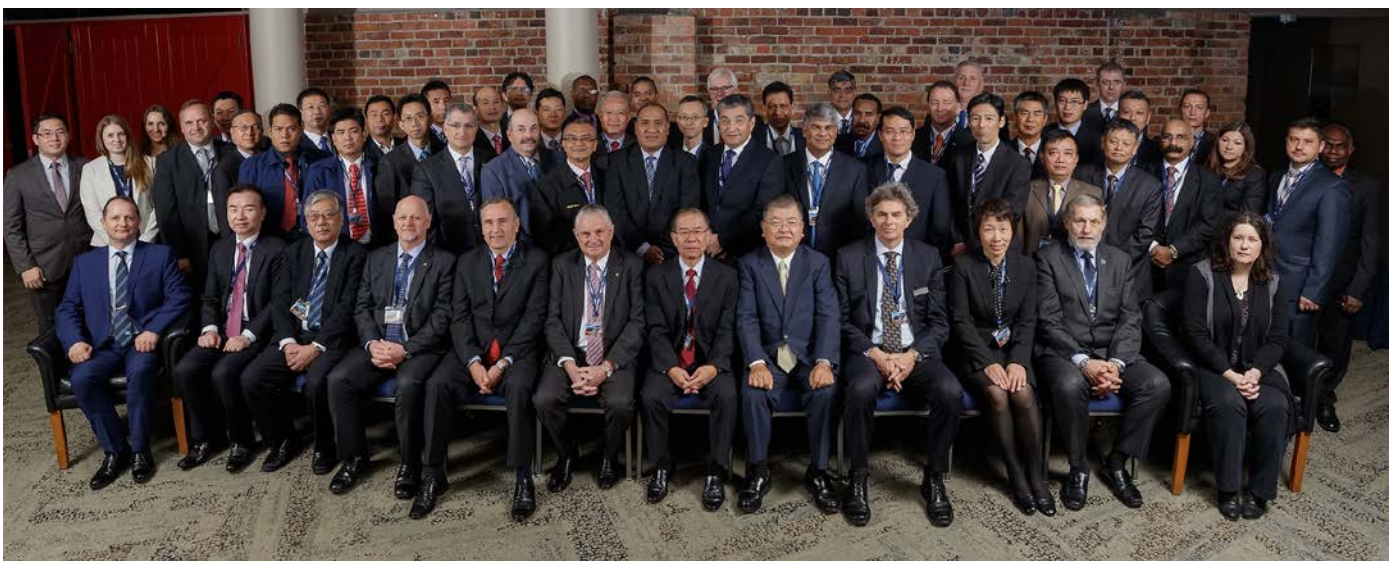
The Committee considered and approved the planned updates of the PSC Manual. The Committee approved the amendments to the guidelines for PSC officers on Maritime Labour Convention relating to the 2014 Amendments to the Convention. The Committee further approved the new guidelines on CLC 92. The Committee considered and approved a proposed process for harmonized guidance of the Paris and Tokyo MOUs.

The Committee considered the final report of the CIC in 2015 on Crew Familiarization for Enclosed Space Entry. The Committee received a provisional progress report on the 2016 CIC on Cargo Securing Arrangements. The Committee confirmed and approved arrangements for the CIC in 2017 on Safety of Navigation, including ECDIS, which will be carried out jointly with the Paris MOU from 1 September to 30 November 2017. The

Committee considered and accepted the proposal by the Paris MOU for a joint CIC on MARPOL Annex VI in 2018. Furthermore, the Committee considered and approved amendments to the Policy on joint CICs with the Paris MOU. The Committee also agreed to a common approach for planning of future joint CICs with the Paris MOU.

Moreover, the Committee also gave consideration and made decisions on the following:

- assessment of performance of member Authorities;
- summary of responses on national arrangement for PSC;
- review of achievements and status of the action plan developed based on the strategic plan;
- status of preparation for the 3<sup>rd</sup> Joint Ministerial Conference;
- review of parameters of ship risk profile



The twenty-seventh Committee meeting, Hobart, October 2016.

under the NIR;

- publication of overview detention review cases;
- review of arrangement for open forums with the industry; and
- awarding of the winner of the best deficiency photo of the year.

Having served as the Deputy Secretary and the Secretary of the Tokyo MOU Secretariat each for eleven years totaling twenty-two years, Mr. Mitsutoyo Okada resigned the post at the Committee meeting in Hobart. The Committee expressed sincere appreciation to Mr. Okada for his invaluable contributions to the activities of the Tokyo MOU since its inception and the most excellent guidance and direction to the work of the Secretariat. The Committee approved the appointment of Mr. Hideo Kubota as the Secretary of the Tokyo MOU Secretariat.

In conjunction with the Committee meeting, an open forum with industry was organized. The International Association of Classification Societies (IACS), the Association of Asian Classification Societies (ACS), the International Chamber of Shipping (ICS) and Minerals Council of Australia were invited to the forum for discussion and exchange of views on issues of mutual interest.

The twenty-eighth meeting of the Port State Control Committee will be held in the Russian Federation in September 2017.

**TECHICAL WORKING GROUP (TWG)**

The tenth meeting of the Technical Working

Group (TWG) was held in Hobart, Australia, from 13 to 14 October 2016, prior to the twenty-seventh meeting of the Committee. The TWG10 meeting was chaired by Mr. Kenny Crawford, Manager, Technical, Environment and Navigation, Maritime New Zealand.

The TWG meeting discussed and made recommendations to the Committee on matters relating to:

- cases considered by the detention review panel;
- periodical revision of the PSC Manual;
- development and review of PSC guidelines;
- preparation and arrangements for on-going and upcoming CICs;
- reports of intersessional groups: advisory group on information exchange (AG-IE), intersessional group on batch protocol (IG-BP) and intersessional group on statistics (IG-Statistics);
- activities and operation of the Asia-Pacific Computerized Information System (APCIS);
- management and maintenance of the coding system;
- analysis and statistics on PSC;
- information exchange with other regional PSC databases; and
- reports and evaluations of technical

co-operation activities.

### **PREPARATION OF THE THIRD JOINT MINISTERIAL CONFERENCE**

As informed in the Annual Report last year, the Third Joint Ministerial Conference of the Paris and the Tokyo Memoranda on Port State Control will be held in Vancouver, Canada, on 3 – 4 May 2017, by the kind invitation of Canada. The aim of organization of the Joint Ministerial Conference is to discuss initiatives that promote a wider safety and security culture throughout the entire maritime industry, protect the global marine environment and safeguard crews with respect to their living and working conditions aboard ships.

Four further preparatory discussion group (PDG) meetings and one high level meeting (HLM) were organized in 2016. As the outcome of the above mentioned meetings, a draft Joint Ministerial Declaration has been prepared, which will be adopted at the conference and signed by the Ministers.

### **ASIA-PACIFIC COMPUTERIZED INFORMATION SYSTEM (APCIS)**

For reporting and storing of port State inspection results and facilitating exchange of information in the region, a computerized database system was established. The central site of the APCIS is located in Moscow, under the auspices of the Ministry of Transport of the Russian Federation.

The APCIS is connected by member Authorities on-line or by batch protocol for searching ships for inspection and for inputting and transmitting inspection reports. The APCIS also supports on-line publication of

PSC data on the Tokyo MOU web-site (<http://www.tokyo-mou.org>) on a real time basis. Based on data stored in the database, the APCIS produces annual and detailed PSC statistics.

For inter-regional information exchange, the APCIS has established deep hyperlinks with the databases of:

- THETIS of the Paris MOU;
- BSIS of the Black Sea MOU;
- IOCIS of the Indian Ocean MOU; and
- CIALA of the Viña del Mar Agreement.

Furthermore, the Tokyo MOU PSC data is also provided to GISIS and EQUASIS.

### **TRAINING AND SEMINARS FOR PORT STATE CONTROL OFFICERS**

The sixth general training course for PSC officers was held in Yokohama, Japan, from 22 August to 16 September 2016. This was the twelfth training course jointly organized by IMO and the Tokyo MOU. A total of 21 PSC officers participated in the training course. Thirteen of them were from the Tokyo MOU Authorities of Indonesia, Malaysia, the Marshall Islands, Panama, Papua New Guinea, Peru, the Philippines, the Russian Federation, the Solomon Islands, Thailand, Tonga, Vanuatu and Viet Nam. Seven of them were invited by IMO, one each from the Abuja MOU, the Black Sea MOU, the Caribbean MOU, the Indian Ocean MOU, the Mediterranean MOU, the Riyadh MOU and the Viña del Mar Agreement. In addition, one more participant was sent and supported by the Indian Ocean MOU. The course was conducted with the assistance of the Shipbuilding Research Center of Japan (SRC).



Training course for PSC officers

liferaft service station was also arranged.

The twenty-fourth seminar for PSC officers and the Workshop on Effective Implementation of IMO Conventions were held in Bali, Indonesia, from 18 to 22 July 2016. The seminar and workshop were hosted by the Directorate General of Sea Communications of Indonesia. Participants from Authorities of Canada, Chile, China, Fiji, Hong Kong (China), Indonesia, Japan, DPR Korea, the Republic of Korea, Macao

(China), Malaysia, the Marshall Islands, New Zealand, Panama, Peru, the Philippines, Singapore, Thailand, Vanuatu and Viet Nam attended the seminar. In addition, a representative from the Black Sea MOU also participated in the seminar.

The general training course consisted of two-week classroom lectures in a wide range of subjects, main part of which are related to IMO and ILO conventions and regulations relevant to PSC implementation supplemented by onboard training in the following two weeks.

Experts from the Ministry of Land, Infrastructure, Transport and Tourism of Japan (MLIT), SRC and the Secretariat delivered lectures on relevant subjects. Onboard training was carried out in the following two weeks, during which participants received practical training on PSC inspections at ports of Otaru, Tomakomai, Sendai, Yokohama, Niigata, Nagoya, Osaka, Kobe, Hiroshima, Takamatsu and Hakata allocated in ten District Transport Bureaus. In addition, a technical visit to a



Onboard training



Onboard training

Effective Implementation of IMO Conventions was organized jointly by IMO and the Tokyo MOU. Experts from the Korean Register of Shipping and the Hong Kong Marine Department designated by IMO gave presentations on recent development on IMO conventions and PSCO decision support tool.

The sixth specialized training course was organized from 14 to 18 March 2016 in Japan. The training focused on tankers. Participants from Chile, China, Fiji, Hong Kong

(China), Indonesia, Japan, Macao (China), Malaysia, the Marshall Islands, Panama, Papua New Guinea, Peru, the Philippines, the Russian Federation, Singapore, Thailand and Viet Nam attended this specialized training course. Furthermore, a representative from the Indian Ocean MOU also participated in the

The major topics of the seminar were the Concentrated Inspection Campaign (CIC) on Cargo Securing Arrangements, Introduction of BWM and related PSC issues, results of CIC on Crew Familiarization for Enclosed Space Entry 2015, Information and analysis on implementation of NIR and Improving PSC Inspection Reporting. Experts from the Marshall Islands, Transport Canada, Maritime New Zealand and the Tokyo MOU Secretariat provided comprehensive and informative presentations on the relevant topics. Two case study sessions were carried out to discuss actual cases provided by Authorities or reviewed by the detention review panel. Along with the seminar, a Workshop on

The twenty-fourth seminar for PSC officers



The twenty-fourth seminar for PSC officers



Specialized training course

training course. Experts from MLIT, SRC, OCIMF (the Oil Companies International Marine Forum) and the Tokyo MOU Secretariat delivered presentations at the training course. IMO provided financial support to the training course.

Eight expert missions were conducted in 2016. The first mission was conducted in Port Moresby, Papua New Guinea, from 2 to 6 May 2016 by experts from Australia. The second mission was delivered in Port Klang, Malaysia, from 30 May to 3 June 2016 by experts from New Zealand. The third mission was carried out in Dalian, China, from 1 to 3 June 2016 by an officer from the Tokyo MOU Secretariat. The fourth mission was organized in Bangkok, Thailand, from 21 to 24 June 2016 by experts from Singapore. The fifth mission was implemented in Batangas, the Philippines, from 14 to 25 November 2016 by experts from the Republic of Korea. The sixth mission was delivered in Suva, Fiji, from 28 November to 2 December 2016 by experts from Japan. The

seventh mission was conducted in Callao, Peru, from 28 November to 2 December 2016 by experts from Japan. The eighth mission was carried out in Ho Chi Minh, Viet Nam, from 5 to 9 December 2016 by experts from Japan.

Four PSC officer exchanges, involving seven PSC officers, were completed in 2016, namely one PSC officer from China to the Russian

Federation, two PSC officers one each from Australia and the Russian Federation to Japan, two PSC officers one each from Hong Kong (China) and New Zealand to Chile and two PSC officers one each from Chile and Japan to Indonesia. In accordance with the integrated strategic plan for technical co-operation programmes, all member Authorities are able to participate in the PSC officers exchange programme as from 2016.

Development and implementation of the comprehensive technical co-operation programmes contributes to the achievement and success of the activities of the Tokyo MOU significantly. The Nippon Foundation kindly provided continuous funding for the Tokyo MOU technical co-operation activities.

#### **CO-OPERATION WITH OTHER REGIONAL PORT STATE CONTROL AGREEMENTS**

Establishment and effective operation of

regional co-operation regimes on port State control has formed a worldwide network for elimination of substandard shipping. Currently, there are a total of nine regional port State control agreements (MOUs) covering the major part of the world, namely:

- Abuja MOU
- Black Sea MOU
- Caribbean MOU
- Indian Ocean MOU
- Mediterranean MOU
- Paris MOU
- Riyadh MOU
- Tokyo MOU
- Viña del Mar Agreement

As one of the inter-governmental organizations (IGO) associated with IMO, the Tokyo MOU has attended meetings of the Flag State Implementation (FSI) Sub-Committee since 2006. The Tokyo MOU Secretariat attended the third meeting of the Sub-Committee on Implementation of IMO Instruments (III) in July 2016.

In support of inter-regional collaboration on port State control, the Tokyo MOU holds observer status within the Paris MOU, the Caribbean MOU and the Indian Ocean MOU. In a similar manner, the Tokyo MOU has granted observer status to the Paris MOU, the Indian Ocean MOU, the Viña del Mar Agreement and the Black Sea MOU.

The Tokyo MOU has established, and maintains, effective and close

co-operation with the Paris MOU at both administrative and technical levels. Representatives of the two Secretariats attend the Port State Control Committee meetings of each MOU on a regular basis. During the period of 2016, continuous efforts and further coordinated actions by the two Memoranda were made on the following:

- joint preparatory meetings for the third joint ministerial conference;
- initiative for a process for harmonized guidance of the two MOUs;
- revision of policy on joint CICs;
- shared approach for planning of future joint CICs;
- continuous submission to IMO on annual list of flags targeted by the Paris MOU, Tokyo MOU and the United States Coast Guard; and



Expert mission training course for the Riyadh MOU

- continuous analysis of performance of flag and RO and joint submission of the outcome to IMO.

A first expert mission training course was held in Bahrain from 21 February to 3 March 2016, under the project of technical co-operation with the Riyadh MOU. The course was organized by the Ministry of Transportation and Telecommunications of Bahrain with the support from the Secretariats of the Riyadh and the Tokyo Memoranda. Training was conducted by experts from the Tokyo MOU Authorities of Chile, China, Japan and New Zealand and an officer from the Tokyo MOU Secretariat. A total of 14 participants attended the course. The Nippon Foundation kindly rendered financial support to the project of technical co-operation to the Riyadh MOU.

A further expert mission training course for the Indian Ocean MOU was conducted in Bandar Abbas, Iran, from 5 to 16 November 2016. The course was co-organized by the Tokyo

MOU and the Indian Ocean MOU. IMO provided funding for the course. Experts from the Tokyo MOU Authorities of Australia, Chile and China and an officer from the Tokyo MOU Secretariat were dispatched to carry out the training. A total of 42 participants participated in the training course.



Expert mission training course for the Indian Ocean MOU



## PORT STATE CONTROL UNDER THE TOKYO MOU, 2016

### INSPECTIONS

In 2016, 31,678 inspections, involving 17,503 individual ships, were carried out on ships registered under 101 flags. Figure 3 and Table 2 show the number of inspections carried out by the member Authorities of the Tokyo MOU. Out of 31,678 inspections, there were 18,943 inspections where ships were found with deficiencies. Since the total number of individual ships operating in the region was estimated at 24,744\*, the inspection rate in the region was approximately 71%\*\* in 2016 (see Figure 1).

Information on inspections according to ships' flag is shown in Table 4.



\* Number of individual ships which visited the ports of the region during the year (the figure was provided by LLI).

\*\* The inspection rate is calculated by: number of individual ships inspected/number of individual ships visited.



Figure 2 and Table 3 provide information on inspections per ship risk profile.

Figures summarizing inspections according to ship type are set out in Figure 4 and Table 5.

Inspection results regarding recognized organizations are shown in Table 6.

### DETENTIONS

Ships are detained when the condition of the ship or its crew does not correspond substantially with the applicable conventions. Such strong action is to ensure that the ship can not sail until it can proceed to sea without presenting a danger to the ship or persons on



board, or without presenting an unreasonable threat of harm to the marine environment.

In 2016, 1,090 ships registered under 69 flags were detained due to serious deficiencies having been found onboard. The detention rate of ships inspected was 3.44%. Both the number of detentions and detention percentage has decreased continuously.

Figure 5 shows the detention rate by flag for flags where at least 20 port State inspections had been conducted and whose detention rate was above the average regional rate. Figure 6 gives the detention rate by ship type. Figure 8 illustrates the most frequent detainable deficiencies found during inspections, among which detainable deficiencies on Lifeboats (Life saving appliances) was continuously on the top.

The Black-grey-white list (Table 8) indicates levels of performance of flags over a three-year rolling period. The black-grey-white list for 2014-2016 consists of 64 flags, whose ships were involved in 30 or more inspections during the period. The number of flags in the black list is 10, two flags less than last year. Belize moved from the black list into the grey list. Egypt and Papua New Guinea were not shown in the list due to number of inspections

below 30. Micronesia became a black listed flag newly, as the consequence of operation of the Micronesia International Ship Registry, which was managed by certain individuals illegally as notified by the government of Micronesia officially. The number of flags on the grey list increased from 17 to 20 during the reporting period. The white list decreased from 36 to 34 flags.

A list of under-performing ships (i.e. ships detained three or more times during previous twelve months) is published monthly. A total of 119 vessels, involving 31 individual ships, were identified as under-performing ships in 2016. The list of under-performing ships is provided in Table 16.

During second half of 2016, the International Ship Registry of Cambodia (ISROC), one of the worst ship registries ceased operation. As a result, number of inspections of Cambodian ships reduced nearly 70%. It seemed that most of ships registered under Cambodia previously jumped into flags of Sierra Leone, Tanzania, Togo and Micronesia.

## DEFICIENCIES

Where conditions on board are found that are not in compliance with the requirements of the





relevant instruments by the port State control officers, these are recorded as deficiencies and required to be rectified.

A total of 81,271 deficiencies were recorded in 2016. The deficiencies found are categorized and shown in Figure 7 and Table 7.

It has been noted that fire safety measures, safety of navigation and life-saving appliances continue to be the top three categories of deficiencies discovered on ships. In 2016, 14,960 deficiencies related to fire safety measures, 12,207 safety of navigation related deficiencies and 10,981 deficiencies related to life-saving appliances were recorded, representing nearly 50% of the total number of all recorded deficiencies.

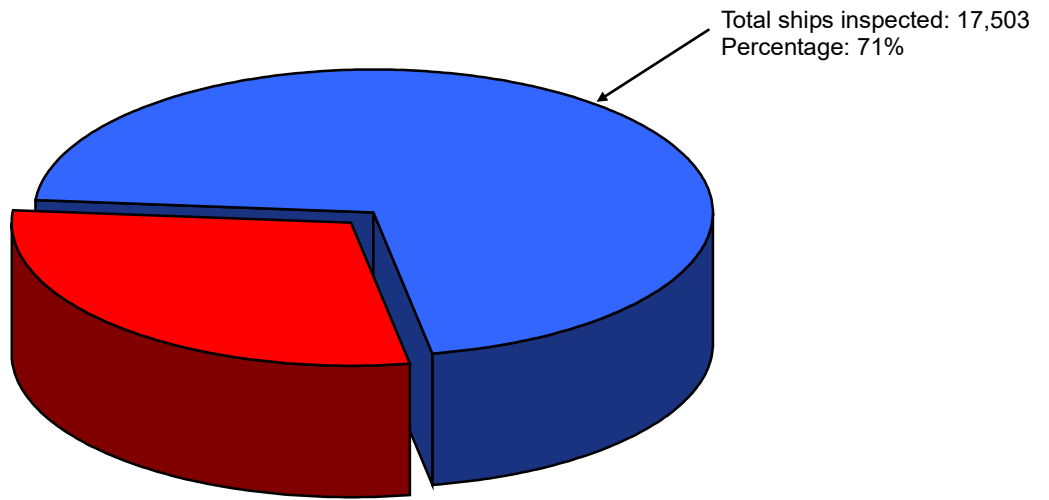


In 2016, deficiencies reduced 2,335 in number or 2.79% by percentage. The major reduction is found in categories of fire safety and safety of navigation. Deficiencies relating to labour conditions/MLC increased continuously since its entry into force. In connection with the CIC on Cargo Securing Arrangements, deficiencies recorded on cargo operations and equipment is more than doubled of previous year.

### OVERVIEW OF PORT STATE CONTROL RESULTS 2006 – 2016

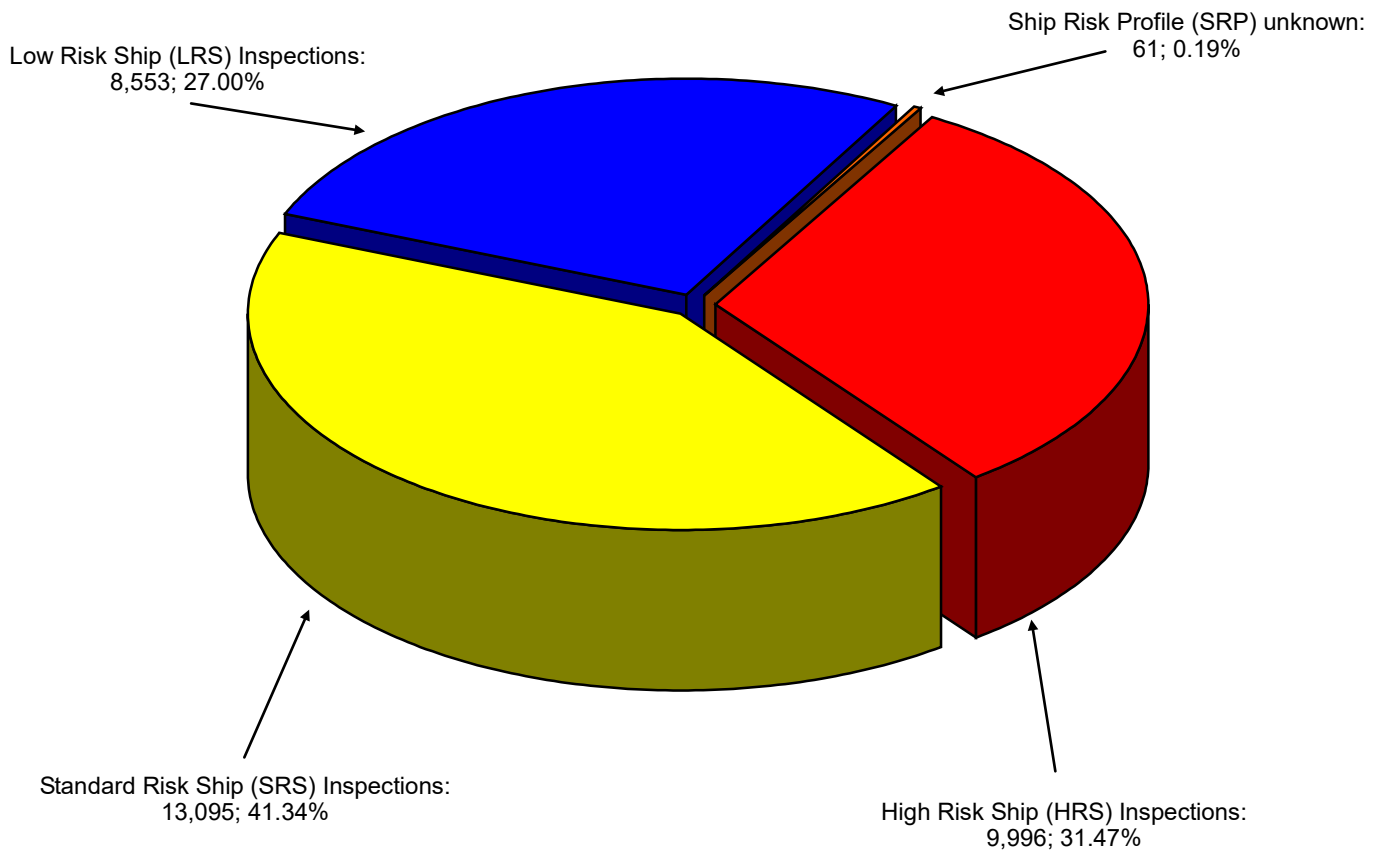
Figures 9-14 show the comparison of port State inspection results for 2006 - 2016. These figures indicate the trends in port State activities and ship performance over the past eleven years.

**Figure 1: INSPECTION PERCENTAGE**

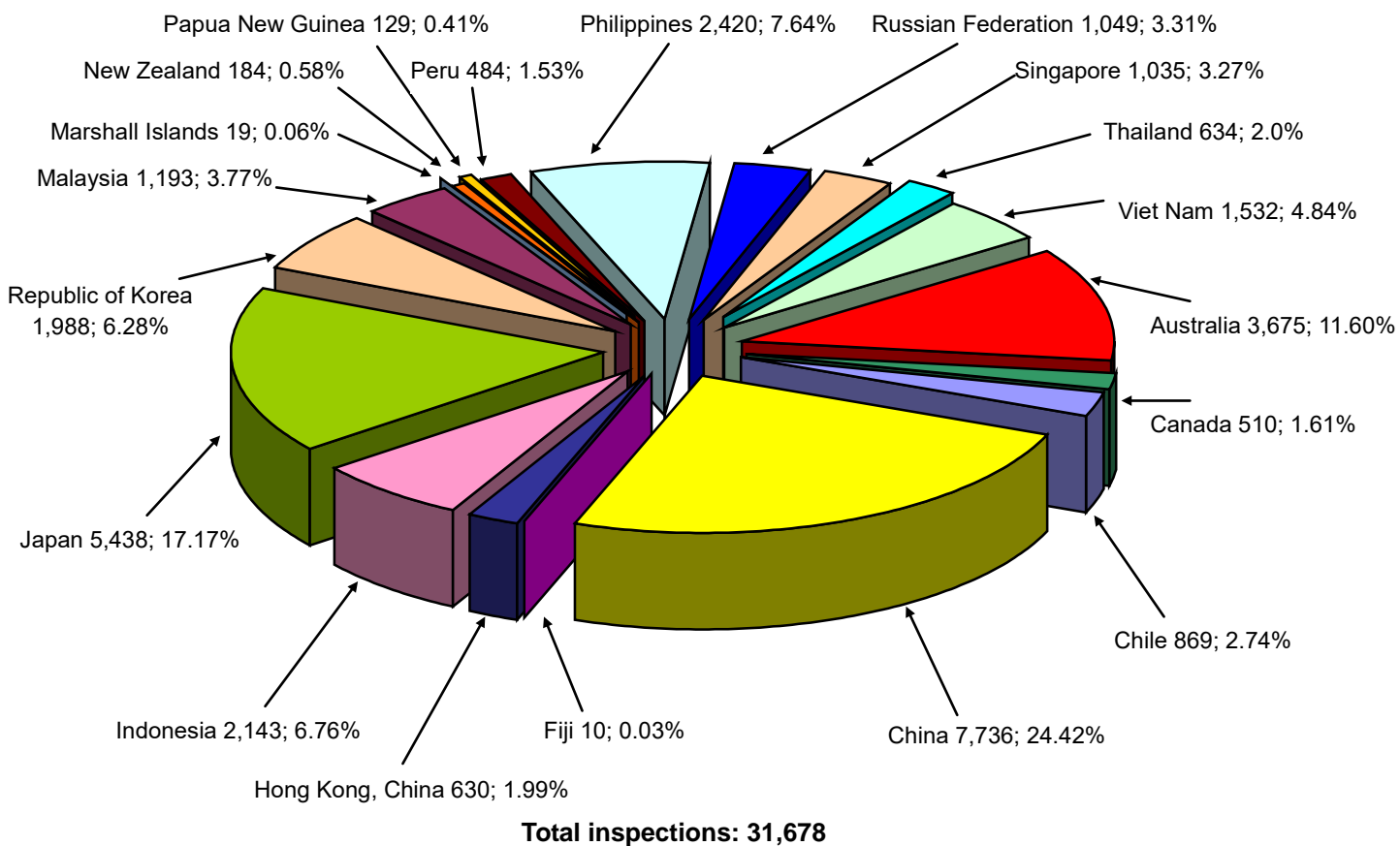


Total individual ship visited: 24,744

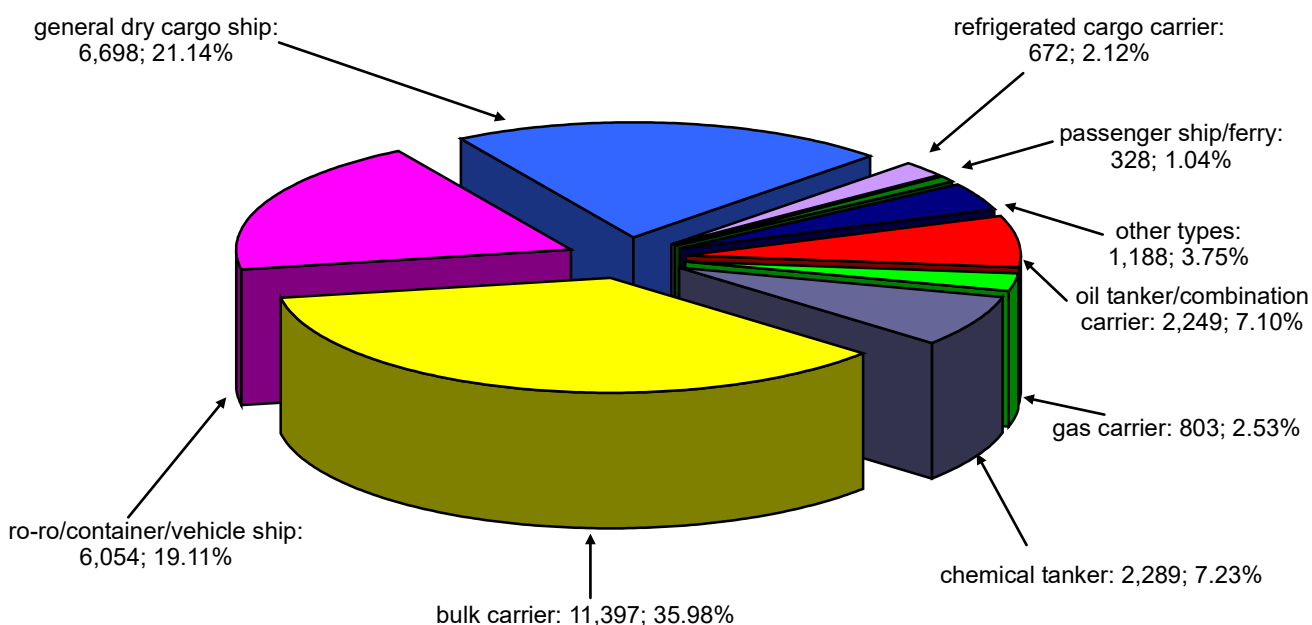
**Figure 2: INSPECTION PER SHIP RISK PROFILE**



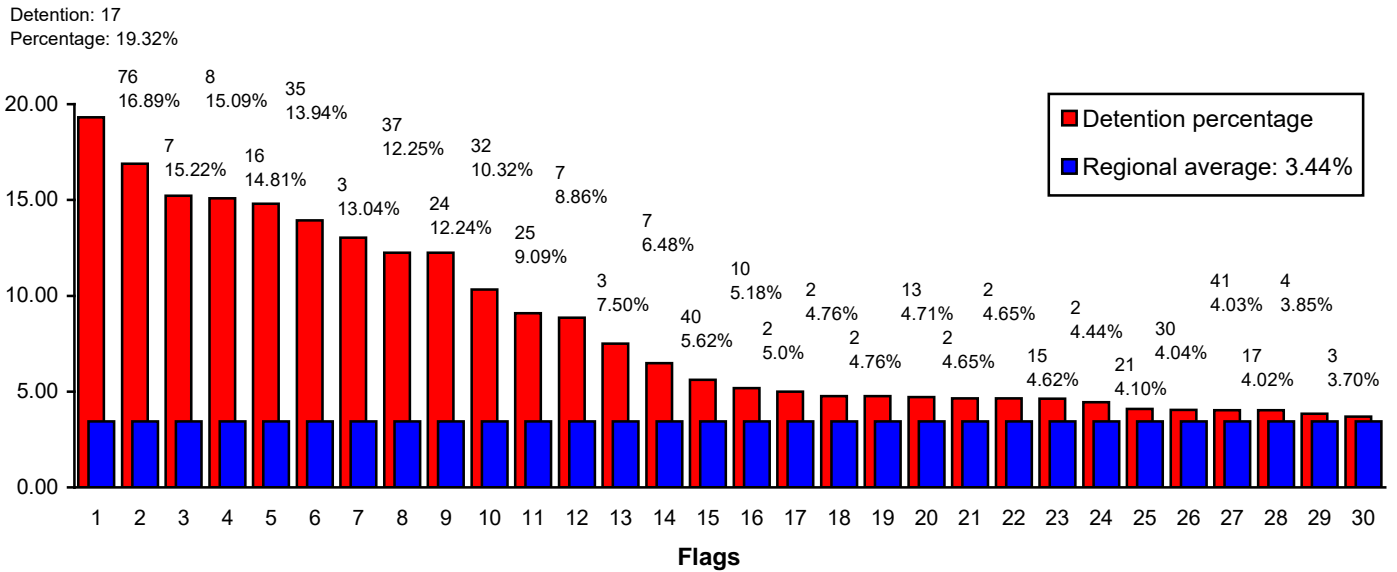
**Figure 3: PORT STATE INSPECTIONS - CONTRIBUTION BY AUTHORITIES**



**Figure 4: TYPE OF SHIP INSPECTED**



**Figure 5: DETENTIONS PER FLAG**

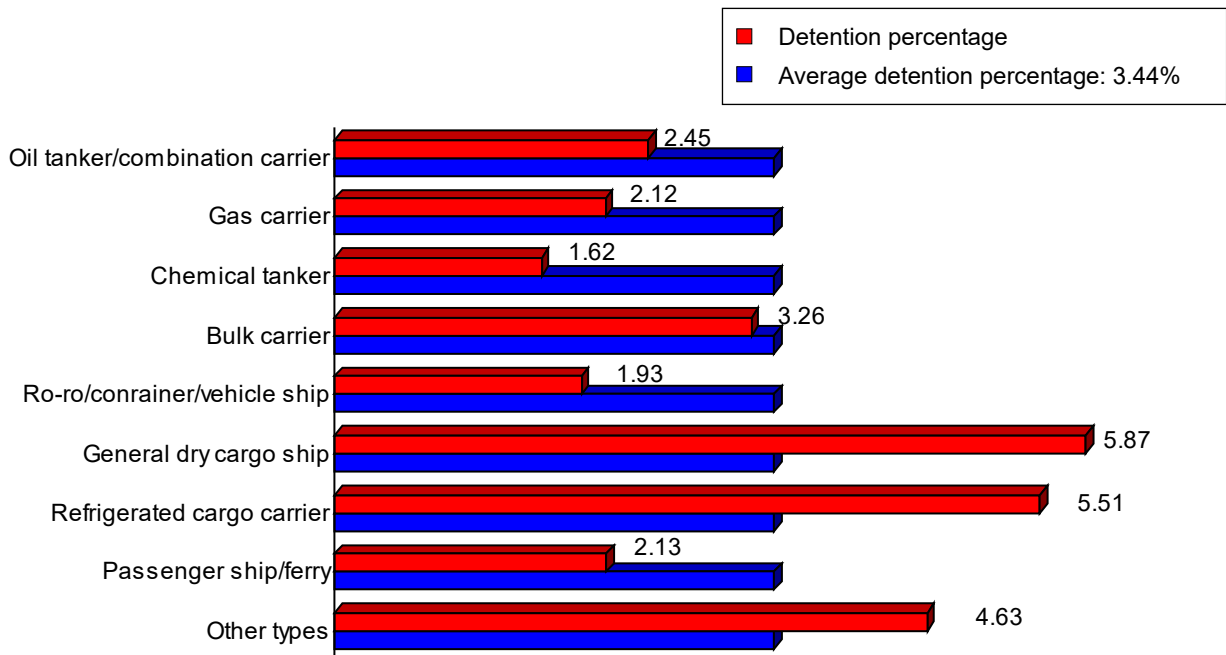


Flags:

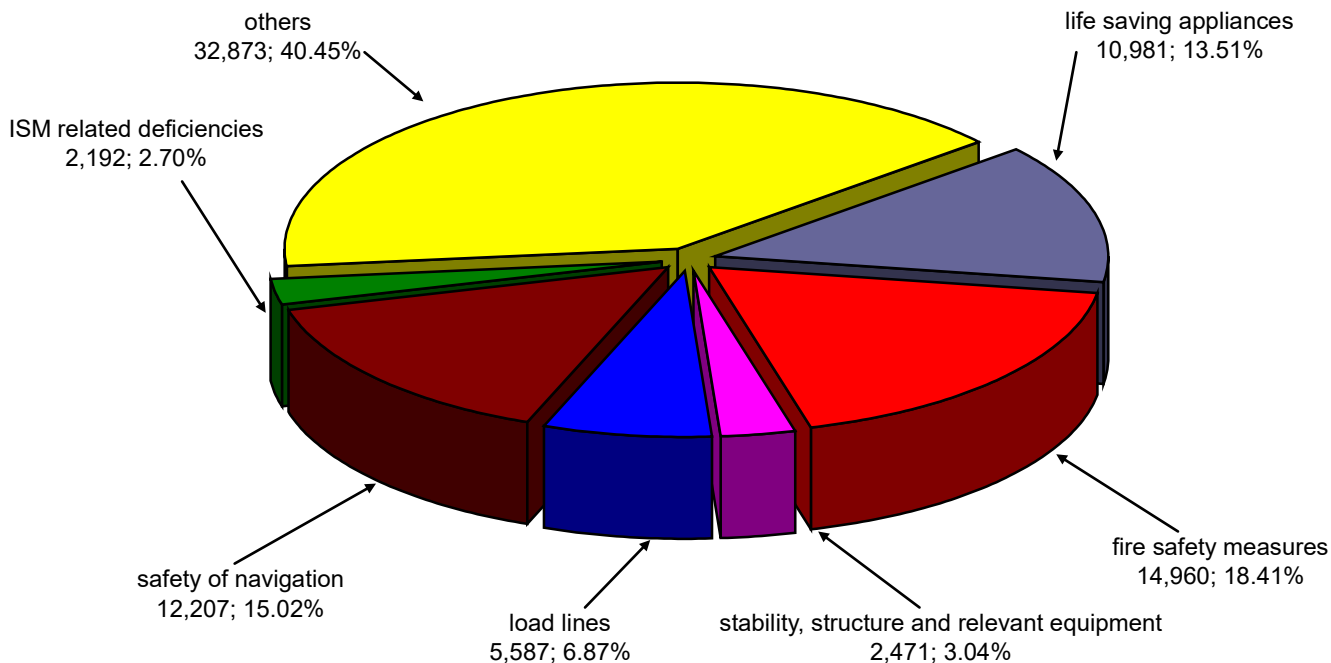
- |                  |                   |                               |                         |
|------------------|-------------------|-------------------------------|-------------------------|
| 1. Tanzania      | 2. Cambodia       | 3. Palau                      | 4. Niue                 |
| 5. Mongolia      | 6. Togo           | 7. Croatia                    | 8. Micronesia           |
| 9. Indonesia     | 10. Sierra Leone  | 11. Korea, Dem. People's Rep. | 12. Vanuatu             |
| 13. Jamaica      | 14. Taiwan, China | 15. Belize                    | 16. Malaysia            |
| 17. Cook Islands | 18. Saudi Arabia  | 19. Bangladesh                | 20. Thailand            |
| 21. Iran         | 22. France        | 23. Russian Federation        | 24. Turkey              |
| 25. Cyprus       | 26. Viet Nam      | 27. Malta                     | 28. Antigua and Barbuda |
| 29. Italy        | 30. Bermuda (UK)  |                               |                         |

Note: Flags listed above are those flags the ships of which were involved in at least 20 port State inspections and detention percentage of which are above the regional average detention percentage. The complete information on detentions by flag is given in Table 3.

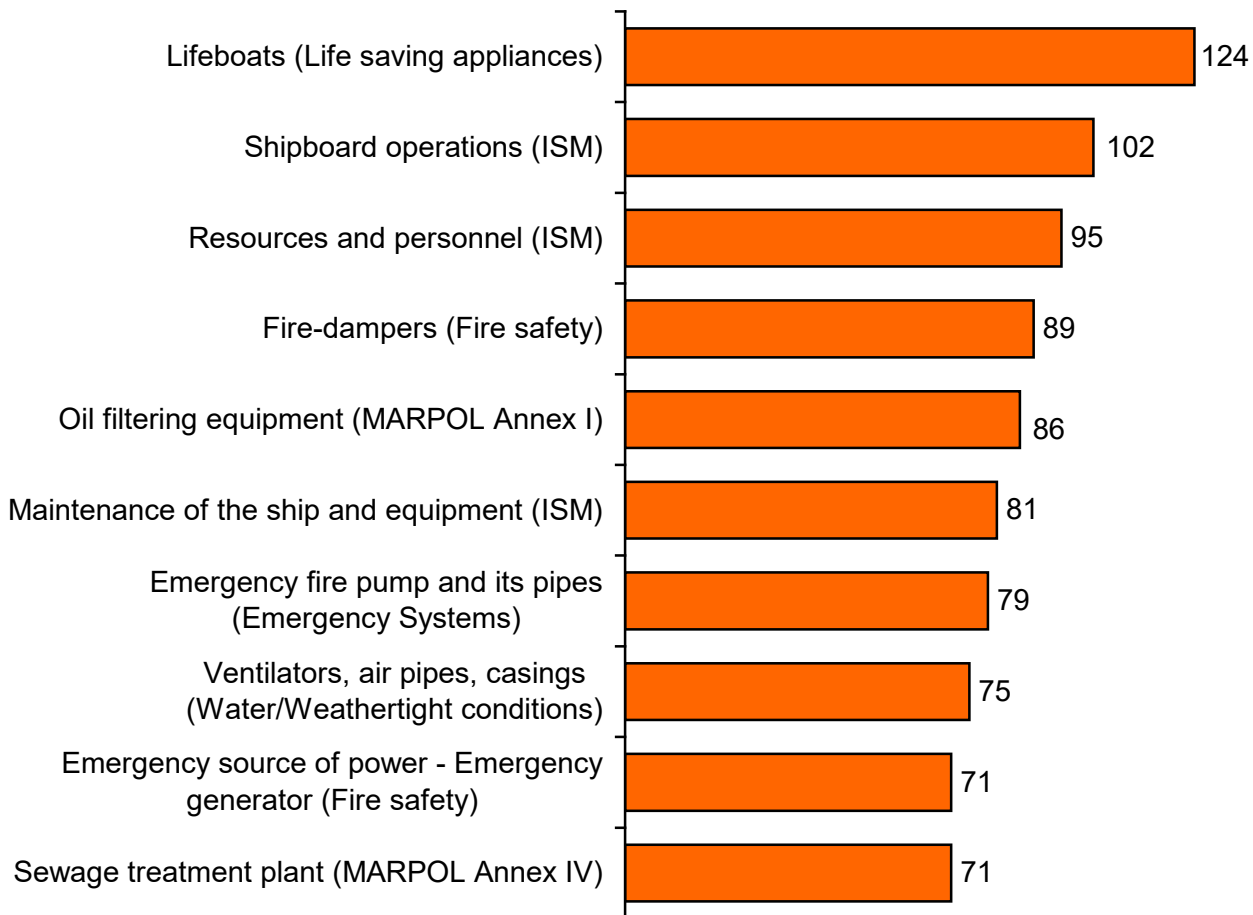
**Figure 6: DETENTION PER SHIP TYPE**



**Figure 7: DEFICIENCIES BY MAIN CATEGORIES**

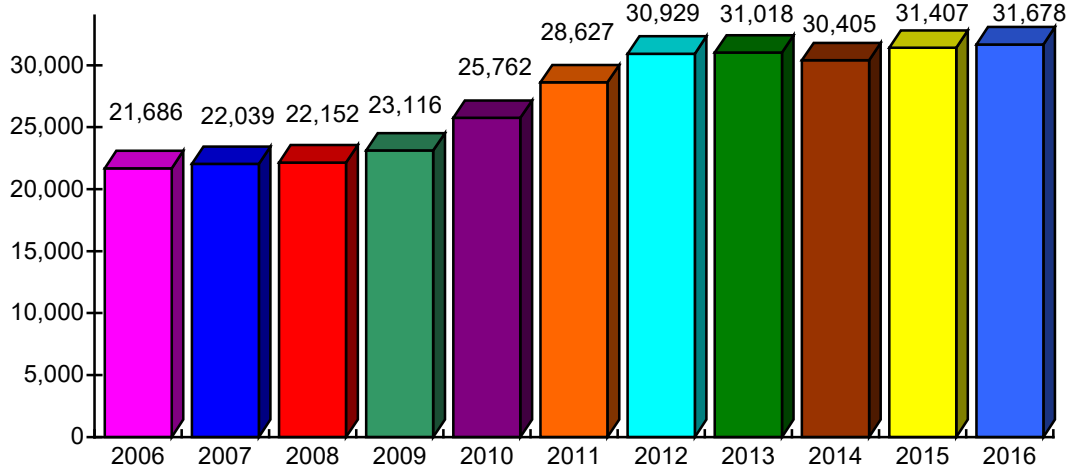


**Figure 8: MOST FREQUENT DETAINABLE DEFICIENCIES**

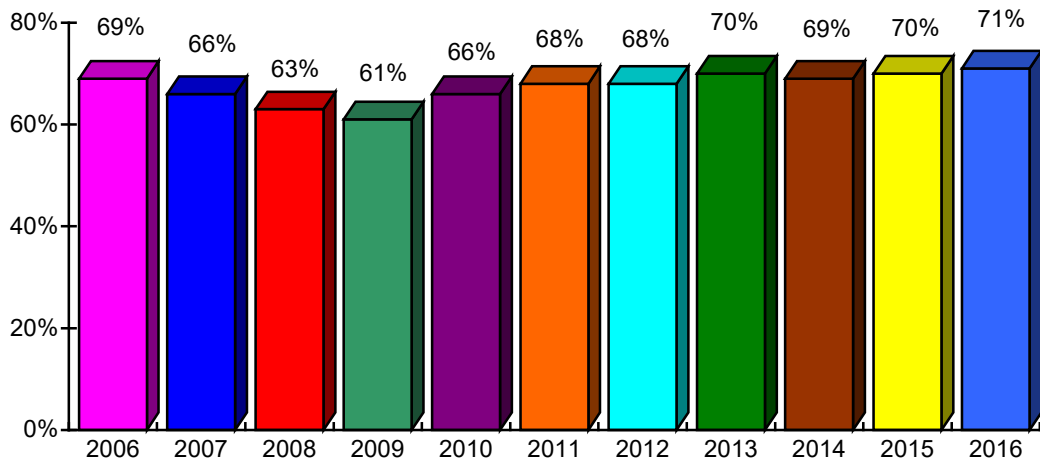


**OVERVIEW OF PORT STATE CONTROL RESULTS 2006 - 2016**

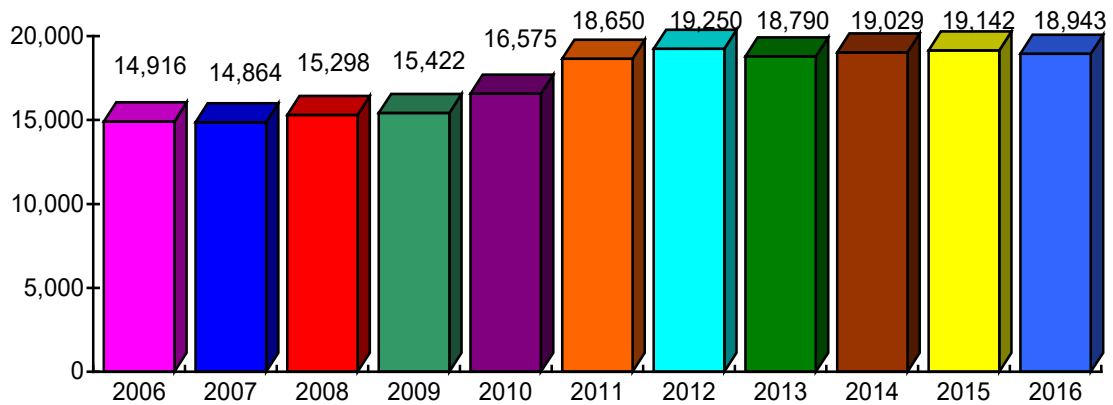
**Figure 9: NO. OF INSPECTIONS**



**Figure 10: INSPECTION PERCENTAGE**

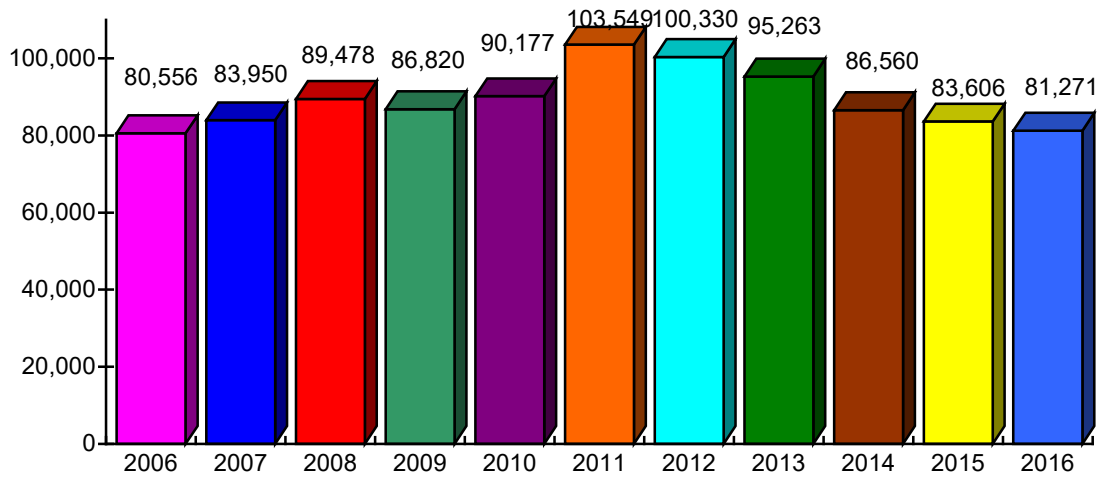


**Figure 11: NO. OF INSPECTIONS WITH DEFICIENCIES**

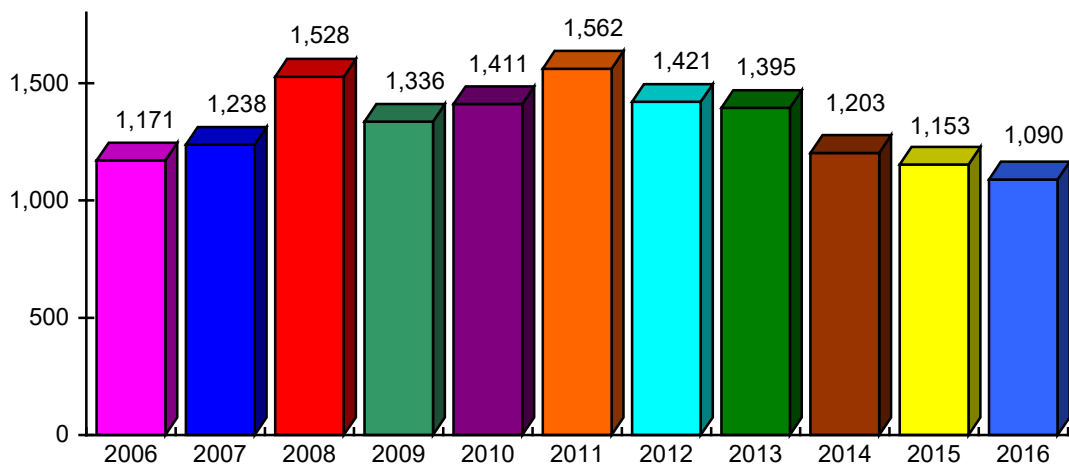




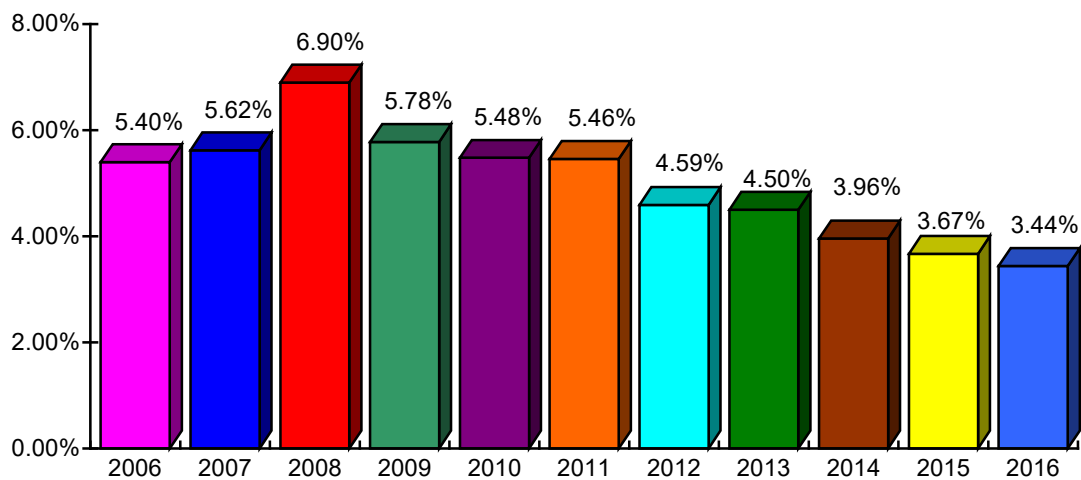
**Figure 12: NO. OF DEFICIENCIES**



**Figure 13: NO. OF DETENTIONS**



**Figure 14: DETENTION PERCENTAGE**



## ANNEX 1

## STATUS OF THE RELEVANT INSTRUMENTS

**Table 1: STATUS OF THE RELEVANT INSTRUMENTS**  
(Date of deposit of instruments)

(as at 31 December 2016)

Authority	LOAD LINES 66	LOAD LINES PROT 88	SOLAS 74	SOLAS PROT 78	SOLAS PROT 88	MARPOL 73/78
Australia	29/07/68	07/02/97	17/08/83	17/08/83	07/02/97	14/10/87
Canada	14/01/70	08/04/10	08/05/78	-	08/04/10	16/11/92
Chile	10/03/75	03/03/95	28/03/80	15/07/92	29/09/95	10/10/94
China	05/10/73	03/02/95	07/01/80	17/12/82	03/02/95	01/07/83
Fiji	29/11/72	28/07/04	04/03/83	28/07/04	28/07/04	-
Hong Kong, China*	16/08/72	23/10/02	25/05/80	14/11/81	23/10/02	11/04/85
Indonesia	17/01/77	-	17/02/81	23/08/88	-	21/10/86
Japan	15/05/68	24/06/97	15/05/80	15/05/80	24/06/97	09/06/83
Republic of Korea	10/07/69	14/11/94	31/12/80	02/12/82	14/11/94	23/07/84
Malaysia	12/01/71	11/11/11	19/10/83	19/10/83	11/11/11	31/01/97
Marshall Islands	26/04/88	29/11/94	26/04/88	26/04/88	16/10/95	26/04/88
New Zealand	05/02/70	03/06/01	23/02/90	23/02/90	03/06/01	25/09/98
Papua New Guinea	18/05/76	-	12/11/80	-	-	25/10/93
Peru	18/01/67	24/06/09	04/12/79	16/07/82	21/08/09	25/04/80
Philippines	04/03/69	-	15/12/81	-	-	15/06/01
Russian Federation	04/07/66	18/08/00	09/01/80	12/05/81	18/08/00	03/11/83
Singapore	21/09/71	18/08/99	16/03/81	01/06/84	10/08/99	01/11/90
Thailand	30/12/92	-	18/12/84	-	-	02/11/07
Vanuatu	28/07/82	26/11/90	28/07/82	28/07/82	14/09/92	13/04/89
Viet Nam	18/12/90	27/05/02	18/12/90	12/10/92	27/05/02	29/05/91
Panama	13/05/66	17/09/07	09/03/78	14/07/82	17/09/07	20/02/85
DPR Korea	18/10/89	08/08/01	01/05/85	01/05/85	08/08/01	01/05/85
Macao, China*	18/07/05	11/10/10	20/12/99	20/12/99	24/06/05	20/12/99
Samoa	23/10/79	18/05/04	14/03/97	14/03/97	18/05/04	07/02/02
Solomon Islands	30/06/04	-	30/06/04	-	-	30/06/04
Tonga	12/04/77	15/06/00	12/04/77	18/09/03	15/06/00	01/02/96
Entry into force date	21/07/68	03/02/00	25/05/80	01/05/81	03/02/00	02/10/83

\* Effective date of extension of instruments.

(as at 31 December 2016)

Authority	STCW 78	COLREG 72	TONNAGE 69	ILO 147**	MLC 2006***	AFS 2001	CLC PROT 92
Australia	07/11/83	29/02/80	21/05/82	-	21/12/11	09/01/07	09/10/95
Canada	06/11/87	07/03/75	18/07/94	D	15/06/10	08/04/10	29/05/98
Chile	09/06/87	02/08/77	22/11/82	-	-	06/10/16	29/05/02
China	08/06/81	07/01/80	08/04/80	-	12/11/15	07/03/11	05/01/99
Fiji	27/03/91	04/03/83	29/11/72	-	21/01/13	08/03/16	30/11/99
Hong Kong, China*	03/11/84	15/07/77	18/07/82	28/11/80	-	15/02/16	05/01/99
Indonesia	27/01/87	13/11/79	14/03/89	-	-	11/09/14	06/07/99
Japan	27/05/82	21/06/77	17/07/80	D	05/08/13	08/07/03	24/08/94
Republic of Korea	04/04/85	29/07/77	18/01/80	-	09/01/14	24/07/08	07/03/97
Malaysia	31/01/92	23/12/80	24/04/84	-	20/08/13	27/09/10	09/06/04
Marshall Islands	25/04/89	26/04/88	25/04/89	-	25/09/07	09/05/08	16/10/95
New Zealand	30/07/86	26/11/76	06/01/78	-	09/03/16	-	25/06/98
Papua New Guinea	28/10/91	18/05/76	25/10/93	-	-	-	23/01/01
Peru	16/07/82	09/01/80	16/07/82	06/07/04	-	-	01/09/05
Philippines	22/02/84	10/06/13	06/09/78	-	20/08/12	-	07/07/97
Russian Federation	09/10/79	09/11/73	20/11/69	D	20/08/12	19/10/12	20/03/00
Singapore	01/05/88	29/04/77	06/06/85	-	15/06/11	31/12/09	18/09/97
Thailand	19/06/97	06/08/79	11/06/96	-	07/06/16	-	-
Vanuatu	22/04/91	28/07/82	13/01/89	-	-	20/08/08	18/02/99
Viet Nam	18/12/90	18/12/90	18/12/90	-	08/05/13	27/11/15	17/06/03
Panama	29/06/92	14/03/79	09/03/78	-	06/02/09	17/09/07	18/03/99
DPR Korea	01/05/85	01/05/85	18/10/89	-	-	-	-
Macao, China*	18/07/05	20/12/99	18/07/05	-	-	07/03/11	24/06/05
Samoa	24/05/93	23/10/79	18/05/04	-	21/11/13	-	01/02/02
Solomon Islands	01/06/94	12/03/82	30/06/04	-	-	-	30/06/04
Tonga	07/02/95	12/04/97	12/04/97	-	-	16/04/14	10/12/99
Entry into force date	28/04/84	15/07/77	18/07/82	28/11/81	20/08/13	17/09/08	30/05/96

\* Effective date of extension of instruments.

\*\* Although some Authorities have not ratified the ILO Convention No.147, parts of the ILO conventions referred to therein are implemented under their national legislation and port State control is carried out on matters covered by the national regulations.

\*\*\* MLC 2006 will supersede ILO147 if the Authority ratified both of them.

**Table 1a: STATUS OF MARPOL 73/78**

(Date of deposit of instruments)

(As at 31 December 2016)

Authority	Annexes I & II	Annex III	Annex IV	Annex V	Annex VI
Australia	14/10/87	10/10/94	27/02/04	14/08/90	07/08/07
Canada	16/11/92	08/08/02	26/03/10	26/03/10	26/03/10
Chile	10/10/94	10/10/94	10/10/94	15/08/08	16/10/06
China	01/07/83	13/09/94	02/11/06	21/11/88	23/05/06
Fiji	-	-	-	-	-
Hong Kong, China*	11/04/85	07/03/95	02/11/06	27/03/96	20/03/08
Indonesia	21/10/86	24/08/12	24/08/12	24/08/12	24/08/12
Japan	09/06/83	09/06/83	09/06/83	09/06/83	15/02/05
Republic of Korea	23/07/84	28/02/96	28/11/03	28/02/96	20/04/06
Malaysia	31/01/97	27/09/10	27/09/10	31/01/97	27/09/10
Marshall Islands	26/04/88	26/04/88	26/04/88	26/04/88	07/03/02
New Zealand	25/09/98	25/09/98	-	25/09/98	-
Papua New Guinea	25/10/93	25/10/93	25/10/93	25/10/93	-
Peru	25/04/80	25/04/80	25/04/80	25/04/80	04/12/14
Philippines	15/06/01	15/06/01	15/06/01	15/06/01	-
Russian Federation	03/11/83	14/08/87	14/08/87	14/08/87	08/04/11
Singapore	01/11/90	02/03/94	01/05/05	27/05/99	08/10/00
Thailand	02/11/07	-	-	-	-
Vanuatu	13/04/89	22/04/91	15/03/04	22/04/91	15/03/04
Viet Nam	29/05/91	19/12/14	19/12/14	19/12/14	19/12/14
Panama	20/02/85	20/02/85	20/02/85	20/02/85	13/05/03
DPR Korea	01/05/01	01/05/01	01/05/01	01/05/01	-
Macao, China*	20/12/99	20/12/99	02/11/06	20/12/99	23/05/06
Samoa	07/02/02	07/02/02	07/02/02	07/02/02	18/05/04
Solomon Islands	30/06/04	30/06/04	30/06/04	30/06/04	-
Tonga	01/02/96	01/02/96	01/02/96	01/02/96	20/03/15
Entry into force date	02/10/1983	01/07/1992	27/09/2003	31/12/1988	19/05/2005

\* Effective date of extension of instruments.

## ANNEX 2

## PORT STATE INSPECTION STATISTICS

## STATISTICS FOR 2016

Table 2: PORT STATE INSPECTIONS CARRIED OUT BY AUTHORITIES

Authority	No. of individual ships inspected (a)	No. of initial and follow-up inspections (b+c)	No. of initial inspections (b)	No. of follow-up inspections (c)	No. of inspections with deficiencies (d)	No. of deficiencies <sup>1)</sup> (e)	No. of detentions <sup>1)</sup> (f)	No. of individual ships visited <sup>2)</sup> (g)	Inspection rate (a/g%)	Detention percentage (f/b%)
Australia <sup>3)</sup>	3,271	6,260	3,675	2,585	2,122	8,928	245	5,744	56.95	6.67
Canada <sup>4)</sup>	509	510	510	0	304	1,146	2	1,878	27.10	0.39
Chile	801	1,269	869	400	388	895	11	1,799	44.52	1.27
China	6,090	9,232	7,736	1,496	6,407	30,216	422	15,640	38.94	5.46
Fiji	10	10	10	0	0	0	0	214	4.67	0
Hong Kong, China	621	784	630	154	559	2,559	24	5,165	12.02	3.81
Indonesia	1,835	2,325	2,143	182	603	2,170	33	6,870	26.71	1.54
Japan	3,507	7,156	5,438	1,718	3,339	16,292	181	7,484	46.86	3.33
Republic of Korea	1,699	2,769	1,988	781	1,309	5,080	72	10,091	16.84	3.62
Malaysia	985	1,409	1,193	216	469	1,801	18	6,805	14.47	1.51
Marshall Islands	18	25	19	6	15	103	2	96	18.75	10.53
New Zealand	166	234	184	50	116	559	3	980	16.94	1.63
Papua New Guinea	104	195	129	66	60	260	4	368	28.26	3.10
Peru	473	680	484	196	144	384	3	1,712	27.63	0.62
Philippines	1,695	2,975	2,420	555	658	1,706	1	3,351	50.58	0.04
Russian Federation <sup>4)</sup>	733	2,063	1,049	1,014	807	3,661	22	2,084	35.17	2.10
Singapore	920	1,420	1,035	385	711	2,795	29	13,900	6.62	2.80
Thailand	487	731	634	97	102	240	0	3,920	12.42	0
Vanuatu	0	0	0	0	0	0	0	67	0	0
Viet Nam	1249	2,032	1,532	500	830	2,476	18	3,563	35.05	1.17
<b>Total</b>	<b>17,503</b>	<b>42,079</b>	<b>31,678</b>	<b>10,401</b>	<b>18,943</b>	<b>81,271</b>	<b>1,090</b>	<b>Regional 24,744</b>	<b>Regional 71%</b>	<b>Regional 3.44%</b>

1) Numbers of deficiencies and detentions do not include those related to security.

2) LLI data for 2016.

3) Data for Australia is also provided to Indian Ocean MOU.

4) Data are only for the Pacific ports.

Table 2a: PORT STATE INSPECTIONS ON MARITIME SECURITY

Authority	No. of inspections	No. of inspections with security related deficiencies	No. of security related deficiencies	No. of security related detentions	Detention percentage (%)
Australia	3,675	12	12	0	0
Canada	510	8	8	0	0
Chile	869	12	12	0	0
China	7,736	365	384	15	0.19
Fiji	10	0	0	0	0
Hong Kong, China	630	71	74	0	0
Indonesia	2,143	15	15	0	0
Japan	5,438	418	469	0	0
Republic of Korea	1,988	145	181	4	0.20
Malaysia	1,193	51	54	4	0.34
Marshall Islands	19	2	2	0	0
New Zealand	184	4	4	0	0
Papua New Guinea	129	4	4	0	0
Peru	484	6	6	0	0
Philippines	2,420	117	239	0	0
Russian Federation	1,049	50	51	0	0
Singapore	1,035	19	19	0	0
Thailand	634	10	10	0	0
Vanuatu	0	0	0	0	0
Viet Nam	1,532	78	80	0	0
<b>Total</b>	<b>31,678</b>	<b>1,387</b>	<b>1,624</b>	<b>23</b>	<b>Regional 0.07%</b>

Note: Security related data showing in the above table and the tables of deficiency by category are excluded from all other statistical tables and figures in this report.

Table 3: PORT STATE INSPECTIONS PER SHIP RISK PROFILE

Authority	Ship Risk Profile (SRP)				Total No. of inspections
	HRS	SRS	LRS	SRP Unknown	
Australia	531	1,553	1,584	7	3,675
Canada	59	210	241	0	510
Chile	88	462	318	1	869
China	3,009	2,992	1,735	0	7,736
Fiji	1	8	1	0	10
Hong Kong, China	126	317	187	0	630
Indonesia	546	803	794	0	2,143
Japan	2,189	2,137	1,074	38	5,438
Republic of Korea	792	802	393	1	1,988
Malaysia	325	536	320	12	1,193
Marshall Islands	8	8	3	0	19
New Zealand	66	94	24	0	184
Papua New Guinea	45	63	21	0	129
Peru	74	251	158	1	484
Philippines	520	1061	839	0	2,420
Russian Federation	639	284	125	1	1,049
Singapore	232	620	183	0	1,035
Thailand	85	312	237	0	634
Vanuatu	0	0	0	0	0
Viet Nam	634	582	316	0	1,532
<b>Total</b>	<b>9,969</b>	<b>13,095</b>	<b>8,553</b>	<b>61</b>	<b>31,678</b>

Table 4: PORT STATE INSPECTIONS PER FLAG

Flag	No. of inspections	No. of inspections with deficiencies	No. of deficiencies	No. of detentions	Detention percentage %
Antigua and Barbuda	423	260	865	17	4.02
Australia	12	3	13	0	0
Bahamas	764	382	1,267	14	1.83
Bahrain	2	1	2	0	0
Bangladesh	42	36	152	2	4.76
Barbados	14	7	30	1	7.14
Belgium	27	16	47	0	0
Belize	712	671	3,611	40	5.62
Bermuda (UK)	81	42	134	3	3.70
Brazil	4	2	13	0	0
Brunei Darussalam	11	9	29	1	9.09
Cambodia	450	444	3,481	76	16.89
Cayman Islands (UK)	100	36	106	1	1.00
Chile	10	6	21	0	0
China	659	333	1,350	4	0.61
Comoros	3	2	18	1	33.33
Cook Islands	40	27	181	2	5.00
Croatia	23	13	76	3	13.04
Curacao	20	10	38	0	0
Cyprus	512	292	1,120	21	4.10
Denmark	182	80	223	2	1.10
Dominica	10	9	64	3	30.00
Ecuador	3	2	13	1	33.33
Egypt	6	4	12	0	0
Estonia	1	1	3	0	0
Ethiopia	4	4	8	0	0
Falkland Islands (UK) (Malvinas)	1	1	2	0	0
Faroe Islands (Denmark)	1	1	4	0	0
Fiji <sup>(1)</sup>	19	18	205	3	15.79
France	43	23	69	2	4.65
Germany	110	59	164	1	0.91
Gibraltar (UK)	65	37	129	2	3.08
Greece	361	193	654	11	3.05
Honduras	1	1	31	1	100.00
Hong Kong, China	3,197	1,426	4,625	30	0.94

<sup>(1)</sup> In January 2017, a notification was received from the Authority of Fiji, advising that some ships were fraudulently registered under its flag and trading internationally. In this connection, it would be possible that the inspections and detentions for Fiji involve the above mentioned fraudulently registered ships.



Flag	No. of inspections	No. of inspections with deficiencies	No. of deficiencies	No. of detentions	Detention percentage %
India	79	47	205	2	2.53
Indonesia	196	160	985	24	12.24
Iran	43	33	123	2	4.65
Ireland	1	1	1	0	0
Isle of Man (UK)	200	84	295	6	3.00
Israel	9	8	43	2	22.22
Italy	104	57	195	4	3.85
Jamaica	40	39	261	3	7.50
Japan	213	117	374	3	1.41
Kiribati	150	134	816	5	3.33
Korea, Democratic People's Republic	275	275	2,278	25	9.09
Korea, Republic of	1,412	1,018	4,143	14	0.99
Kuwait	30	9	21	1	3.33
Lebanon	2	2	10	0	0
Liberia	2,448	1,368	4,944	63	2.57
Libya	4	2	6	0	0
Luxembourg	44	27	70	0	0
Malaysia	193	126	666	10	5.18
Maldives	1	1	15	1	100.00
Malta	1,017	578	2,100	41	4.03
Marshall Islands	2,371	1,182	4,071	68	2.87
Mauritius	1	0	0	0	0
Micronesia <sup>(2)</sup>	302	298	2,178	37	12.25
Moldova	3	3	31	0	0
Mongolia	108	96	610	16	14.81
Montenegro	1	1	4	0	0
Myanmar	5	2	9	0	0
Netherlands	100	53	169	3	3.00
New Zealand	3	3	7	0	0
Niue	53	48	348	8	15.09
Norway	256	126	386	5	1.95
Pakistan	8	5	27	0	0
Palau	46	44	385	7	15.22
Panama	8,513	5,089	20,500	291	3.42
Papua New Guinea	10	10	118	6	60.00
Peru	4	3	17	1	25.00
Philippines	204	126	526	5	2.45

<sup>(2)</sup> In February 2017, a notification by the Permanent Mission of the Federated States of Micronesia (FSM) to the United Nations was received, advising that the laws of FSM do not provide or allow for an international ship registry and, therefore, ships registered under Micronesia International Ship Registry were fraudulent. In this connection, it would be possible that the inspections and detentions for Micronesia involve the above mentioned fraudulently registered ships.

Flag	No. of inspections	No. of inspections with deficiencies	No. of deficiencies	No. of detentions	Detention percentage %
Poland	1	1	2	0	0
Portugal	187	109	337	4	2.14
Qatar	1	1	4	0	0
Russian Federation	325	290	1,410	15	4.62
Saint Kitts and Nevis	15	13	93	0	0
Saint Vincent and the Grenadines	75	62	283	1	1.33
Saudi Arabia	42	28	76	2	4.76
Seychelles	3	2	19	1	33.33
Sierra Leone	310	298	2,380	32	10.32
Singapore	2,304	1,045	3,641	18	0.78
Solomon Islands	6	6	38	0	0
South Africa	2	0	0	0	0
Spain	9	5	11	0	0
Sri Lanka	15	6	37	0	0
Sweden	24	12	21	0	0
Switzerland	43	25	82	1	2.33
Taiwan, China	108	50	258	7	6.48
Tanzania	88	86	826	17	19.32
Thailand	276	174	626	13	4.71
Togo	251	248	1,967	35	13.94
Tonga	3	3	19	0	0
Turkey	45	27	79	2	4.44
Tuvalu	111	73	287	2	1.80
Ukraine	3	3	12	0	0
United Arab Emirates (UAE)	4	3	10	0	0
United Kingdom (UK)	190	96	281	2	1.05
United States of America	49	30	110	1	2.04
Vanuatu	79	57	269	7	8.86
Viet Nam	742	559	2,316	30	4.04
Ship's registration withdrawn	5	5	80	5	100.00
<b>Total</b>	<b>31,678</b>	<b>18,943</b>	<b>81,271</b>	<b>1,090</b>	<b>Regional 3.44</b>

Table 5: PORT STATE INSPECTIONS PER SHIP TYPE

Type of ship	No. of inspections	No. of inspections with deficiencies	No. of deficiencies	No. of detentions	Detention percentage %
NLS tanker	61	23	75	4	6.56
Combination carrier	38	21	50	1	2.63
Oil tanker	2,150	1,050	4,287	50	2.33
Gas carrier	803	351	1,240	17	2.12
Chemical tanker	2,289	1,109	3,786	37	1.62
Bulk carrier	11,397	6,520	25,001	372	3.26
Vehicle carrier	889	350	926	9	1.01
Container ship	5,058	2,776	9,438	99	1.96
Ro-Ro cargo ship	107	90	478	9	8.41
General cargo/multi-purpose ship	6,698	5,158	28,667	393	5.87
Refrigerated cargo carrier	672	470	2,511	37	5.51
Woodchip carrier	243	121	396	6	2.47
Livestock carrier	71	42	189	4	5.63
Ro-Ro passenger ship	101	96	563	3	2.97
Passenger ship	227	144	580	4	1.76
Factory ship	3	3	10	0	0
Heavy load carrier	79	44	177	4	5.06
Offshore service vessel	128	92	374	4	3.13
MODU & FPSO	1	1	3	0	0
High speed passenger craft	23	22	101	0	0
Special purpose ship	71	37	202	3	4.23
Tugboat	229	173	812	14	6.11
Others	340	250	1,405	20	5.88
<b>Total</b>	<b>31,678</b>	<b>18,943</b>	<b>81,271</b>	<b>1,090</b>	<b>3.44</b>

Table 6: PORT STATE INSPECTIONS PER RECOGNIZED ORGANIZATION

Recognized organization (RO)	No. of overall inspections	No. of overall detentions	No. of RO responsible detentions	Detention percentage%	RO responsible detention percentage%	Percentage of RO responsible detentions%
American Bureau of Shipping	3,669	83	1	2.26	0.03	1.20
American Register of Shipping	31	1	0	3.23	0	0
Arados Bureau for Sea Services	1	0	0	0	0	0
Asia Classification Society	8	1	0	12.50	0	0
Biro Klasifikasi Indonesia	112	15	0	13.39	0	0
Bulgarski Koraben Registar	2	0	0	0	0	0
Bureau Veritas	3,614	103	10	2.85	0.28	9.71
C.T.M. Inspection and Classification Company, S. de R.L.	2	1	1	50.00	50.00	100.00
Caspian Register of Shipping	1	0	0	0	0	0
China Classification Society	2,587	25	0	0.97	0	0
Columbus American Register	1	1	0	100.00	0	0
Cosmos Marine Bureau	93	9	1	9.68	1.08	11.11
CR Classification Society	257	10	2	3.89	0.78	20.00
Croatian Register of Shipping	39	4	1	10.26	2.56	25.00
Cyprus Bureau of Shipping	4	0	0	0	0	0
DNV GL AS	9,747	255	3	2.62	0.03	1.18
Dromon Bureau of Shipping	73	8	1	10.96	1.37	12.50
Global Marine Bureau	85	10	0	11.76	0	0
Global Shipping Bureau	4	1	0	25.00	0	0
Horizon International of Naval Surveying and Inspection Bureau, S.A.	1	0	0	0	0	0
Icons Marine Services PTE Ltd	2	0	0	0	0	0
Indian Register of Shipping	86	2	0	2.33	0	0
Intermaritime Certification Services, S.A.	651	42	2	6.45	0.31	4.76
International Marine Survey Association	2	0	0	0	0	0
International Maritime Register	1	1	0	100.00	0	0
International Naval Surveys Bureau	30	2	0	6.67	0	0
International Register of Shipping	135	8	0	5.93	0	0
International Ship Classification	231	12	2	5.19	0.87	16.67
Iranian Classification Society	41	2	0	4.88	0.00	0.00
Isthmus Bureau of Shipping	554	34	7	6.14	1.26	20.59
Isthmus Maritime Classification Society S.A.	5	0	0	0	0	0
Korea Classification Society (former Joson Classification Society)	313	25	1	7.99	0.32	4.00
Korea Ship Safety Technology Authority	28	1	0	3.57	0	0
Korean Register of Shipping	3,170	57	0	1.80	0	0

Recognized organization (RO)	No. of overall inspections	No. of overall detentions	No. of RO responsible detentions	Detention percentage%	RO responsible detention percentage%	Percentage of RO responsible detentions%
Libyan Surveyor Mr. Sif Ennasar Abdulhamid Giahmi	1	0	0	0	0	0
Lloyd's Register	4,801	89	3	1.85	0.06	3.37
M&P Surveyors, S. de R.L. de C.V.	2	0	0	0	0	0
Macosnar Corporation	44	5	0	11.36	0	0
Maritime Bureau of Africa	10	4	0	40.00	0	0
Maritime Technical Systems and Services	5	1	0	20.00	0	0
National Cargo Bureau Inc.	1	0	0	0	0	
National Shipping Adjusters Inc	7	3	0	42.86	0	0
New United International Marine Services Ltd	56	1	0	1.79	0	0
Nippon Kaiji Kyokai	10,885	290	12	2.66	0.11	4.14
Novel Classification Society S.A.	3	1	0	33.33	0	0
Overseas Marine Certification Services	503	54	4	10.74	0.80	7.41
Panama Bureau of Shipping	34	3	0	8.82	0	0
Panama Marine Survey and Certification Services, Inc.	2	0	0	0	0	0
Panama Maritime Documentation Services	422	18	0	4.27	0	0
Panama Register Corporation	81	4	0	4.94	0	0
Panama Shipping Registrar Inc.	72	7	1	9.72	1.39	14.29
Phoenix Register of Shipping	3	1	0	33.33	0	0
Polski Rejestr Statkow	32	4	0	12.50	0	0
RINA Services S.p.A.	909	26	0	2.86	0	0
RINAVE Portuguesa	6	1	0	16.67	0	0
Russian Maritime Register of Shipping	461	25	0	5.42	0	0
Ship Classification Malaysia	27	1	1	3.70	3.70	100.00
Shipping Register of Ukraine	2	0	0	0	0	0
SingClass International Pte Ltd	80	9	2	11.25	2.50	22.22
Sing-Lloyd	125	13	0	10.40	0	0
Union Bureau of Shipping	650	106	13	16.31	2.00	12.26
Union Marine Classification Society	1	0	0	0	0	0
Universal Maritime Bureau	289	31	3	10.73	1.04	9.68
Universal Shipping Bureau	17	1	0	5.88	0	0
Venezuelan Register of Shipping	3	0	0	0	0	0
Vietnam Register	772	34	1	4.40	0.13	2.94
Other	43	6	1	13.95	2.33	16.67

Note: The number of overall inspections and overall detentions is calculated corresponding to each recognized organization (RO) that issued statutory certificate(s) for a ship. In case that ship's certificates were issued by more than one ROs, the inspection and detention would be counted to each of them.

Table 7: DEFICIENCIES BY CATEGORIES

Nature of deficiencies		No. of deficiencies
Certificate & Documentation	Crew Certificates	1,559
	Documents	4,290
	Ship Certificates	1,874
Structural Conditions		2,471
Water/Weathertight conditions		5,587
Emergency Systems		5,011
Radio Communications		2,062
Cargo operations including equipment		1,382
Fire safety		14,960
Alarms		573
Safety of Navigation		12,207
Life saving appliances		10,981
Dangerous goods		287
Propulsion and auxiliary machinery		3,817
Working and Living Conditions	Living Conditions	403
	Working Conditions	2,501
Labour Conditions	Minimum requirements for seafarers	38
	Conditions of employment	483
	Accommodation, recreational facilities, food and catering	1,025
	Health protection, medical care, social security	2,172
Pollution prevention	Anti Fouling	7
	MARPOL Annex I	1,609
	MARPOL Annex II	25
	MARPOL Annex III	12
	MARPOL Annex IV	1,199
	MARPOL Annex V	1,162
ISM		2,192
Other		537
<b>Total</b>		<b>81,271</b>
ISPS		1,624
<b>Grand total</b>		<b>82,895</b>

## SUMMARY OF PORT STATE INSPECTION DATA 2014 – 2016

Table 8: BLACK – GREY – WHITE LISTS \*

Flag	Inspections 2014-2016	Detentions 2014-2016	Black to Grey Limit	Grey to White Limit	Excess Factor
<b>BLACK LIST</b>					
Mongolia	383	64	36		3.23
Sierra Leone	815	128	70		3.22
Cambodia	3,086	417	240		2.84
Tanzania	137	24	15		2.84
Indonesia	583	85	51		2.75
Togo	393	54	36		2.34
Niue	129	20	14		2.22
Korea, Democratic People's Republic	724	88	62		2.08
Micronesia <sup>(1)</sup>	302	37	29		1.78
Palau	76	11	9		1.52
<b>GREY LIST</b>					
Cook Islands	94	10	11	2	0.87
Dominica	35	4	5	0	0.76
Jamaica	94	8	11	2	0.66
Saint Kitts and Nevis	85	7	10	2	0.62
Kiribati	613	44	54	32	0.55
Barbados	44	3	6	0	0.49
Bangladesh	164	11	17	6	0.46
Vanuatu	311	21	30	14	0.45
Iran	137	9	15	4	0.45
Belize	1,741	118	140	104	0.39
Croatia	69	3	9	1	0.27
Sweden	64	2	8	1	0.18
India	241	12	24	10	0.15
Saudi Arabia	119	4	13	3	0.07
Philippines	610	33	54	32	0.05
Curacao	64	1	8	1	0.05
Kuwait	65	1	8	1	0.04
Switzerland	108	3	12	3	0.03
Turkey	149	5	16	5	0.02
Taiwan, China	327	15	31	15	0.01
<b>WHITE LIST</b>					
Gibraltar (UK)	219	8		9	-0.12
Russian Federation	838	42		46	-0.18

<sup>(1)</sup> For Micronesia, see footnote in page 28.

Flag	Inspections 2014-2016	Detentions 2014-2016	Black to Grey Limit	Grey to White Limit	Excess Factor
Italy	326	13		15	-0.22
Antigua and Barbuda	1,398	69		82	-0.33
Luxembourg	114	2		3	-0.42
France	118	2		3	-0.48
Thailand	827	34		45	-0.51
Cyprus	1,521	62		90	-0.66
Germany	412	12		20	-0.75
Greece	1,070	39		61	-0.75
Malta	2,781	113		172	-0.75
Belgium	79	0		1	-0.86
Isle of Man (UK)	604	18		31	-0.86
Bermuda (UK)	223	4		9	-0.92
Tuvalu	321	7		14	-0.94
Viet Nam	2,197	76		134	-0.94
Portugal	331	7		15	-0.98
Malaysia	670	18		36	-1.00
Liberia	7,008	249		455	-1.02
Panama	25,664	920		1,729	-1.07
Saint Vincent and the Grenadines	294	5		13	-1.12
United States of America	144	1		5	-1.16
United Kingdom (UK)	543	10		28	-1.29
Cayman Islands (UK)	307	4		14	-1.33
Bahamas	2,158	50		131	-1.36
Marshall Islands	6,283	156		406	-1.39
Netherlands	339	4		16	-1.43
Denmark	497	7		25	-1.46
Norway	707	10		38	-1.54
Japan	605	8		32	-1.55
Hong Kong, China	9,280	99		609	-1.91
Singapore	6,667	63		432	-1.95
Korea, Republic of	4,381	33		278	-2.00
China	2,361	7		144	-2.54

- Note:** 1) Flags listed above are those of ships which were involved in 30 or more port State inspections over the 3-year period.
- 2) According to the decision by the Port State Control Committee, flags involving 30-49 port State inspections with nil detentions are listed on top of the White List.

\* See explanatory note on page 55.

$p=7\%$

$z_{95\%}=1.645$

$q=3\%$



Table 9: INSPECTIONS AND DETENTIONS PER FLAG

Flag	Number of inspections				Number of detentions				3-year rolling average detention %
	2014	2015	2016	Total	2014	2015	2016	Total	
Antigua and Barbuda	502	473	423	1,398	27	25	17	69	4.94
Australia	3	4	12	19	0	0	0	0	0
Bahamas	661	733	764	2,158	16	20	14	50	2.32
Bahrain	4	2	2	8	0	0	0	0	0
Bangladesh	65	57	42	164	7	2	2	11	6.71
Barbados	17	13	14	44	2	0	1	3	6.82
Belgium	24	28	27	79	0	0	0	0	0
Belize	483	546	712	1,741	34	44	40	118	6.78
Bermuda (UK)	70	72	81	223	1	0	3	4	1.79
Brazil	0	1	4	5	0	0	0	0	0
Brunei Darussalam	6	5	11	22	1	1	1	3	13.64
Cambodia	1,333	1,303	450	3,086	183	158	76	417	13.51
Canada	0	2	0	2	0	0	0	0	0
Cayman Islands (UK)	107	100	100	307	0	3	1	4	1.30
Chile	1	6	10	17	0	0	0	0	0
China	923	779	659	2,361	1	2	4	7	0.30
Comoros	6	2	3	11	2	2	1	5	45.45
Cook Islands	26	28	40	94	4	4	2	10	10.64
Croatia	24	22	23	69	0	0	3	3	4.35
Curacao	20	24	20	64	0	1	0	1	1.56
Cyprus	495	514	512	1,521	19	22	21	62	4.08
Denmark	134	181	182	497	2	3	2	7	1.41
Dominica	16	9	10	35	1	0	3	4	11.43
Ecuador	0	0	3	3	0	0	1	1	33.33
Egypt	14	6	6	26	2	1	0	3	11.54
Equatorial Guinea	1	0	0	1	0	0	0	0	0
Estonia	2	1	1	4	1	0	0	1	25.00
Ethiopia	6	9	4	19	0	0	0	0	0
Falkland Islands (UK) (Malvinas)	3	2	1	6	0	0	0	0	0
Faroe Islands (Denmark)	0	1	1	2	0	0	0	0	0
Fiji	1	0	19	20	0	0	3	3	15.00
France	38	37	43	118	0	0	2	2	1.69
Georgia	1	0	0	1	0	0	0	0	0
Germany	158	144	110	412	6	5	1	12	2.91
Gibraltar (UK)	76	78	65	219	3	3	2	8	3.65

Flag	Number of inspections				Number of detentions				3-year rolling average detention %
	2014	2015	2016	Total	2014	2015	2016	Total	
Greece	345	364	361	1,070	17	11	11	39	3.64
Honduras	5	3	1	9	3	2	1	6	66.67
Hong Kong, China	2,916	3,167	3,197	9,280	32	37	30	99	1.07
India	73	89	79	241	3	7	2	12	4.98
Indonesia	190	197	196	583	25	36	24	85	14.58
Iran	48	46	43	137	6	1	2	9	6.57
Ireland	1	0	1	2	0	0	0	0	0
Isle of Man (UK)	198	206	200	604	6	6	6	18	2.98
Israel	5	10	9	24	0	0	2	2	8.33
Italy	106	116	104	326	2	7	4	13	3.99
Jamaica	23	31	40	94	4	1	3	8	8.51
Japan	201	191	213	605	2	3	3	8	1.32
Jordan	2	0	0	2	0	0	0	0	0
Kiribati	243	220	150	613	24	15	5	44	7.18
Korea, Democratic People's Republic	205	244	275	724	34	29	25	88	12.15
Korea, Republic of	1,471	1,498	1,412	4,381	9	10	14	33	0.75
Kuwait	18	17	30	65	0	0	1	1	1.54
Lebanon	0	1	2	3	0	0	0	0	0
Liberia	2,214	2,346	2,448	7,008	89	97	63	249	3.55
Libya	4	2	4	10	0	0	0	0	0
Lithuania	1	1	0	2	0	0	0	0	0
Luxembourg	35	35	44	114	1	1	0	2	1.75
Malaysia	277	200	193	670	4	4	10	18	2.69
Maldives	5	2	1	8	0	0	1	1	12.50
Malta	821	943	1,017	2,781	34	38	41	113	4.06
Marshall Islands	1,809	2,103	2,371	6,283	43	45	68	156	2.48
Mauritius	1	2	1	4	0	0	0	0	0
Micronesia	0	0	302	302	0	0	37	37	12.25
Moldova	0	0	3	3	0	0	0	0	0
Mongolia	138	137	108	383	24	24	16	64	16.71
Montenegro	1	1	1	3	0	0	0	0	0
Myanmar	6	5	5	16	1	0	0	1	6.25
Netherlands	126	113	100	339	0	1	3	4	1.18
New Zealand	3	7	3	13	0	1	0	1	7.69
Nigeria	1	0	0	1	0	0	0	0	0
Niue	31	45	53	129	4	8	8	20	15.50

Flag	Number of inspections				Number of detentions				3-year rolling average detention %
	2014	2015	2016	Total	2014	2015	2016	Total	
Norway	230	221	256	707	3	2	5	10	1.41
Pakistan	11	5	8	24	0	1	0	1	4.17
Palau	6	24	46	76	0	4	7	11	14.47
Panama	8,604	8,547	8,513	25,664	342	287	291	920	3.58
Papua New Guinea	9	8	10	27	3	1	6	10	37.04
Peru	6	6	4	16	1	0	1	2	12.50
Philippines	209	197	204	610	15	13	5	33	5.41
Poland	0	0	1	1	0	0	0	0	0
Portugal	46	98	187	331	2	1	4	7	2.11
Qatar	3	0	1	4	0	0	0	0	0
Russian Federation	237	276	325	838	14	13	15	42	5.01
Saint Kitts and Nevis	33	37	15	85	3	4	0	7	8.24
Saint Vincent and the Grenadines	132	87	75	294	3	1	1	5	1.70
Samoa	3	1	0	4	1	1	0	2	50.00
Saudi Arabia	36	41	42	119	0	2	2	4	3.36
Seychelles	0	0	3	3	0	0	1	1	33.33
Sierra Leone	225	280	310	815	42	54	32	128	15.71
Singapore	2,113	2,250	2,304	6,667	22	23	18	63	0.94
Solomon Islands	2	8	6	16	0	1	0	1	6.25
South Africa	0	1	2	3	0	0	0	0	0
Spain	3	1	9	13	0	0	0	0	0
Sri Lanka	6	8	15	29	0	0	0	0	0
Sweden	20	20	24	64	2	0	0	2	3.13
Switzerland	35	30	43	108	2	0	1	3	2.78
Taiwan, China	98	121	108	327	3	5	7	15	4.59
Tanzania	22	27	88	137	4	3	17	24	17.52
Thailand	282	269	276	827	10	11	13	34	4.11
Togo	58	84	251	393	7	12	35	54	13.74
Tonga	3	2	3	8	0	0	0	0	0
Tunisia	2	0	0	2	0	0	0	0	0
Turkey	51	53	45	149	2	1	2	5	3.36
Tuvalu	107	103	111	321	3	2	2	7	2.18
Ukraine	2	3	3	8	1	0	0	1	12.50
United Arab Emirates (UAE)	4	3	4	11	1	0	0	1	9.09
United Kingdom (UK)	167	186	190	543	4	4	2	10	1.84
United States of America	44	51	49	144	0	0	1	1	0.69

Flag	Number of inspections				Number of detentions				3-year rolling average detention %
	2014	2015	2016	Total	2014	2015	2016	Total	
Vanuatu	120	112	79	311	8	6	7	21	6.75
Viet Nam	733	722	742	2,197	26	20	30	76	3.46
Ship's registration withdrawn	0	1	5	6	0	1	5	6	100.00
<b>Total</b>	<b>30,405</b>	<b>31,407</b>	<b>31,678</b>	<b>93,490</b>	<b>1,203</b>	<b>1,153</b>	<b>1,090</b>	<b>3,446</b>	<b>3.69</b>

Figure 15: COMPARISON OF INSPECTIONS PER SHIP TYPE

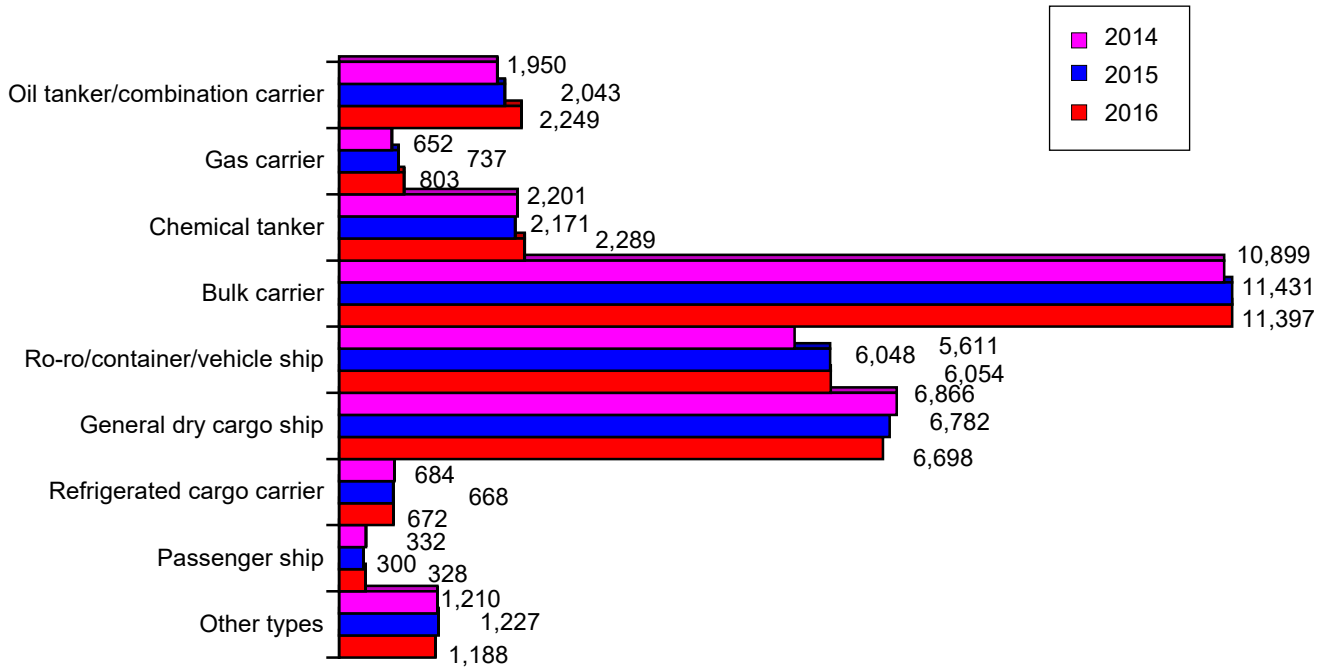


Figure 16: COMPARISON OF DETENTIONS PER SHIP TYPE

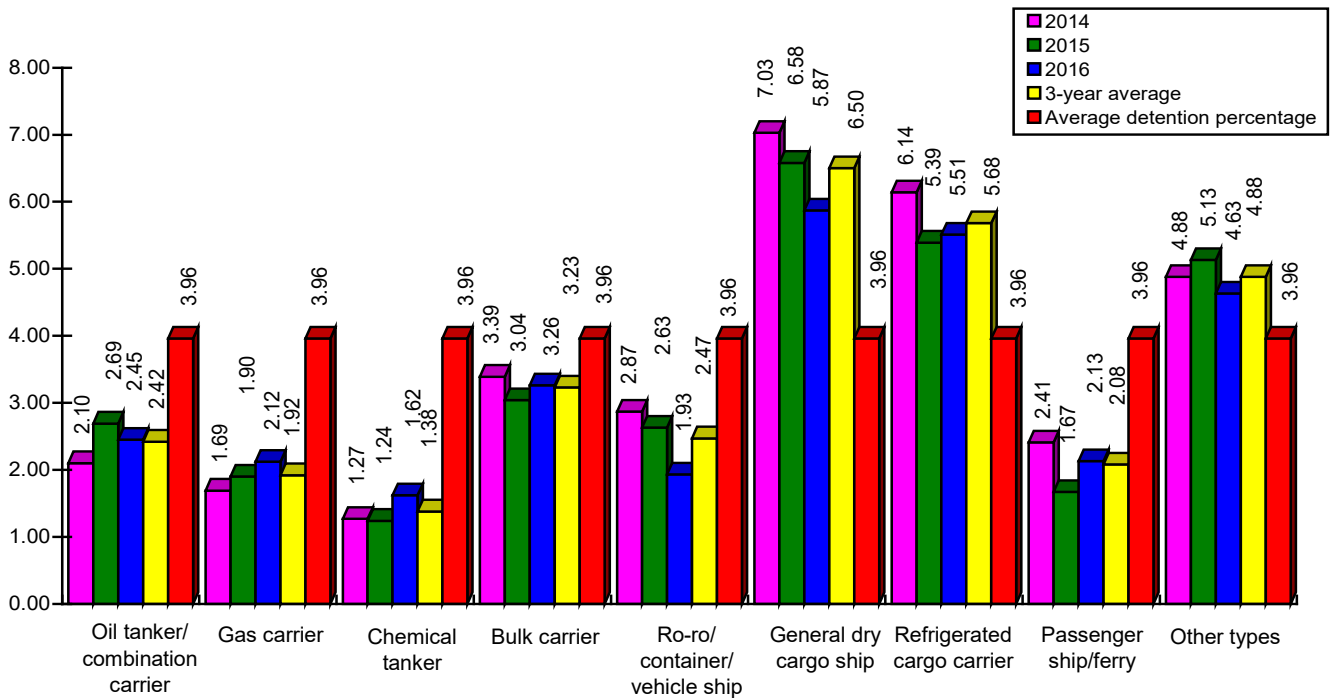
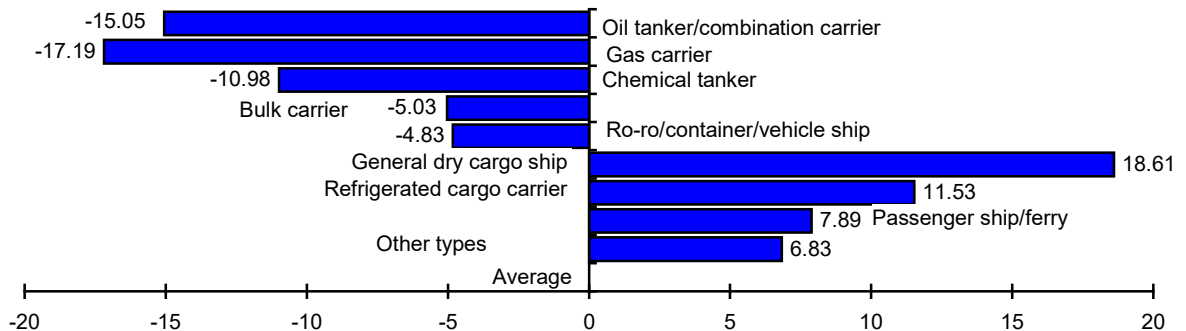


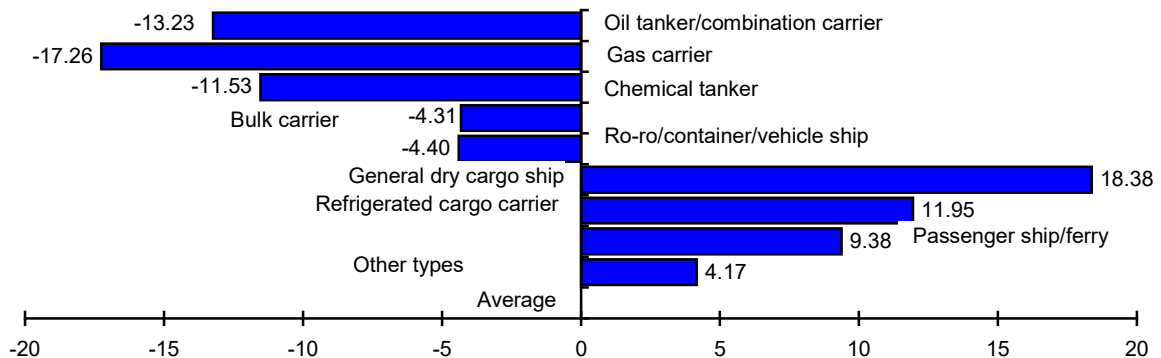
Table 10: INSPECTIONS AND DETENTIONS PER SHIP TYPE

Type of ship	Number of inspections				Number of detentions				Average detention percentage %
	2014	2015	2016	Total	2014	2015	2016	Total	
NLS tanker	45	54	61	160	1	4	4	9	5.63
Combination carrier	35	31	38	104	1	1	1	3	2.88
Oil tanker	1,870	1,958	2,150	5,978	39	50	50	139	2.33
Gas carrier	652	737	803	2,192	11	14	17	42	1.92
Chemical tanker	2,201	2,171	2,289	6,661	28	27	37	92	1.38
Bulk carrier	10,899	11,431	11,397	33,727	370	348	372	1,090	3.23
Vehicle carrier	779	871	889	2,539	20	20	9	49	1.93
Container ship	4,633	5,058	5,058	14,749	136	131	99	366	2.48
Ro-Ro cargo ship	199	119	107	425	5	8	9	22	5.18
General cargo/multi-purpose ship	6,866	6,782	6,698	20,346	483	446	393	1,322	6.50
Refrigerated cargo carrier	684	668	672	2,024	42	36	37	115	5.68
Woodchip carrier	227	223	243	693	4	7	6	17	2.45
Livestock carrier	74	64	71	209	7	4	4	15	7.18
Ro-Ro Passenger ship	104	76	101	281	2	2	3	7	2.49
Passenger ship	228	224	227	679	6	3	4	13	1.91
Factory ship	1	2	3	6	1	0	0	1	16.67
Heavy load carrier	115	102	79	296	4	4	4	12	4.05
Offshore service vessel	142	158	128	428	8	6	4	18	4.21
MODU & FPSO	5	5	1	11	2	1	0	3	27.27
High speed passenger craft	26	22	23	71	0	0	0	0	0
Special purpose ship	52	70	71	193	5	5	3	13	6.74
Tugboat	257	258	229	744	13	14	14	41	5.51
Others	311	323	340	974	15	22	20	57	5.85
<b>Total</b>	<b>30,405</b>	<b>31,407</b>	<b>31,678</b>	<b>93,490</b>	<b>1,203</b>	<b>1,153</b>	<b>1,090</b>	<b>3,446</b>	<b>3.69</b>

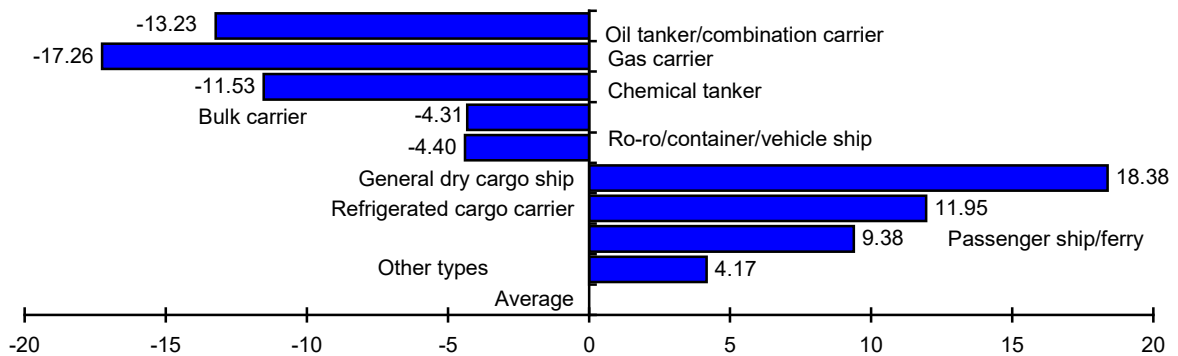
Figure 17: COMPARISON OF INSPECTIONS WITH DEFICIENCIES PER SHIP TYPE



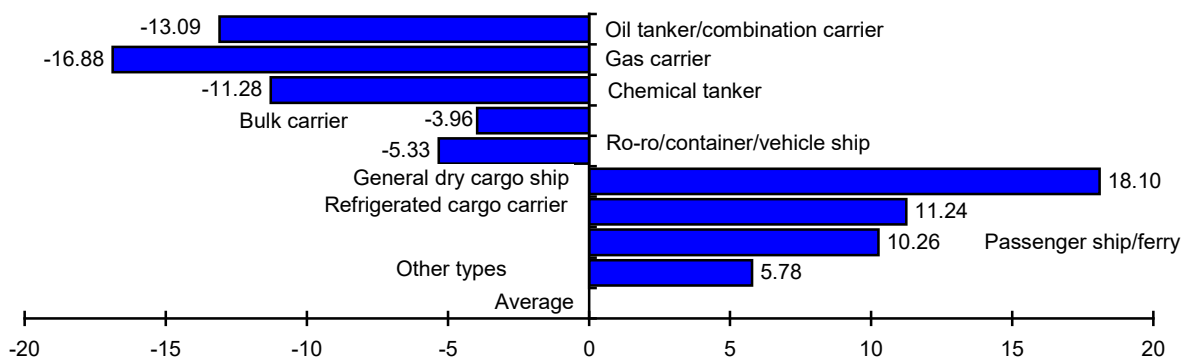
(a) Year 2014



(b) Year 2015



(c) Year 2016



(d) 3-year summary

\* % over [+] or under [-] average

Table 11: INSPECTIONS WITH DEFICIENCIES PER SHIP TYPE

Type of ship	Number of inspections				Number of inspections with deficiencies				3-year average percentage %
	2014	2015	2016	Total	2014	2015	2016	Total	
Oil tanker/combination carrier	1,950	2,043	2,249	6,242	927	975	1094	2,996	48.00
Gas carrier	652	737	803	2,192	296	322	351	969	44.21
Chemical tanker	2,201	2,171	2,289	6,661	1,136	1,073	1109	3,318	49.81
Bulk carrier	10,899	11,431	11,397	33,727	6,273	6,475	6520	19,268	57.13
Ro-ro/container/vehicle ship	5,611	6,048	6,054	17,713	3,241	3,420	3216	9,877	55.76
General dry cargo ship	6,866	6,782	6,698	20,346	5,575	5,380	5158	16,113	79.19
Refrigerated cargo carrier	684	668	672	2,024	507	487	470	1,464	72.33
Passenger ship	332	300	328	960	234	211	240	685	71.35
Other types	1,210	1,227	1,188	3,625	840	799	785	2,424	66.87
<b>Total</b>	<b>30,405</b>	<b>31,407</b>	<b>31,678</b>	<b>93,490</b>	<b>19,029</b>	<b>19,142</b>	<b>18,943</b>	<b>57,114</b>	<b>61.09</b>



Table 12: INSPECTIONS AND DETENTIONS PER RECOGNIZED ORGANIZATION

Recognized organization (RO)	No. of overall inspections 2014-2016	No. of overall detentions 2014-2016	No. of RO responsible detentions 2014-2016	3-year average detention percentage%	3-year average RO responsible detention percentage%	3-year average percentage of RO responsible detentions%
American Bureau of Shipping	10,396	229	10	2.20	0.10	4.37
American Register of Shipping	93	6	0	6.45	0	0
Arados Bureau for Sea Services	1	0	0	0	0	0
Asia Classification Society	18	2	0	11.11	0	0
Belize Maritime Bureau Inc.	4	1	0	25.00	0	0
Biro Klasifikasi Indonesia	326	49	1	15.03	0.31	2.04
Bulgarski Koraben Registar	4	1	0	25.00	0	0
Bureau Securitas	9	0	0	0	0	0
Bureau Veritas	10,544	348	21	3.30	0.20	6.03
C.T.M. Inspection and Classification Company, S. de R.L.	9	6	1	66.67	11.11	16.67
Caspian Register of Shipping	7	0	0	0	0	0
Ceskoslovensky Lodin Register	3	0	0	0	0	0
China Classification Society	7,880	71	1	0.90	0.01	1.41
Columbus American Register	1	1	0	100.00	0	0
Compania Nacional de Registro e Inspeccion de Naves	2	0	0	0	0	0
Cosmos Marine Bureau	129	16	1	12.40	0.78	6.25
CR Classification Society	850	38	3	4.47	0.35	7.89
Croatian Register of Shipping	105	4	1	3.81	0.95	25.00
Cyprus Bureau of Shipping	13	0	0	0	0	0
DNV GL AS	26,399	739	19	2.80	0.07	2.57
Dromon Bureau of Shipping	90	11	1	12.22	1.11	9.09
Ferriby Marine	2	1	0	50.00	0	0
Fidenavis SA	10	1	0	10.00	0	0
Global Marine Bureau	576	64	5	11.11	0.87	7.81
Global Shipping Bureau	25	1	0	4.00	0	0
Hellenic Register of Shipping	4	0	0	0	0	0
Horizon International of Naval Surveying and Inspection Bureau, S.A.	1	0	0	0	0	0
Icons Marine Services PTE Ltd	2	0	0	0	0	0
INCLAMAR (Inspection y Classification Maritime, S. de R.L.)	11	0	0	0	0	0
Indian Register of Shipping	277	15	0	5.42	0	0
Intermaritime Certification Services, S.A.	1,673	108	7	6.46	0.42	6.48
International Marine Survey Association	2	0	0	0	0	0
International Maritime Register	12	2	0	16.67	0	0
International Naval Surveys Bureau	82	9	0	10.98	0	0
International Register of Shipping	571	64	5	11.21	0.88	7.81
International Ship Classification	831	71	9	8.54	1.08	12.68
Iranian Classification Society	143	9	0	6.29	0	0
Isthmus Bureau of Shipping	1,601	103	9	6.43	0.56	8.74
Isthmus Maritime Classification Society S.A.	8	0	0	0	0	0
Korea Classification Society (former Josen Classification Society)	802	89	7	11.10	0.87	7.87
Korea Ship Safety Technology Authority	104	1	0	0.96	0	0
Korean Register of Shipping	9,333	150	3	1.61	0.03	2.00

Recognized organization (RO)	No. of overall inspections 2014-2016	No. of overall detentions 2014-2016	No. of RO responsible detentions 2014-2016	3-year average detention percentage%	3-year average RO responsible detention percentage%	3-year average percentage of RO responsible detentions%
Libyan Surveyor Mr. Sif Ennasar Abdulhamid Giahmi	2	0	0	0	0	0
Lloyd's Register	13,605	319	7	2.34	0.05	2.19
M&P Surveyors, S. de R.L. de C.V.	2	0	0	0	0	0
Macosnar Corporation	131	7	0	5.34	0	0
Maritime Bureau of Africa	10	4	0	40.00	0	0
Maritime Bureau of Shipping	1	0	0	0	0	0
Maritime Lloyd Ltd, Georgia	6	1	0	16.67	0	0
Maritime Technical Systems and Services	24	7	1	29.17	4.17	14.29
National Cargo Bureau Inc.	3	0	0	0	0	0
National Shipping Adjusters Inc	12	3	0	25.00	0	0
New United International Marine Services Ltd	94	10	0	10.64	0	0
Nippon Kaiji Kyokai	31,230	883	39	2.83	0.12	4.42
Novel Classification Society S.A.	4	1	0	25.00	0	0
Overseas Marine Certification Services	1,386	149	8	10.75	0.58	5.37
Panama Bureau of Shipping	123	10	0	8.13	0	0
Panama Marine Survey and Certification Services, Inc.	6	0	0	0	0	0
Panama Maritime Documentation Services	1,226	99	8	8.08	0.65	8.08
Panama Maritime Surveyors Bureau Inc	3	0	0	0	0	0
Panama Register Corporation	227	9	0	3.96	0	0
Panama Shipping Certificate Inc.	5	0	0	0	0	0
Panama Shipping Registrar Inc.	242	24	3	9.92	1.24	12.50
Phoenix Register of Shipping	12	1	0	8.33	0	0
Polski Rejestr Statkow	79	9	1	11.39	1.27	11.11
R.J. Del Pan	2	0	0	0	0	0
Registro Internacional Naval S.A.	36	1	0	2.78	0	0
RINA Services S.p.A.	2,671	92	0	3.44	0	0
RINAVE Portuguesa	25	2	0	8.00	0	0
Russian Maritime Register of Shipping	1,266	63	2	4.98	0.16	3.17
Ship Classification Malaysia	91	1	1	1.10	1.10	100.00
Shipping Register of Ukraine	10	1	1	10.00	10.00	100.00
SingClass International Pte Ltd	249	40	4	16.06	1.61	10.00
Sing-Lloyd	422	72	7	17.06	1.66	9.72
Slovak Lloyd	2	1	0	50.00	0	0
Turkish Lloyd	4	0	0	0	0	0
Union Bureau of Shipping	2,446	360	35	14.72	1.43	9.72
Union Marine Classification Society	2	1	1	50.00	50.00	100.00
Universal Maritime Bureau	956	114	13	11.92	1.36	11.40
Universal Shipping Bureau	65	2	0	3.08	0	0
Venezuelan Register of Shipping	13	1	0	7.69	0	0
Vietnam Register	2,287	86	5	3.76	0.22	5.81
Other	104	12	1	11.54	0.96	8.33

See also the note in page 32.

Table 13: PERFORMANCE OF RECOGNIZED ORGANIZATION

Recognized organization (RO)	No. of overall inspections 2014-2016	No. of RO responsible detentions 2014-2016	Low/medium Limit	Medium/high Limit	Excess factor	Performance level
Polski Rejestr Statkow	79	1	4	0	0.39	Medium
SingClass International Pte Ltd	249	4	9	1	0.38	
Sing-Lloyd	422	7	14	3	0.36	
Dromon Bureau of Shipping	90	1	4	0	0.35	
Ship Classification Malaysia	91	1	5	0	0.35	
Croatian Register of Shipping	105	1	5	0	0.31	
Panama Shipping Registrar Inc.	242	3	9	1	0.27	
Cosmos Marine Bureau	129	1	6	0	0.25	
Universal Maritime Bureau	956	13	27	11	0.10	
International Ship Classification	831	9	24	9	-0.08	
International Register of Shipping	571	5	17	5	-0.10	
Union Bureau of Shipping	2,446	35	61	37	-0.10	
Global Marine Bureau	576	5	18	5	-0.12	
Korea Classification Society (former Joson Classification Society)	802	7	23	9	-0.33	
Biro Klasifikasi Indonesia	326	1	11	2	-0.42	
Panama Register Corporation	227	0	9	1	-0.45	
Indian Register of Shipping	277	0	10	1	-0.73	
Panama Maritime Documentation Services	1,226	8	33	16	-0.80	
Overseas Marine Certification Services	1,386	8	37	19	-0.94	
Isthmus Bureau of Shipping	1,601	9	42	22	-1.00	
CR Classification Society	850	3	24	10	-1.06	
Intermaritime Certification Services, S.A.	1,673	7	43	24	-1.25	
Russian Maritime Register of Shipping	1,266	2	34	17	-1.63	
Vietnam Register	2,287	5	57	34	-1.63	
Bureau Veritas	10,544	21	235	187	-1.76	
Nippon Kaiji Kyokai	31,230	39	666	583	-1.86	
American Bureau of Shipping	10,396	10	232	184	-1.88	
DNV GL AS	26,399	19	566	490	-1.92	
Lloyd's Register	13,605	7	299	245	-1.94	
Korean Register of Shipping	9,333	3	209	164	-1.95	

Recognized organization (RO)	No. of overall inspections 2014-2016	No. of RO responsible detentions 2014-2016	Low/medium Limit	Medium/high Limit	Excess factor	Performance level
RINA Services S.p.A.	2,671	0	66	41	-1.97	
China Classification Society	7,880	1	179	137	-1.98	

- Note: 1) In this table, only recognized organizations (RO) that had more than 60 inspections are taken into account. The formula used is identical to the one used for the Black-Grey-White List. However, the values for P and Q are adjusted to P=2% and Q=1%.
- 2) ROs involving 60-179 inspections with zero detention are not included in this table.

**Figure 18: COMPARISON OF NUMBER OF DEFICIENCIES BY MAIN CATEGORIES**

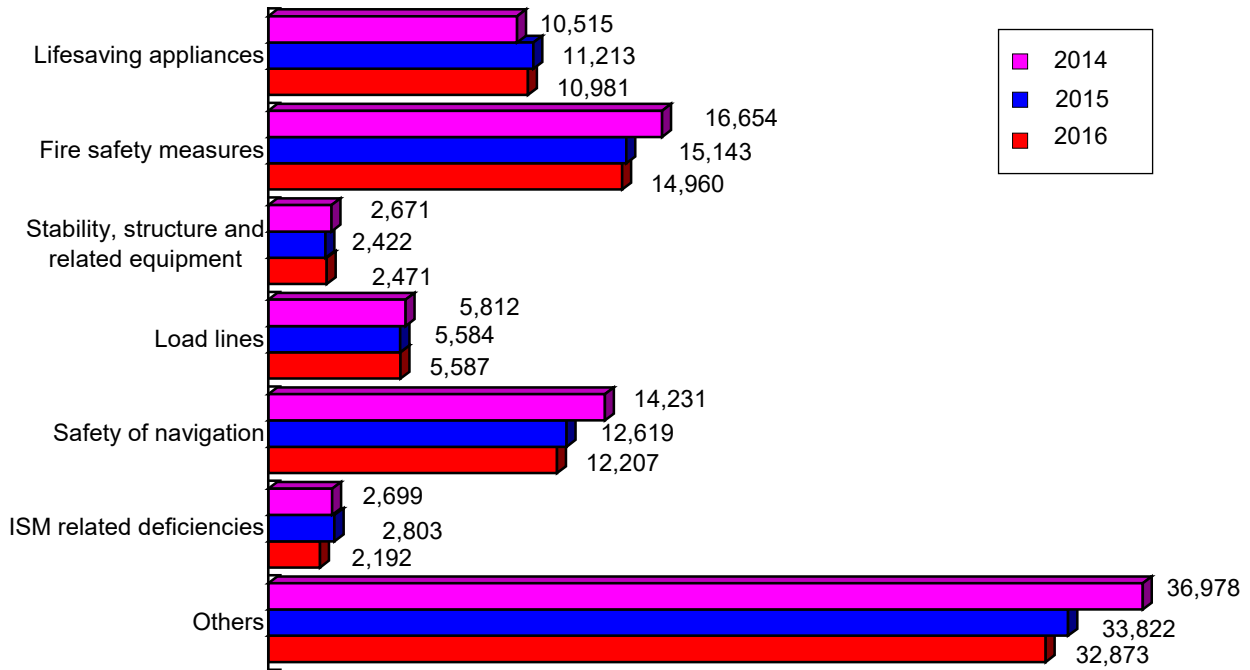
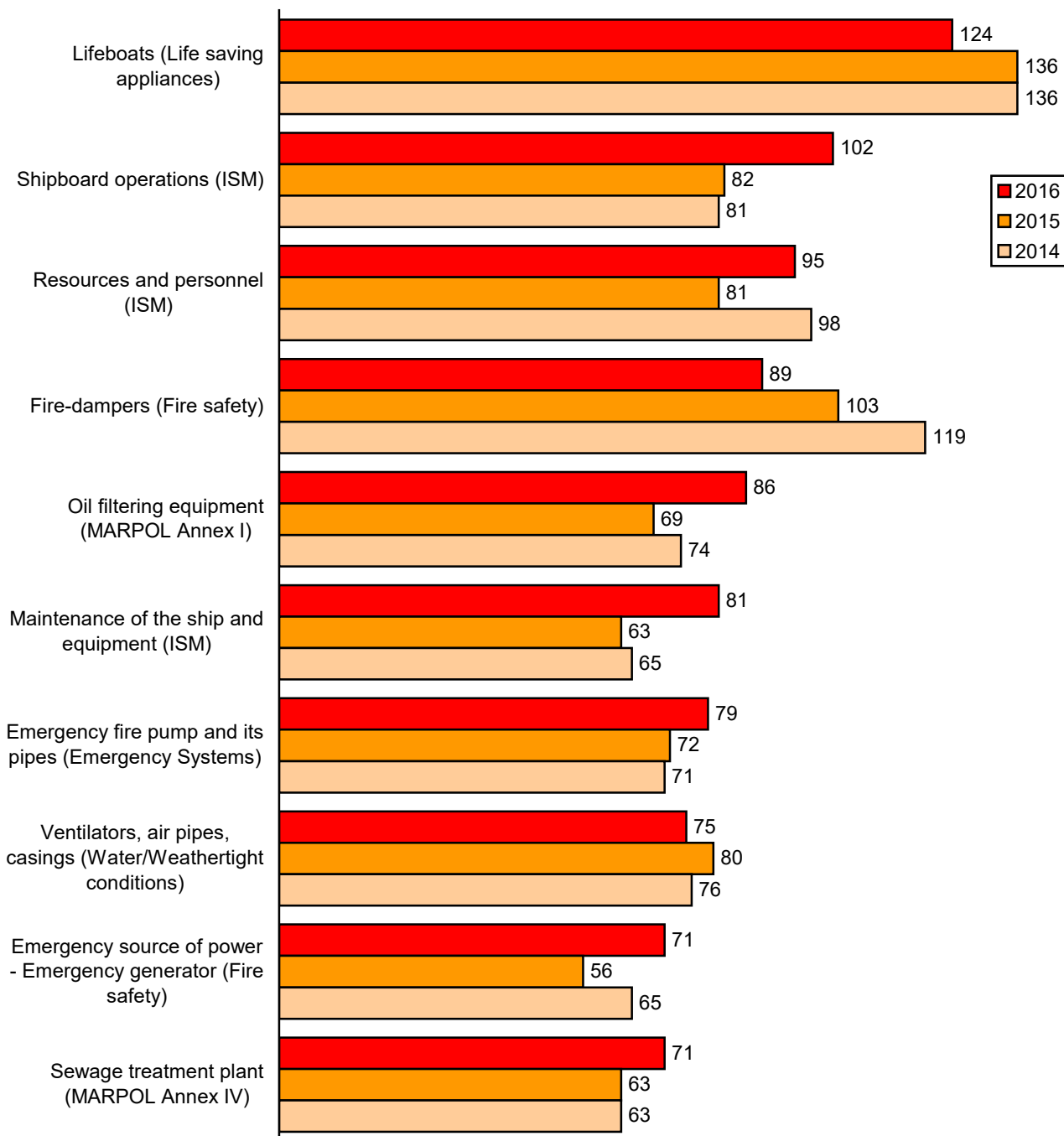


Table 14: COMPARISON OF DEFICIENCIES BY CATEGORIES

Nature of deficiency		Number of deficiencies		
		2014	2015	2016
	Crew Certificates	1,534	1,593	1,559
Certificate & Documentation	Documents	6,416	4,500	4,290
	Ship Certificates	2,445	1,910	1,874
	Structural Conditions	2,671	2,422	2,471
Water/Weathertight conditions		5,812	5,584	5,587
Emergency Systems		5,093	5,771	5,011
Radio Communications		2,259	2,231	2,062
Cargo operations including equipment		613	500	1,382
Fire safety		16,654	15,143	14,960
Alarms		634	577	573
Safety of Navigation		14,231	12,619	12,207
Life saving appliances		10,515	11,213	10,981
Dangerous goods		183	352	287
Propulsion and auxiliary machinery		4,549	4,137	3,817
Working and Living Conditions	Living Conditions	529	349	403
	Working Conditions	4,134	2,866	2,501
Labour Conditions	Minimum requirements for seafarers	74	35	38
	Conditions of employment	363	515	483
	Accommodation, recreational facilities, food and catering	1,017	998	1,025
	Health protection, medical care, social security	983	1,699	2,172
Pollution prevention	Anti Fouling	7	13	7
	MARPOL Annex I	1,679	1,607	1,609
	MARPOL Annex II	13	17	25
	MARPOL Annex III	33	30	12
	MARPOL Annex IV	1,199	1,301	1,199
	MARPOL Annex V	1,587	1,252	1,162
	MARPOL Annex VI	758	847	845
ISM		2,699	2,803	2,192
Other		876	722	537
<b>Total</b>		<b>89,560</b>	<b>83,606</b>	<b>81,271</b>
ISPS		1,615	1,389	1,624
<b>Grand total</b>		<b>91,175</b>	<b>84,995</b>	<b>82,895</b>

**Figure 19: COMPARISON OF MOST FREQUENT DETAINABLE DEFICIENCIES**



**Table 15: COMPARISON OF MOST FREQUENT DETAINABLE DEFICIENCIES**

No.	Most frequent deficiencies	Year		
		2014	2015	2016
1	Lifeboats (Life saving appliances)	136	136	124
2	Shipboard operations (ISM)	81	82	102
3	Resources and personnel (ISM)	98	81	95
4	Fire-dampers (Fire safety)	119	103	89
5	Oil filtering equipment (MARPOL Annex I)	74	69	86
6	Maintenance of the ship and equipment (ISM)	65	63	81
7	Emergency fire pump and its pipes (Emergency Systems)	71	72	79
8	Ventilators, air pipes, casings (Water/Weathertight conditions)	76	80	75
9	Emergency source of power - Emergency generator (Fire safety)	65	56	71
10	Sewage treatment plant (MARPOL Annex IV)	63	63	71



Table 16: LIST OF UNDER-PERFORMING SHIPS

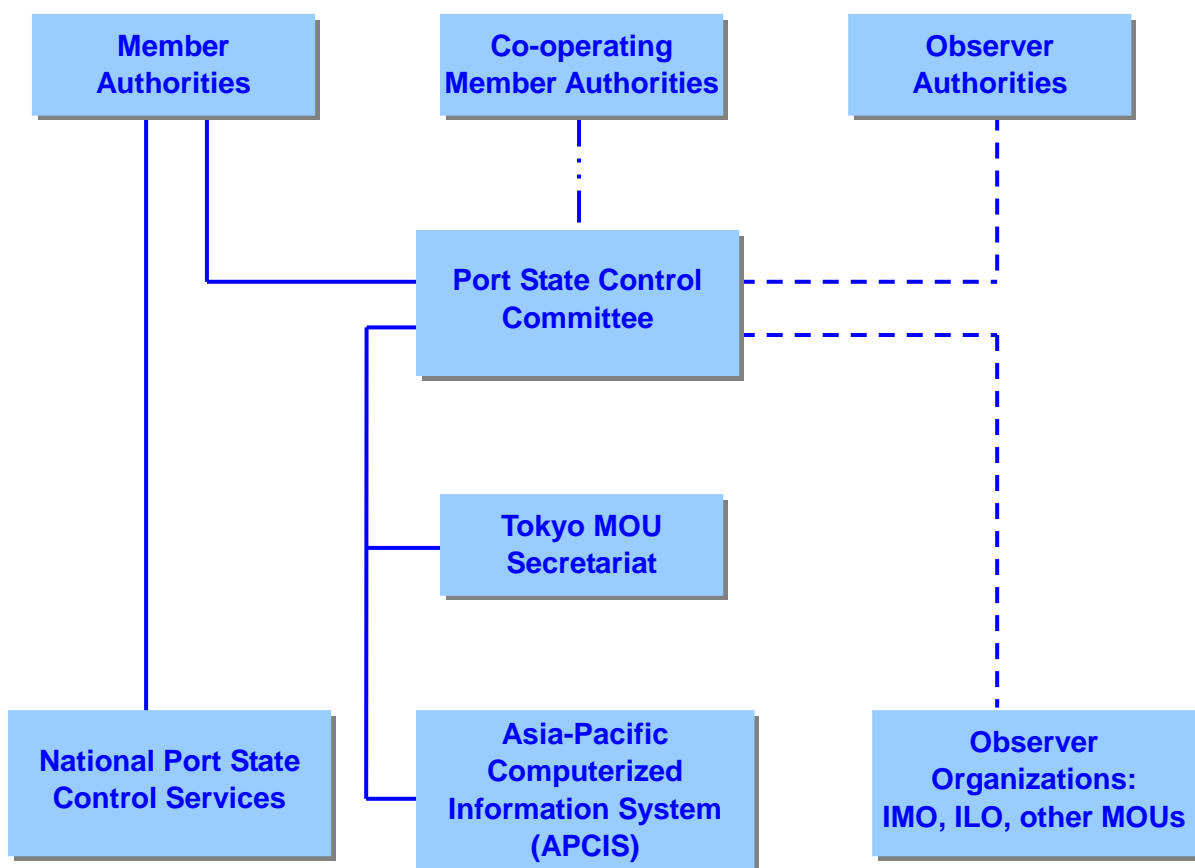
IMO No.	Ship name (at the day of detention)	Flag	IMO company No.	No. of times on the list
7610050	ALFA	Togo	5412362	4
7702516	GARNET	Panama	4145002	2
8028802	FAST	Togo	5584840	5
8412467	SOUTH HILL 2	Sierra Leone	5678925	3
8426913 <sup>1</sup>	HAI TONG DA	Cambodia	5205137	1
8426913 <sup>1</sup>	HAI TONG DA	Tanzania	5205137	1
8510128 <sup>1</sup>	SHUN FA 19	Cambodia	5724783	3
8510128 <sup>1</sup>	SHUN FA 19	Togo	5724783	3
8604371	HOLY FAIRY	Cambodia	5803464	1
8631491 <sup>1</sup>	UNION FORTUNE	Cambodia	5272256	4
8631491 <sup>1</sup>	UNION FORTUNE	Micronesia, Federated States of	5276293	4
8661290	CHUN YANG 8	Sierra Leone	5437101	2
8706806 <sup>1</sup>	HONG HAI	Cambodia	5173144	9
8706806 <sup>1</sup>	LAN HAI	Togo	5173144	9
8718483	TRAWIND GLORY	Sierra Leone	5640161	1
8742240	AN QUAN ZHOU 66	Panama	5685808	7
8743749	YONG JUN 17	Sierra Leone	5534834	1
8808044	WANDA 8	Cambodia	5801971	1
8819691 <sup>1</sup>	QIAN YUAN	Cambodia	5678324	5
8819691 <sup>1</sup>	QIAN YUAN	Micronesia, Federated States of	5678324	5
8839770	YU LING	Panama	1867053	4
8858996 <sup>2</sup>	BAI HONG	Cambodia	5680811	5
8858996 <sup>2</sup>	DOREEN	Micronesia, Federated States of	5598407	5
8859392 <sup>2</sup>	DONG XING 6	Cambodia	5598150	1
8859392 <sup>2</sup>	DONG XING 6	Sierra Leone	5908703	1
8907254	RYOFU	Mongolia	5519245	2
8911035	LONG GANG9	Cambodia	5838827	3
9020091	HUI FENG 88	Cambodia	5840672	2
9036882 <sup>1</sup>	ORIENT SUNSHINE	Cambodia	5290972	10
9036882 <sup>1</sup>	ORIENT SUNSHINE	Togo	5290972	10
9092214 <sup>1</sup>	MAO XIN	Cambodia	5280211	9
9092214 <sup>1</sup>	WINNIE	Sierra Leone	5280211	9
9092214 <sup>1</sup>	WINNIE	Tanzania	5280211	9
9140190 <sup>1</sup>	SKY HARMONY	Cambodia	5468010	4
9140190 <sup>1</sup>	SKY HARMONY	Micronesia, Federated States of	5468010	4

<b>IMO No.</b>	<b>Ship name (at the day of detention)</b>	<b>Flag</b>	<b>IMO company No.</b>	<b>No. of times on the list</b>
<b>9168506</b>	KEN CAPE	Liberia	1099106	7
<b>9357054</b>	RICH SHINING	Cambodia	5775749	8
<b>9373802<sup>2</sup></b>	TAI RONG 16	Cambodia	5866793	7
<b>9373802<sup>2</sup></b>	TAI RONG 16	Micronesia, Federated States of	5912935	7
<b>9378424</b>	ANDA NO. 66	Panama	5678236	1
<b>9517020<sup>1</sup></b>	YUN SHENG	Cambodia	5507636	2
<b>9517020<sup>1</sup></b>	YUN SHENG	Panama	5507636	2
<b>9528952<sup>3</sup></b>	HE XIE 6	Niue	5728980	3
<b>9528952<sup>3</sup></b>	HE XIE 6	Niue	5876741	3
<b>9528952<sup>3</sup></b>	HE XIE 6	Niue	4138796	3
<b>9538490</b>	HIGH RICH	Belize	5827147	2

1. The ship changed flag.
2. The ship changed company and flag.
3. The ship changed company.

### ANNEX 3

## ORGANIZATIONAL STRUCTURE OF THE TOKYO MOU



## EXPLANATORY NOTE ON THE BLACK – GREY – WHITE LISTS

The Port State Control Committee adopted the same method as used by the Paris MOU for assessment of performance of flags. Compared to the calculation method of previous year, this system has the advantage of providing an excess percentage that is significant and also reviewing the number of inspections and detentions over a 3-year period at the same time, based on binomial calculus.

The performance of each flag State is calculated using a standard formula for statistical calculations in which certain values have been fixed in accordance with the agreement of the Port State Control Committee. Two limits have been included in the new system, the 'black to grey' and the 'grey to white' limit, each with its own specific formula:

$$u_{black - to - grey} = N \cdot p + 0.5 + z \cdot \sqrt{N \cdot p \cdot (1 - p)}$$

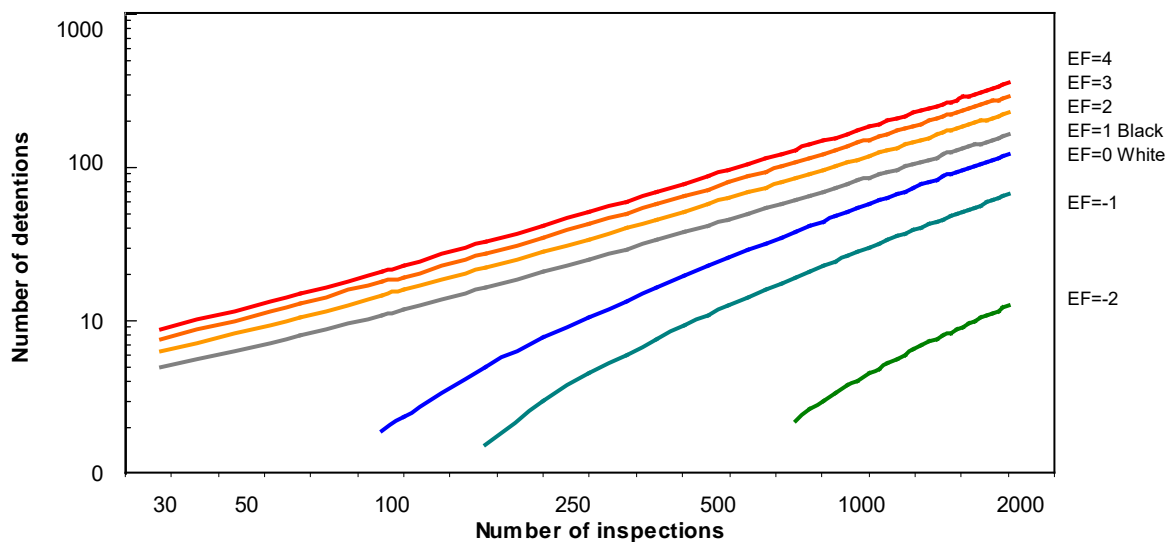
$$u_{white - to - grey} = N \cdot p - 0.5 - z \cdot \sqrt{N \cdot p \cdot (1 - p)}$$

In the formula "N" is the number of inspections, "p" is the allowable detention limit (yardstick), set to 7% by the Tokyo MOU Port State Control Committee, and "z" is the significance requested (z=1.645 for a statistically acceptable certainty level of 95%). The result "u" is the allowed number of detentions for either the black or white list. The "u" results can be found in the table as the 'black to grey' or the 'grey to white' limit. A number of detentions above this 'black to grey' limit means significantly worse than average, where a number of detentions below the

'grey to white' limit means significantly better than average. When the amount of detentions for a particular flag State is positioned between the two, the flag State will find itself on the grey list. The formula is applicable for sample sizes of 30 or more inspections over a 3-year period.

To sort results on the black or white list, simply alter the target and repeat the calculation. Flags which are still significantly above this second target are worse than the flags which are not. This process can be repeated, to create as many refinements as desired. (Of course the maximum detention rate remains 100%!) To make the flags' performance comparable, the excess factor (EF) is introduced. Each incremental or decremental step corresponds with one whole EF-point of difference. Thus the excess factor EF is an indication for the number of times the yardstick has to be altered and recalculated. Once the excess factor is determined for all flags, the flags can be ordered by EF. The excess factor can be found in the last column the black, grey or white list. The target (yardstick) has been set on 7% and the size of the increment and decrement on 3%. The Black – Grey – White lists have been calculated in accordance with the above principles.

The graphical representation of the system, below, is showing the direct relations between the number of inspected ships and the number of detentions. Both axis have a logarithmic character.



## TOKYO MOU SECRETARIAT

The Secretariat (Tokyo MOU Secretariat) of the Memorandum of Understanding on Port State Control in the Asia-Pacific Region is located in Tokyo, Japan. The Secretariat may be approached for further information or inquiries on the operation of the Memorandum.

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Fumiko Akimoto  
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