

June 2019

ClassNK

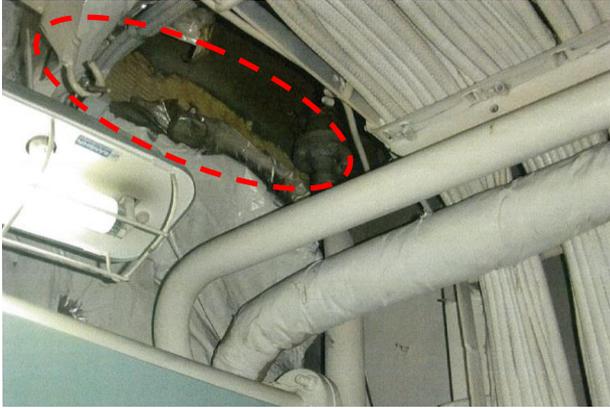
Port State Control Annual Report

[English]



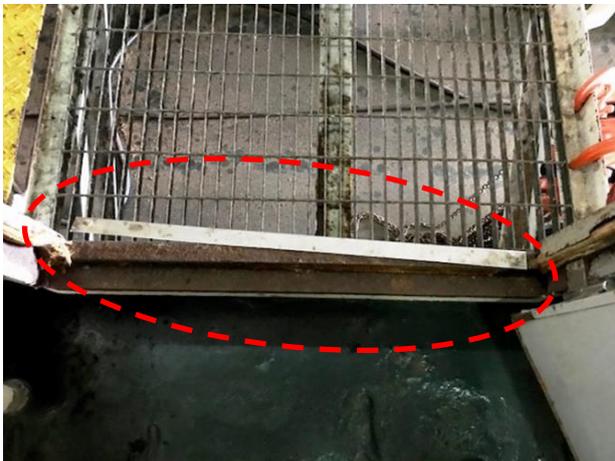
**Photographs of Deficiencies identified during
Port State Control**

Fire Safety



Detached insulation

Wasted fire door and frame



Detached fire door frame

Detached fire door packing



Fire Safety



Damaged fire hydrant

Fire hose joint leaking



Fractured escape trunk bottom

Corroded CO₂ line



Life Saving Appliances



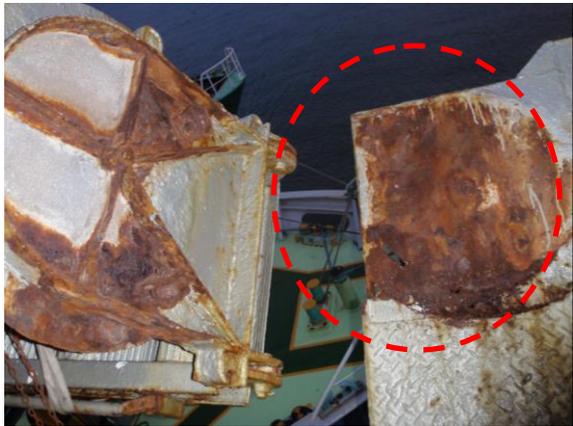
Hatch not tightly closed

Non color coded seat belts



Weak link not fitted

Wasted pilot ladder



Load Line



Holed mushroom ventilator →

← **Holed air pipe head**

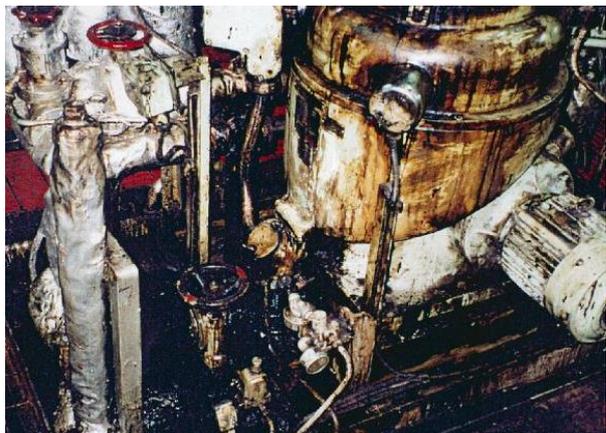


Machinery Space



← **Secured quick closing valve**

Oily and dirty machineries →



MARPOL



Oil contamination in overboard discharge line

Oily corelessor



Holed oil coming

Excessive garbage

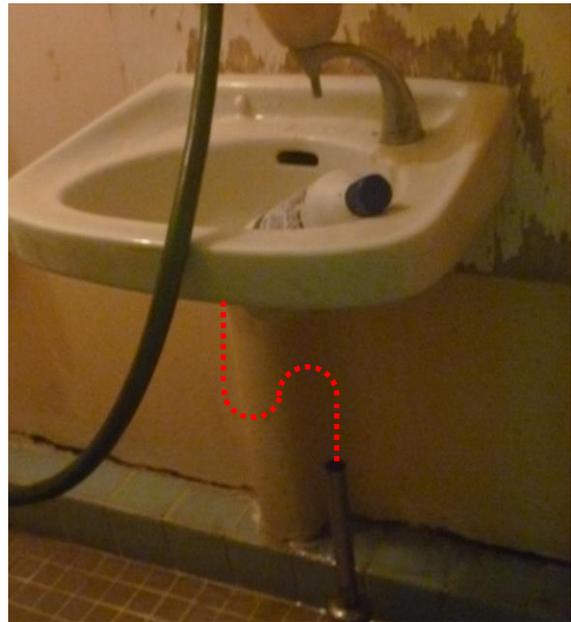


Others



Broken mooring rope

Missed sink pipe



Wasted catwalk

Broken illumination



Foreword

This Annual Report on Port State Control (PSC) summarizes deficiencies identified during PSC inspections carried out in various countries around the world. This report is prepared with the objective of building awareness with the present state of PSC and thereby improving future onboard maintenance and inspections, and as well as Safety Management System.

The report consists of the following Chapters.

“**Chapter 1**”: Status of Implementation and Recent Developments in PSC Worldwide

“**Chapter 2**”: Statistical Analysis of Detained Ships Registered with ClassNK

“**Chapter 3**”: Statistical Analysis of NK SMC Ships Detained by PSC (ISM Code)

“**Chapter 4**”: Statistical Analysis of NK MLC Ships Detained by PSC (MLC, 2006)

“**Chapter 5**”: Statistical Data from Tokyo MOU, Paris MoU and USCG

Port State Control has been recognized to be a very direct and effective means to reduce the number of substandard ships as well as to improve safety of ships at sea and to prevent marine pollution. The activity of PSC worldwide has significantly been strengthened along with the increasing number of amendments to the relevant international Conventions.

Further to the above, in order to carry out the effective implementation of port state responsibilities, many countries have signed a Memorandum of Understanding (MOU) for regional cooperation between local PSCs, and have agreed to establish a centralized digitized database system and/or a harmonized approach.

The scope of PSC inspection has been extended from the hardware aspect of the ship to the software aspect such as onboard maintenance or operational procedures ever since the ISM Code was adopted and applied to all ships and is still expanding as more new concept of regulations has been introduced by the adoption of Noise Code, POLAR Code, Ballast Water Management Convention, The Manila amendments to the STCW Convention, etc.

In line with the above progress of PSC, ClassNK has been working hard and will work harder to increase the transparency of information related to PSC and to eliminate substandard vessels.

June 2019

Note: Every effort has been made to ensure the accuracy of the information presented in this report. However, as information is collected from a variety of sources, ClassNK cannot be held responsible for any erroneous data, judgements or conclusions that may appear in this report, in cases where the information available should prove to have been incomplete or incorrect in any respect.

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Chapter 1

Status of Implementation and Recent Developments in PSC Worldwide

1.1 Amendments to the relevant conventions

Major amendments to international conventions and to the relevant regulations that came into effect from 2016 through 2018 are summarized as below.

1.1.1 Amended requirements for sludge discharging piping and bilge-water piping (Regulation 12 of MARPOL Annex I)

Entry into force: 1 January 2017

[Refer to ClassNK Technical Information TEC-1080]

Regulation 12 of MARPOL Annex I was amended and due to this amendment, it is required that the connections between the sludge discharge piping / the bilge-water piping and common piping leading to the standard discharge connection are not to allow for the transfer of sludge to bilge system prior to the following implementation deadline.

Application:

- 1) Ships constructed (keel-laid) on or after 1 January 2017: The date of delivery
- 2) Ships constructed before 1 January 2017: The first IOPP renewal survey on or after 1 January 2017

1.1.2 An entry-into-force of an international code for ships operating in polar waters (POLAR Code)

Entry into force: 1 January 2017

[Refer to ClassNK Technical Information TEC-1096]

The POLAR Code is applied to the ships operating in the Arctic and Antarctic Oceans on or after 1 January 2017.

	Part I Safety measures	Part II Pollution prevention measures
New ships	Ships constructed on or after 1 January 2017	On or after 1 January 2017
Existing ships	Not later than the first intermediate or renewal survey, whichever occurs first, after 1 January 2018	On or after 1 January 2017

1.1.3 Inspection and certification relating to the entry into force of the 2014 Amendments to the MLC, 2006 on 18th January 2017

Entry into force: 18 January 2017

[Refer to ClassNK Technical Information TEC-1098 & 1142]

Ships flying flag of the member States are required to carry the certificates or other documentary evidence of financial security complying with the requirements of the amendments on board by 18 January 2017. In addition, the DMLC Part II need to be revised by the ship owner associating with issuance of the revised DMLC Part I issued by the flag State administration and subsequently shipboard verification of its implementation is also required by the initial inspection, the first intermediate inspection or the first renewal inspection whichever period is earlier after 18 January 2017.

1.1.4 An entry-into-force of the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention)

Entry into force: 8 September 2017

[Refer to ClassNK Technical Information TEC-1085, 1086, 1113, 1116]

On or after the following implementation deadline for Ballast Water Management Systems (BWMS) according to IMO Res. A. 1088(28) and MEPC 71, ships are required to conduct ballast water exchange through BWMS. On or after 8 September 2017 and prior to the following implementation deadline for BWMS, ships are required to conduct ballast water exchange offshore according to a ballast water management plan or ballast water exchange through BWMS.

Keel laid	Target vessel	Deadline for the BWMS installation
Before 8 September 2017	Vessels which do not have IOPP Certificate	By 8 September 2024
	Vessels completed IOPP renewal survey on or after 8 September 2014 but prior to 7 September 2017	By the completion date of first renewal survey associated with the IOPP Certificate on or after 8 September 2017
	Vessels other than the above	By the completion date of the second renewal survey associated with the IOPP Certificate on or after 8 September 2017 or the renewal survey associated with the IOPP Certificate on or after 8 September 2019, whichever comes first
On or after 8 September 2017	All vessels	By the completion date of the construction

1.1.5 Revised for Form of Garbage Record Book

Entry into force: 1 March 2018

[Refer to ClassNK Technical Information TEC-1135]

Amended form of Garbage Record book including amendment of garbage category for the purpose of recording is required to be provided on board on or after 1 March 2018.

1.1.6 Data collection system for fuel oil consumption of ships

Entry into force: 1 March 2018

[Refer to ClassNK Technical Information TEC-1139]

Data collection for fuel oil consumption and relevant is required on or after 1 January 2019. Collected data is to be reported to the Administration or RO after the end of each calendar year, and Statement of Compliance is to be provided on board. In addition, SEEMP Part II specified the Ship Fuel Oil Consumption Data Collection Plan (DCP) which includes a description of the methodology for data collecting and the reporting processes is to be approved, and Confirmation of Compliance is to be provided on board by the following date.

- (1) Ships for which the delivery is placed on or after 1 March 2018: The date of delivery
- (2) Ships other than above (1): 31 December 2018

1.1.7 EU Regulation on Ship Recycling

Entry into force: 31 March 2018

[Refer to ClassNK Technical Information TEC-1170]

Development of inventory of hazardous materials (IHM) is required for EU flagged ships and non-EU flagged ships by the following date. In addition, ship owners have to ensure that EU flagged ships to be recycled only at the recycling facilities included in the EU List, which list ship recycling facilities authorized in accordance with the Regulation.

- (1) EU flagged new ships: The date of delivery
- (2) EU flagged existing ships: 31 December 2020 (If a ship is to be recycled before 31 December 2020, IHM shall be prepared prior to recycling)
- (3) Non-EU flagged ships: 31 December 2020

New amendments to conventions are also introduced on the ClassNK Website in the section, 'IMO International Convention Calendar'.
[\(http://www.classnk.or.jp/hp/en/imo_conv_schedule/\)](http://www.classnk.or.jp/hp/en/imo_conv_schedule/)

1.2 Recent global developments

1.2.1 MOUs around the world

In order to carry out PSC effectively, a recommendation concerning regional co-operation in the control of ships and discharges was adopted as a resolution by the IMO. In July 1982, fourteen European countries signed the Paris Memorandum of Understanding on Port State Control (Paris MoU), and today many countries have signed and accepted similar MOUs around the world. Currently, nine MOUs exist around the world and their respective activities in terms of implementing PSC are described below.

<i>European and North Atlantic region</i>	: Paris MoU	(http://www.parismou.org/)
<i>Asia-Pacific region</i>	: Tokyo MOU	(http://www.tokyo-mou.org/)
<i>Latin American region</i>	: Latin American Agreement	(http://www.acuerdolatino.int.ar/)
<i>Caribbean region</i>	: Caribbean MOU	(http://caribbeanmou.org/)
<i>Mediterranean region</i>	: Mediterranean MoU	(http://www.medmou.org/)
<i>Indian Ocean region</i>	: Indian Ocean MOU	(http://www.iomou.org/)
<i>Black Sea region</i>	: Black Sea MOU	(http://www.bsmou.org/)
<i>West and Central Africa region</i>	: Abuja MoU	(http://www.abujamou.org/)
<i>Arab States of the Gulf</i>	: Riyadh MoU	(http://www.riyadh-mou.org/)

(1) European and North Atlantic region (Paris MoU)

Established: 1 July 1982

Members: Belgium, Bulgaria, Canada, Croatia, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Latvia, Lithuania, Malta, the Netherlands, Norway, Poland, Portugal, Romania, the Russian Federation, Slovenia, Spain, Sweden, and the United Kingdom

-1. The Paris MoU consists of 27 participating maritime Administrations and covers the waters of the European coastal States and the North Atlantic basin from North America to Europe. The Paris MoU states that their aim is to eliminate the operation of sub-standard ships through a harmonized system of PSC.

-2. Press releases have announced the recent activities of the Paris MoU as follows.

Press release dated 22 May 2019

- The Paris MoU announced that the Paris MoU held its 52th Committee meeting in Russia through 13 to 17 May 2019. Committee approved the questionnaire for the CIC on Emergency Systems and Procedures to be carried out from September to November 2019. The questionnaire will be published in August 2019.

Press release dated 17 June 2019

- The Paris MoU announced new performance lists for flag and Recognized Organizations. These lists will take effect from 1 July 2019.

(2) Asia-Pacific region (Tokyo MOU)

Established: 1 December 1993

Members: Australia, Canada, Chile, China, Fiji, Hong Kong, Indonesia, Japan, Republic of Korea, Malaysia, the Marshall Islands, New Zealand, Papua New Guinea, Peru, the Philippines, the Russian Federation, Singapore, Thailand, Vanuatu, and Viet Nam

- 1. The main objectives of the Memorandum have been announced
1. to establish an effective Port State Control regime in the Asia-Pacific region through the co-operation of its members and the harmonization of their activities,
 2. to eliminate substandard shipping so as to promote maritime safety,
 3. to protect the marine environment, and
 4. to safeguard working and living conditions onboard ships.

- 2. Press releases announced the activities of the Tokyo MOU as follows:

Press release dated 12 November 2018

- The Tokyo MOU announced that the 29th meeting of the PSC Committee of the Tokyo MOU was held in Hangzhou, China through 5 to 8 November 2018.
- The Committee unanimously agreed to accept Mexico as a co-operating member Authority, and the Abuja MOU as an observer of the Tokyo MOU.
- The Committee decided to conduct the CIC on Emergency Systems and Procedures in 2019. By the agreement with the Paris MOU, the Committee confirmed to carry out a joint CIC on Stability in General in 2020.
- The 30th meeting of the PSC Committee will be held in Marshall Islands in October 2019.

Press release dated 1 March 2019

- The Tokyo MOU announced the preliminary results of the Concentrated Inspection Campaign (CIC) on MARPOL Annex VI, which was conducted from 1 September to 30 November 2018.
- During the course of the campaign Authorities carried out a total of 6,604 inspections of target ships. Of this quantity, 4 ships were detained as a result of deficiencies found during the CIC.

(3) Latin-American region (Latin American Agreement)

Established: 5 November 1992

Members: Argentina, Bolivia, Brazil, Chile, Colombia, Cuba, Ecuador, Guatemala, Honduras, Mexico, Panama, Peru, Republic of Dominica, Uruguay, and Venezuela

- 1. According to Annual Report 2018 of the Latin American Agreement, a total of 7,877 inspections were carried out and 62 vessels were detained in 2018.

(4) Caribbean region (Caribbean MOU)

Established: 9 February 1996

Members: Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Cayman Islands, Cuba, Curacao, France, Grenada, Guyana, Jamaica, the Netherlands, St. Kitts and Nevis, St. Vincent and the Grenadines, Suriname, and Trinidad and Tobago

(5) Mediterranean region (Mediterranean MoU)

Established: 11 July 1997

Members: Algeria, Cyprus, Egypt, Israel, Jordan, Lebanon, Malta, Morocco, Tunisia, and Turkey

(6) Indian Ocean region (Indian Ocean MOU)

Established: 5 June 1998

Members: Australia, Bangladesh, Comoros, Eritrea, France (La Reunion), India, Iran, Kenya, Maldives, Mauritius, Mozambique, South Africa, Sri Lanka, Sudan, Sultanate of Oman, Tanzania, and Yemen

- 1. According to Annual Report 2018 of the Indian Ocean MOU, a total of 5,697 inspections were carried out and 252 vessels were detained in 2018.
- 2. The Indian Ocean MOU announced the preliminary results of the Concentrated Inspection Campaign (CIC) on MARPOL Annex VI, which was conducted from 1 September to 30 November 2018. During the course of the campaign Authorities carried out a total of 1,007 inspections of target ships. Of this quantity, 1 ship was detained as a result of deficiencies found during the CIC.
- 3. CIC on Emergency System is scheduled to be carried out in 2019.

(7) Black Sea region (Black Sea MOU)

Established: 7 April 2000

Members: Bulgaria, Georgia, Romania, the Russian Federation, Turkey, and Ukraine

- 1. According to Annual Report 2018 of the Black Sea MOU, a total of 5,214 inspections were carried out and 278 vessels were detained in 2018.
- 2. The Black Sea MOU announced the results of the Concentrated Inspection Campaign (CIC) on MARPOL Annex VI, which was conducted from 1 September to 30 November 2018. During the course of the campaign Authorities carried out a total of 781 inspections of target ships. Of this quantity, 55 ships were detained as a result of deficiencies found during the CIC.
- 3. CIC on Emergency System and Procedures is scheduled to be carried out in 2019.

(8) West and Central Africa region (Abuja MoU)

Established: 22 October 1999

Members: Angola, Benin, Cape Verde, Republic of Congo, Cote D'Ivoire, Gabon, The Gambia, Ghana, Republic of Guinea, Guinea Bissau, Nigeria, Sao Tome and Principe, Senegal, Sierra Leone, South Africa, and Togo

- 1. According to Annual Report 2018 of the Abuja MoU, a total of 2,409 inspections were carried out and 14 vessels were detained in 2018.
- 2. The Abuja MOU announced the results of the Concentrated Inspection Campaign (CIC) on Life Saving Appliances, which was conducted from 1 September to 30 November 2018. During the course of the campaign Authorities carried out a total of 611 inspections of target ships. Of this quantity, no ship was detained as a result of deficiencies found during the CIC.

(9) Arab States of the Gulf (Riyadh MoU)

Established: 30 June 2004

Members: Kingdom of Bahrain, Kingdom of Saudi Arabia, State of Kuwait, State of Qatar, State of United Arab Emirates, and Sultanate of Oman

1.2.2 Port State Control in the United States (USCG)

(1) Activity

Although the United States Coast Guard (USCG) is not a member of any MOU, it is an observer at a number of MOUs, and undertakes effective PSC in cooperation with other MOUs.

(2) PSC Safety Targeting Matrix

The USCG uses the Port State Control Safety and Environmental Protection Compliance Targeting Matrix which enables the Coast Guard to rationally and systematically determine the probable risk posed by non-U.S. ships calling at U.S. ports. The matrix is used to decide which ships Port State Control Officers should examine on any given day, in any given port. The numerical score, along with other performance based factors, determines a ship's priority for examination.

(Reference: <http://www.uscg.mil>)

(3) Banning of foreign vessels

All foreign flagged vessels operating in U.S. waters are required to be maintained in compliance with U.S. regulations, international conventions and other required standards. However, when a vessel has been repeatedly detained by the USCG (totaling three detentions within a twelve month period) and it is determined that failure to effectively implement the SMS onboard may be a contributing factor for the substandard conditions that led to the detentions, the USCG Headquarters (USCG-HQ) will issue a Letter of Denial prohibiting the ship from further entering any U.S. port until such time as certain actions have been taken to rectify the situation. However, even if a vessel has less than three detentions in twelve months, a Letter of Denial may be issued to any vessel which, in the option of the USCG;

1. may pose a significant risk to the safety of the vessel, crew or the marine environment; or
2. has a history of accidents, pollution incidents, or serious repair problems which creates reason to believe that such a vessel may be unsafe or create a threat to the marine environment; or
3. has discharged oil or other hazardous material in violation of any law of the United States or in a manner or quantities inconsistent with the provisions of any treaty to which the United States is a party.

1.3 Measures adopted by ClassNK

1.3.1 Handling of the Deficiencies Identified by PSC Inspections

(1) Cooperative assistance with PSC and treatment of deficiencies

When surveyors of the Society are notified of the detention of a ship classed with ClassNK, the Society actively co-operates with the reporting PSC in a number of ways. The more direct of these steps include the following.

- Surveyors liaise with PSC to ensure that they are called in as soon as appropriate when deficiencies related to class and/or statutory matters are identified.
- Surveyors liaise with PSC officers to ensure uniformity of interpretation of class and statutory requirements.
- Surveyors provide PSC officers with background information, extracts from reports pertinent to the inspection, and details of outstanding recommendations of class and statutory items whenever so requested by the PSC.
- Attending surveyors examine not only the condition of the deficiencies identified by the PSC officers but also expand the scope of the survey for the general condition of the hull, machinery and equipment, or carry out the general examination to the extent of an annual survey if necessary, carefully considering the seriousness of any deficiencies when they attend ships that have been subject to an intervention action by the PSC.

(2) Treatment of inspection reports by PSC officers

When a surveyor receives an inspection report from PSC, the report is sent to the ClassNK Head Office. The report is immediately examined by the experienced staff to identify the causes of the deficiencies. This examination is carried out for all ships for which such reports are received, and the results are circulated to all sections concerned, as necessary. The results are also reflected in a ClassNK PSC database that has been developed for the purpose of providing surveyors with PSC related information electronically. The results of this examination are also submitted to the Flag State Administration of the ship, as required. Further, visits may also be made to the management company or others, when deemed appropriate, to advise them of the relevant deficiencies noted and to encourage them to more proactively improve the routine maintenance of their ships and take other measures as necessary to ensure the highest levels of safe and environmentally friendly operation. In cases where the deficiencies pointed out by the PSC are determined to be related to previous surveys conducted by surveyors of the Society, those surveys are treated as a non-conforming service, and appropriate corrective and preventive actions are taken in accordance with the ClassNK quality system.

1.3.2 Minimizing the number of detained ships in order to reduce substandard ships

(1) Special training at several in-house meetings

Special training on PSC related issues is conducted at several meetings held regularly for general managers and managers, to ensure that surveyors carry out full and effective surveys with an uncompromising attitude towards ensuring the quality and safety of the ships classed with the Society.

Special re-training is also carried out under the supervision of the Head Office and regional managers, as needed, for those surveyors who have conducted any surveys determined to be a non-conforming service under the quality system of the Society.

(2) Meetings and informal gatherings with management companies

(a) Visiting Management Companies

When a ship classed with ClassNK is detained by PSC, if deemed necessary, a senior surveyor or manager of the Society visits the company managing the ship to discuss what steps can be taken to improve the routine maintenance of the ships in their fleet, so as to prevent both a recurrence of the deficiencies noted and the occurrence of similar problems in the future.

(b) Meetings and seminars

PSC related issues are regularly discussed at informal gatherings and technical committee meetings held with management companies. At such times, explanations are given and documents presented, with emphasis placed on the importance of proactively ensuring the proper maintenance of ships and education of crew in order to prevent the detention of ships.

(c) Software

Mobile application “ARRIVAL CHECKLIST for PSC” and software “PrimeShip-PSC intelligence” have been prepared in order to support an improvement of PSC performance and ship management system.

i) ARRIVAL CHECKLIST for PSC (http://www.classnk.or.jp/hp/en/info_service/psc/)

It is the preparatory checklist mobile app to help minimize the risk of PSC detentions and deficiencies.

[Main Functions]

- The items frequently pointed out by PSCO can be checked in each area onboard
- Check results can be input the system along with notes and photos
- Check results can be forwarded to company easily
- The statistics and tendency of detentions in major ports can be confirmed
- Checklists and statistics are updated automatically as needed

ii) PrimeShip-PSC intelligence (<http://www.classnk.or.jp/hp/en/activities/portal/psc-intelligence.html>)

This system provides users with various functions to help improve fleet PSC performance and ship management systems.

[Main Functions]

- Easy visual checking of a trend in the number of detentions and deficiencies at each port or country on world-map with frequent deficiency examples
- Output 1) PSC checklists for each port or country based on the trend and 2) a summary report for PSC performance of managing ships
- Analysis on the trend of deficiencies recorded on managing ships on a real-time basis through the managing company's input of PSC reports
- Easy registration for ships using a data link with NK-SHIPS

(d) Publications

The "ClassNK Annual Report on Port State Control" and a checklist entitled "Good Maintenance on board Ships which can be used by the ship's crew for quick and easy inspection of a ship before entering port are distributed to all registered management companies or others in the ClassNK fleet and also posted on NK website as below.

(http://www.classnk.or.jp/hp/en/info_service/psc/)

"Monthly PSC Information", which indicates the cases of PSC inspection including detainable deficiency or ISM related deficiency, was also posted on the same page, however, as of 1 April 2019, all monthly PSC information downloads have been no longer available. Beginning on 1 April 2019, past and current monthly PSC information can be downloaded from "PrimeShip-PSC Intelligence".

Eighteen "ClassNK PSC Bulletin" were sent to Company managed ClassNK fleet as of June 2019 by e-mail. This bulletin provides timely information on particularly notable deficiencies pointed out during PSC inspections of NK classed ships, and will be continuously served to management companies.

1.3.3 Visits to PSC authorities

Deginated persons from the ClassNK Head Office as well as local survey offices are assigned to visit the headquarters or offices of various PSC authorities with the aim of introducing ClassNK and exchanging views on matters of mutual concern. In 2018, persons from the ClassNK Head Office visited the following PSC authorities for the above-mentioned purpose.

- | | |
|-------------|---|
| - Australia | Australian Maritime Safety Authority (AMSA) |
| - China | Maritime Safety Administration (MSA) |
| - U.S.A. | United States Coast Guard (USCG) |
| - Indonesia | The Indonesia Maritime Authority |
| - Russia | Black Sea Maritime Ports Administration |

Chapter 2

Statistical Analysis of Detained Ships Registered with ClassNK

2.1 General

The data in this chapter, on ships detained due to deficiencies identified during PSC inspections, is based on the following sources:

- (1) Notifications from Port States issued in accordance with IMO Resolution A.1052(27) “Procedure for Port State Control, and
- (2) Publications related to detained ships issued by the USCG, the Paris MoU, and the Tokyo MOU.

From January to December 2018, 384 PSC detentions were reported relating to 353 ships classed by NK. This included cases of detention for reasons not related to class or to NK itself. The total number of NK-registered ships (500 GT or over) was 8,365 at the end of December 2018. Therefore, the 383 ships detained represent about 4.5 % of the total number of ships in the NK fleet. Further, detention ratio (Detentions/Registered number in 2018) of the NK fleet in 2018 is about 4.6%.

2.2 Data on Detentions

2.2.1 Detentions per Flag State

Table 2.2.1 Detentions per Flag State

Country	Number of Registered Ships in 2018 (500GT or over)			Number of Detentions			Detention Ratio (%) (= Detentions / Registered Number in each year)		
	2016	2017	2018	2016	2017	2018	2016	2017	2018
Panama	3,213	3,119	3,053	255	222	183	7.9	7.1	6.0
Liberia	547	564	601	37	27	33	6.8	4.8	5.5
Marshall Islands	514	576	606	39	31	31	7.6	5.4	5.1
Malta	214	210	188	18	20	16	8.4	9.5	8.5
Hong Kong, China	454	449	439	17	12	15	3.7	2.7	3.4
Singapore	750	758	707	13	12	12	1.7	1.6	1.7
Cyprus	86	82	73	10	7	11	11.6	8.5	15.1
Philippines	72	81	80	1	4	6	1.4	4.9	7.5
Viet Nam	100	90	89	5	2	5	5.0	2.2	5.6
Japan	926	952	965	3	1	4	0.3	0.1	0.4
Indonesia	177	181	205	3	2	4	1.7	1.1	2.0
Bahamas	159	157	158	6	9	3	3.8	5.7	1.9
Thailand	74	79	78	9	6	3	12.2	7.6	3.8
Cayman Islands	53	56	59	0	1	0	0.0	1.8	0.0
Turkey	79	59	58	8	6	0	10.1	10.2	0.0
Others	1,001	1,032	1,006	47	64	58	4.7	6.2	5.8
Total	8,419	8,445	8,365	471	426	384	5.6	5.0	4.6

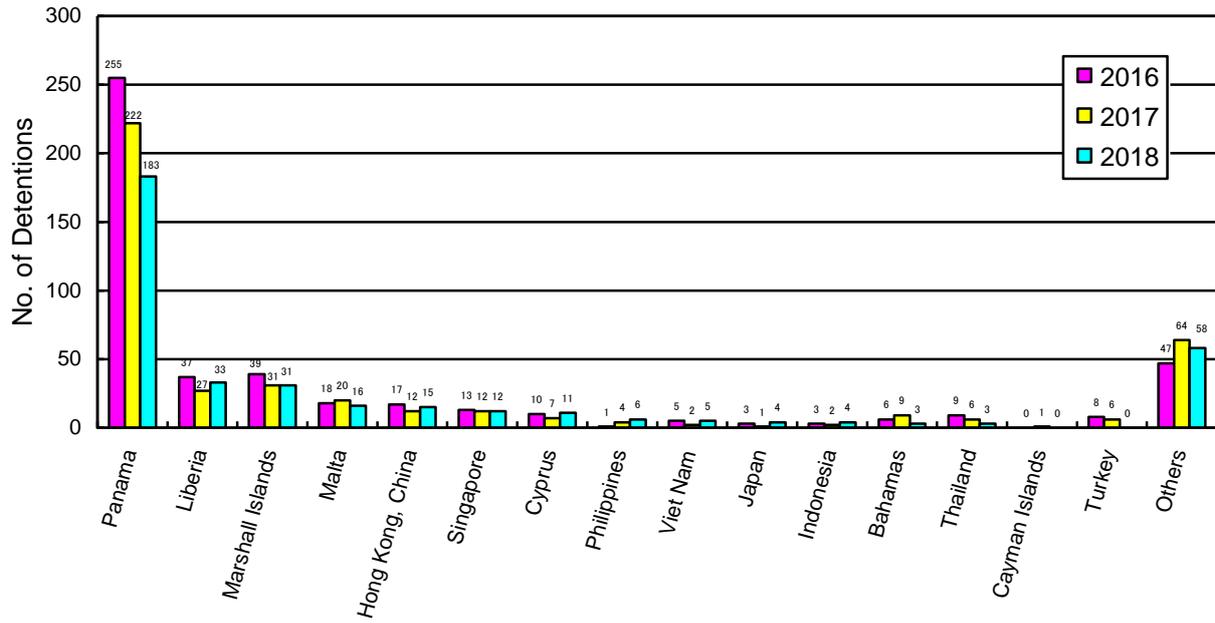


Fig. 2.2.1-1 No. of Detentions per Flag

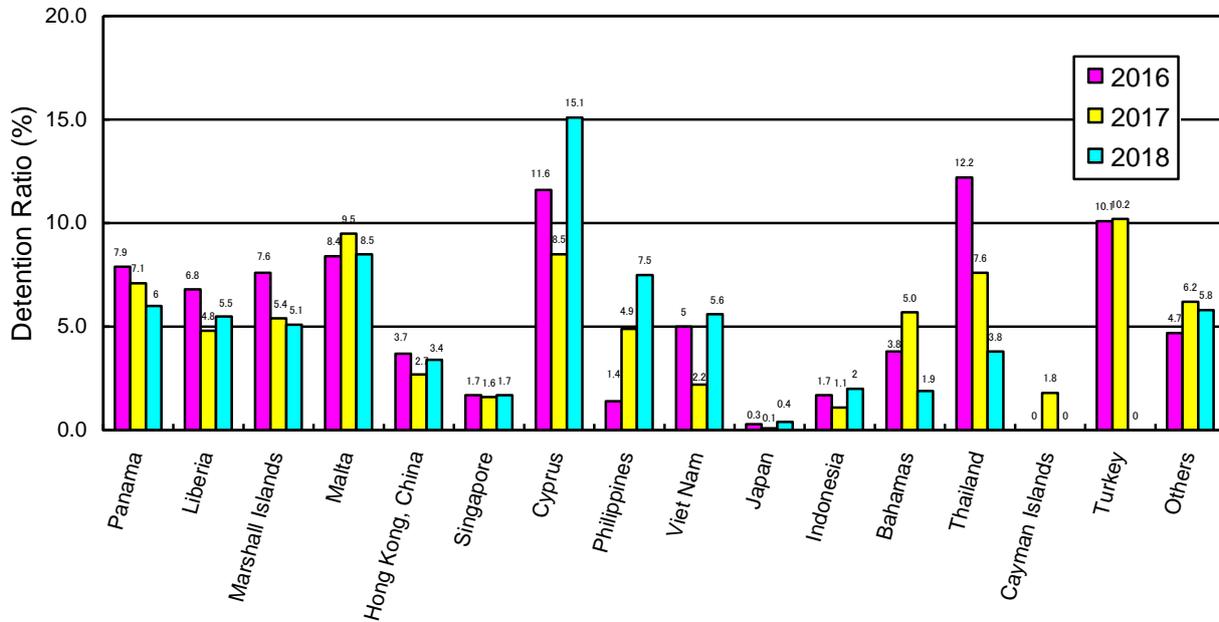


Fig 2.2.1-2 Detention Ratio per Flag (%)

2.2.2 Detentions per Ship Type

Table 2.2.2 Detentions per Ship Type

Ship Type	Number of Registered Ships in 2018 (500GT or over)	Number of Detentions			Detention Ratio (%) (= Detentions / Registered Number in each year)		
		2016	2017	2018	2016	2017	2018
Bulk Carrier	3,722	291	252	228	7.9	6.7	6.1
General Cargo	699	85	102	74	9.9	12.6	10.6
Container Carrier	609	24	17	29	4.0	2.8	4.8
Chip Carrier	119	5	4	4	4.3	3.4	3.4
Cement Carrier	124	1	2	1	0.8	1.6	0.8
Ro-Ro Ship	97	2	2	2	6.3	7.1	2.1
Reefer Carrier	115	14	9	12	11.0	7.7	10.4
Vehicles Carrier	345	7	5	9	2.0	1.5	2.6
Oil Tanker	718	14	10	4	1.9	1.3	0.6
Oil/Chemical Tanker	726	18	14	15	2.5	2.0	2.1
Gas Carrier	393	10	7	3	2.5	1.7	0.8
Others	698	0	2	3	0.0	0.3	0.4
Total	8,365	471	426	384			

Among the dry cargo ships with the large numbers, a detention ratio of General cargo ships was identified as having a higher detention ratio than other ship types noted. (‘Detention ratio’ was determined by dividing the number of detentions by the number of ships of each respective ship type in the NK fleet.)

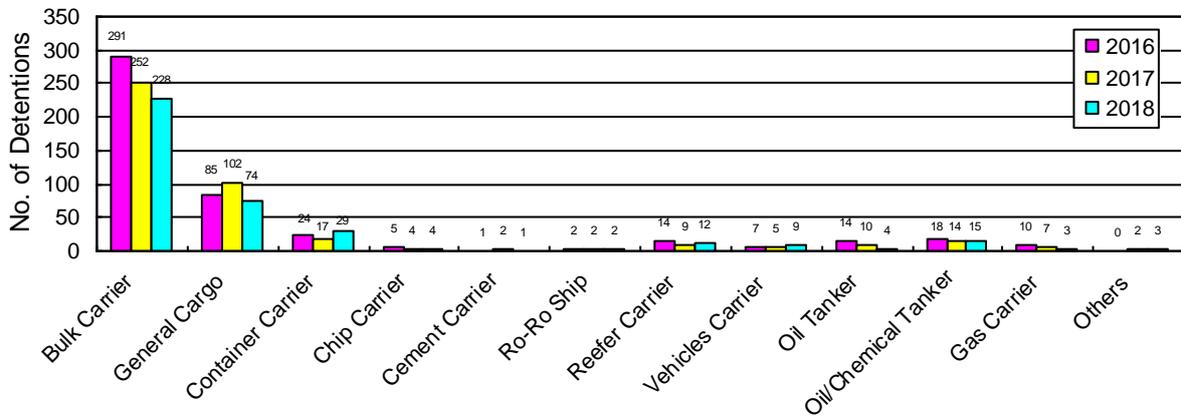


Fig. 2.2.2-1 No. of Detentions per Ship Type

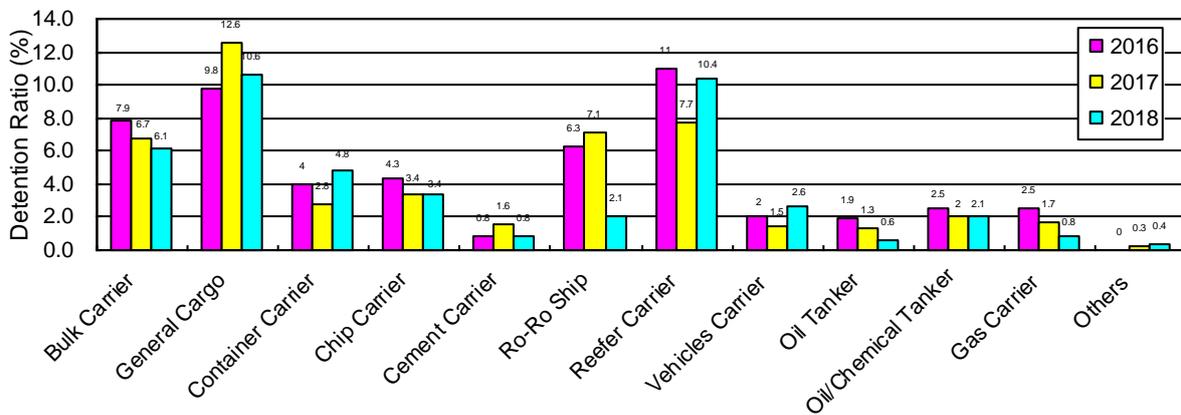


Fig. 2.2.2-2 Detention Ratio per Ship Type (%)

2.2.3 Detentions per Ship's Age

Table 2.2.3 Detentions per Ship's Age

Ship's age	Number of Registered Ships in 2018 (500GT or over)	Number of Detentions			Detention Ratio (%) (= Detentions / Registered Number in each year)		
		2016	2017	2018	2016	2017	2018
Up to 5 years old	2,386	54	37	29	1.9	1.4	1.2
Over 5 and up to 10	2,554	132	104	94	5.6	4.2	3.7
Over 10 and up to 15	1,529	81	104	97	6.5	7.7	6.3
Over 15 and up to 20	914	107	60	56	10.2	6.2	6.1
Over 20 and up to 25	661	60	74	66	10.3	11.7	10.0
Over 25	321	37	47	42	11.7	15.1	13.1
Total	8,365	471	426	384			

Aged ships tend to increase the detention ratio.

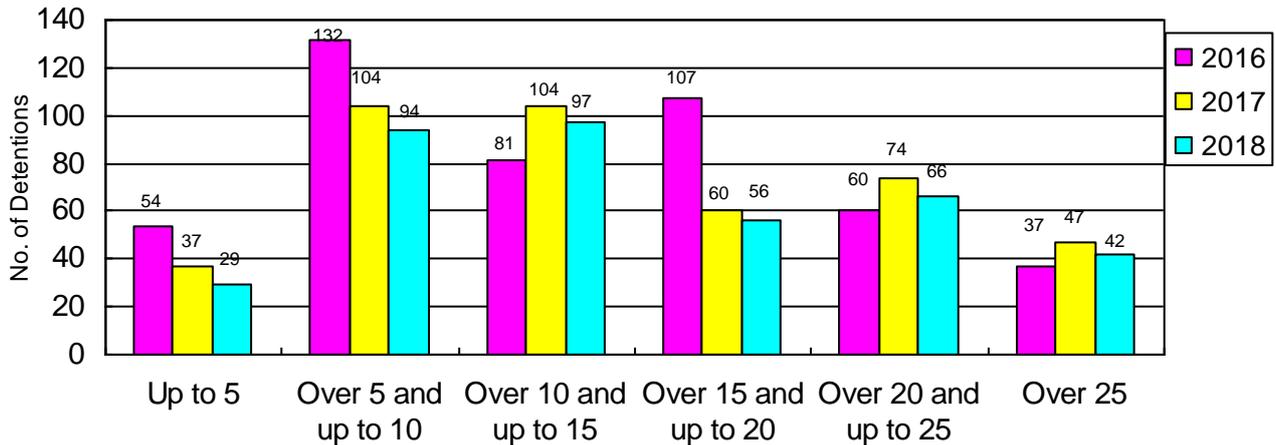


Fig. 2.2.3-1 No. of Detentions per Ship's Age

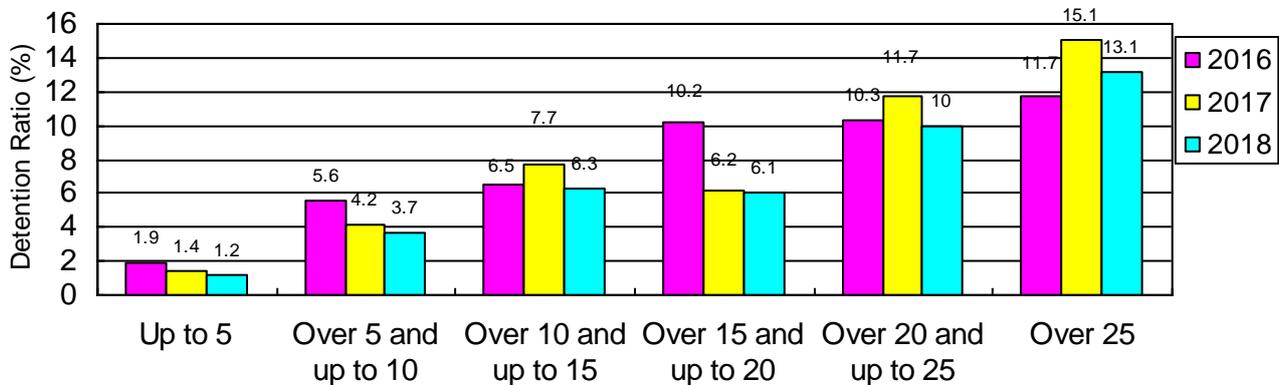


Fig. 2.2.3-2 Detention Ratio per Ship's Age (%)

2.2.4 Detentions per Ship Size (Gross Tonnage)

Table 2.2.4 Detentions per Ship Size (Gross Tonnage)

Gross Ton (x 1,000)	Number of Registered Ships in 2018 (500GT or over)	Number of Detentions			Detention Ratio (%) (= Detentions / Registered Number in each year)		
		2016	2017	2018	2016	2017	2018
Up to 10	2,649	124	130	98	4.4	4.8	3.7
Over 10 and up to 20	1,272	110	92	87	8.5	7.2	6.8
Over 20 and up to 30	1,084	58	68	69	5.5	6.3	6.4
Over 30 and up to 40	1,320	88	69	69	6.9	5.2	5.2
Over 40 and up to 50	798	34	29	23	4.5	3.6	2.9
Over 50 and up to 60	291	15	7	7	4.9	2.3	2.4
Over 60 and up to 80	207	9	7	3	4.4	3.4	1.4
Over 80	744	33	24	28	4.5	3.2	3.8
Total	8,365	471	426	384			

A detention ratio of vessels with GT up to 40,000 tends to be higher than that of vessels with GT over 40,000.

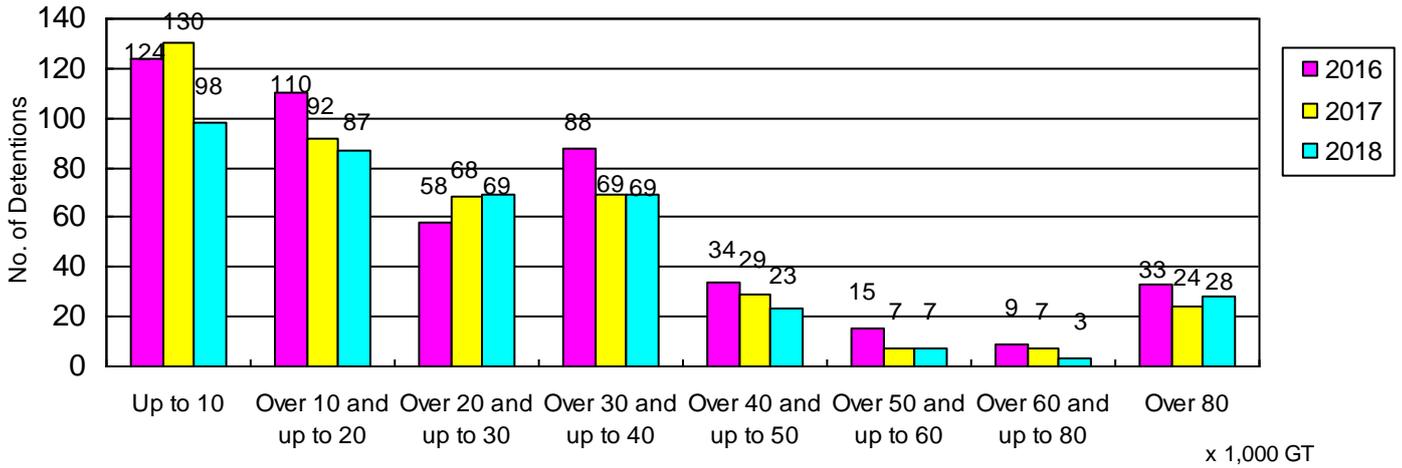


Fig.2.2.4-1 No. of Detentions per Ship Size (Gross Tonnage)

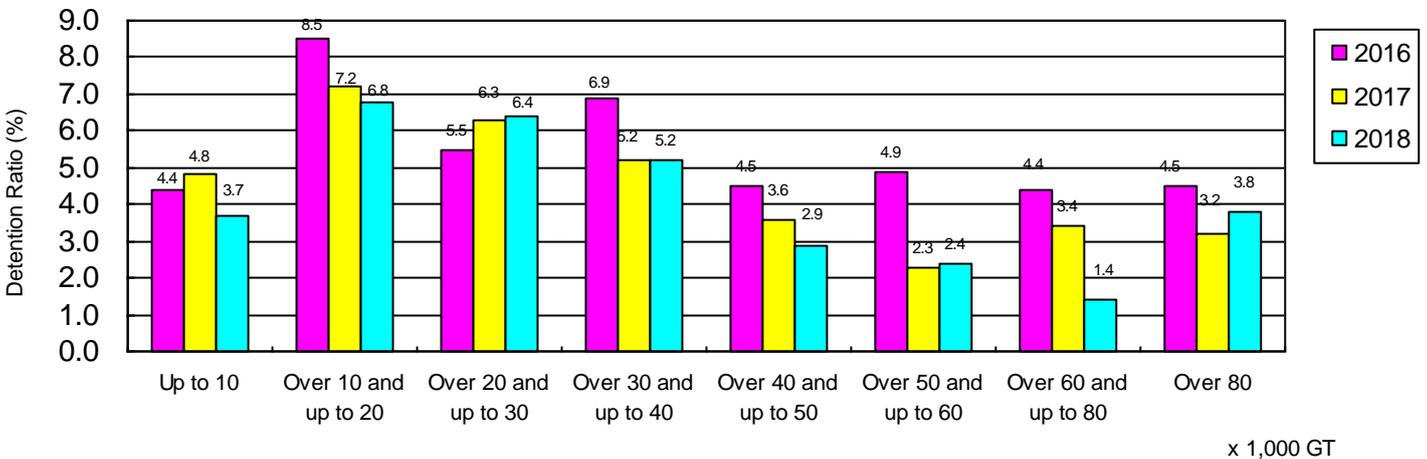


Fig. 2.2.4-2 Detention Ratio per Ship Size (Gross Tonnage) (%)

2.2.5 Detentions per PSC Country

Table 2.2.5
No. of Detentions per PSC Country

Country	2016	2017	2018
China	103	92	90
Australia	104	57	53
Russia	39	30	49
United States	23	21	25
Indonesia	14	38	19
Turkey	8	9	15
Belgium	3	4	11
Japan	24	18	10
Korea	8	14	10
France	6	8	9
United Kingdom	11	14	6
India	6	8	6
Italy	10	7	6
Iran	10	10	4
Romania	11	8	4
Egypt	1	5	4
Canada	4	4	4
Poland	3	1	4
Germany	9	11	3
Netherlands	4	5	3
Hong Kong, China	4	4	3
Spain	13	4	3
Argentina	0	2	3
New Zealand	0	2	3
Georgia	1	1	3
Tunisia	1	0	3
Others	51	37	31
Total	476	471	384

(*) Including Guam, Puerto Rico, and Pago Pago

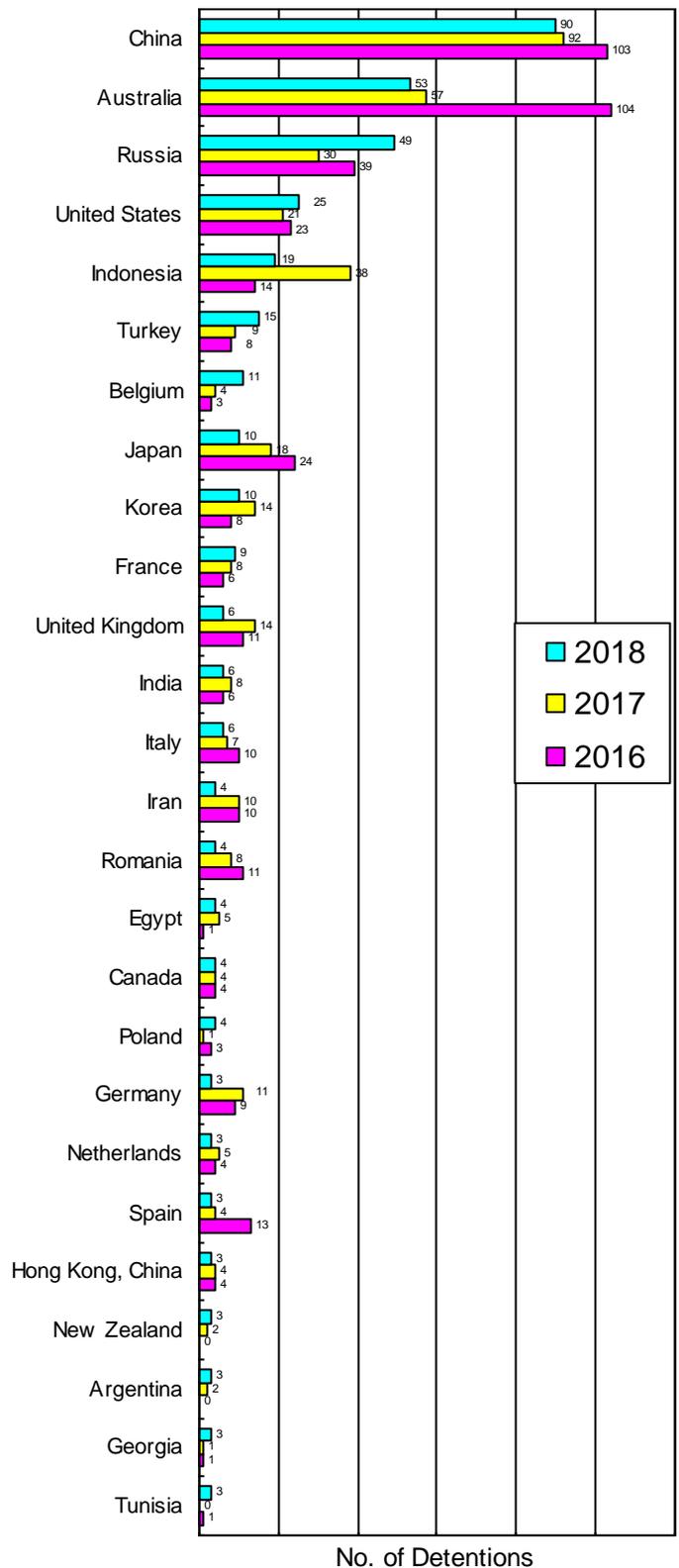


Fig. 2.2.5 No. of Detentions per PSC Country

Number of ships detained by Russia in 2018 increased compared with that of 2017.

2.2.6 Detentions per MOUs and USCG

Table 2.2.6 No. of Detentions per MOUs and USCG

Region	2016	2017	2018
Tokyo MOU	274	238	218
Paris MoU	97	89	65
USCG	23	23	24
Others	77	76	77
Total	471	426	384

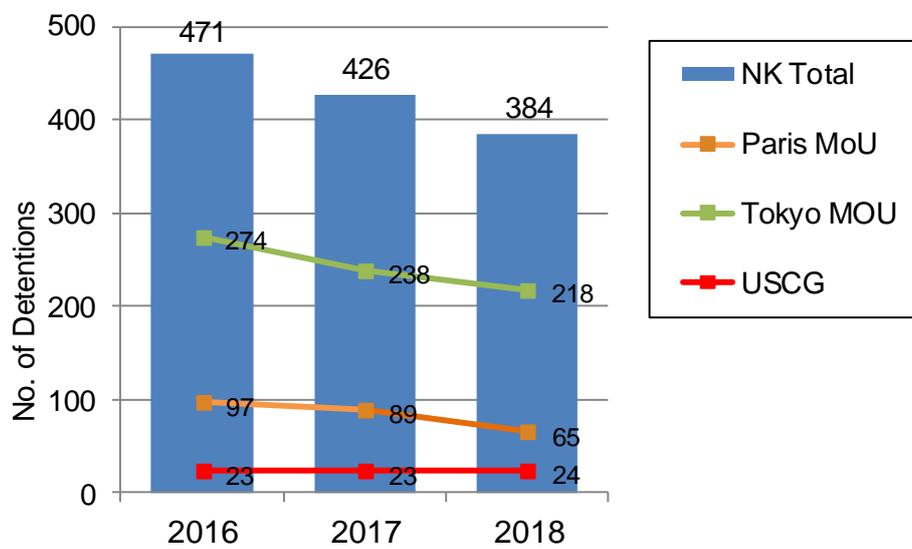


Fig. 2.2.6 No. of Detentions per MOUs and USCG

Compared with number of 2017, number of detention at Tokyo MOU decrease 8% and at Paris MoU decrease 27% in 2018.

2.3 Analysis of Detainable Deficiencies

2.3.1 Detainable Deficiencies per Category

In 2018 a total of 1,083 detainable deficiencies were reported relating to 384 detentions, i.e., deficiencies which were serious enough to jeopardise the ship’s seaworthiness, safety of the crew onboard, or to present a threat of harm to the environment and therefore warranted the detention of the ship. The deficiencies are categorized as shown in Figure 2.3.1 and categories in this figure are based on those of the Tokyo MOU. Deficiencies related to fire safety and life-saving appliances combined accounted for about one-third of the total in 2018.

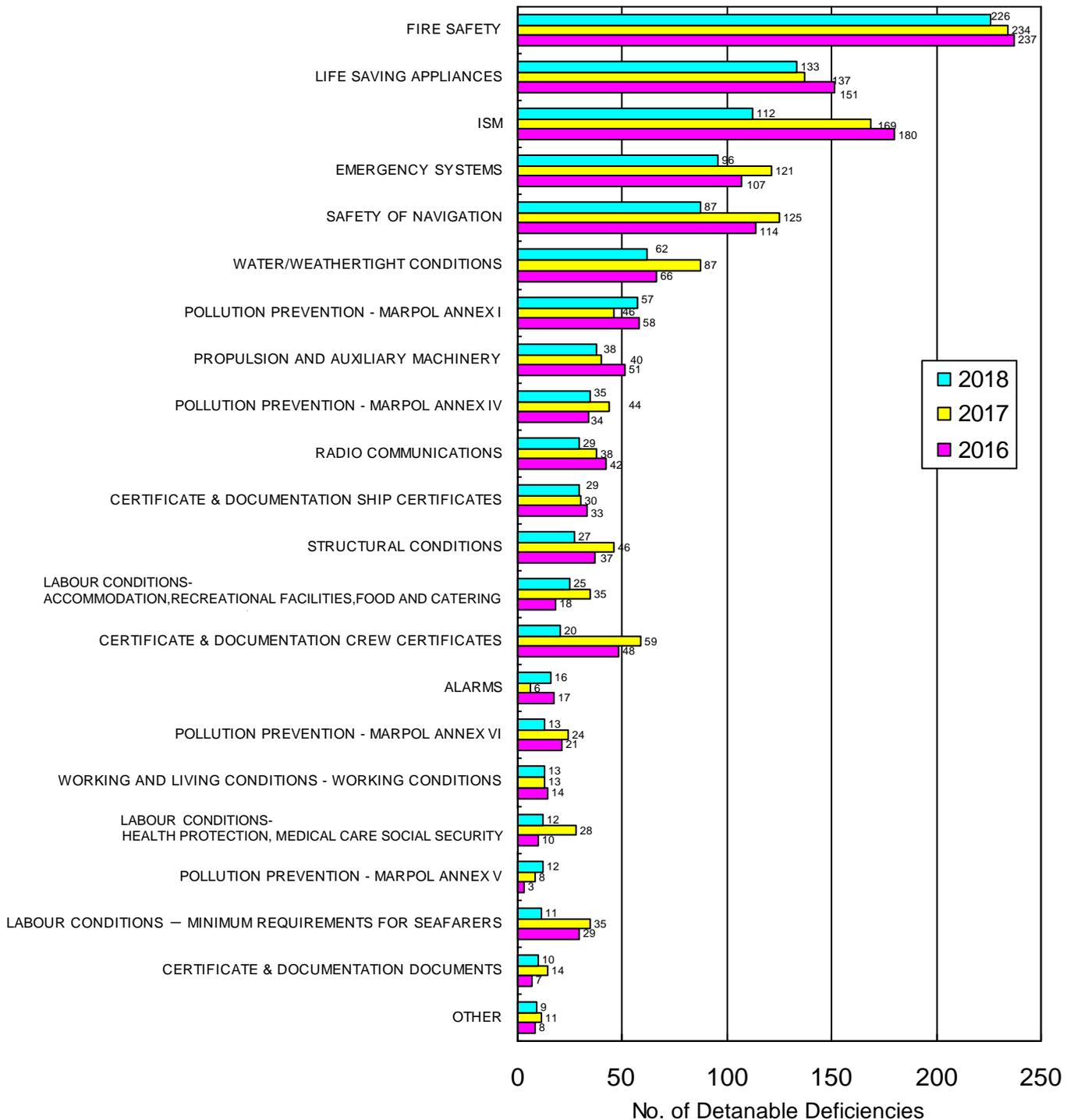


Fig. 2.3.1 No. of Detainable Deficiencies per Category

2.3.2 Frequently Reported Deficiencies

Figure 2.3.2 shows those items of detainable deficiencies that were reported frequently, in conjunction with the actual detention of ships in the NK fleet. Lifeboats, ISM, fire doors and fire damper continue to be the major items where most detainable deficiencies were found. The items reported from 2016 to 2018 are explained in detail in paragraphs (1) to (15) below. (Regarding details of deficiencies related to ISM and MLC, refer to Chapter 3 and Chapter 4.)

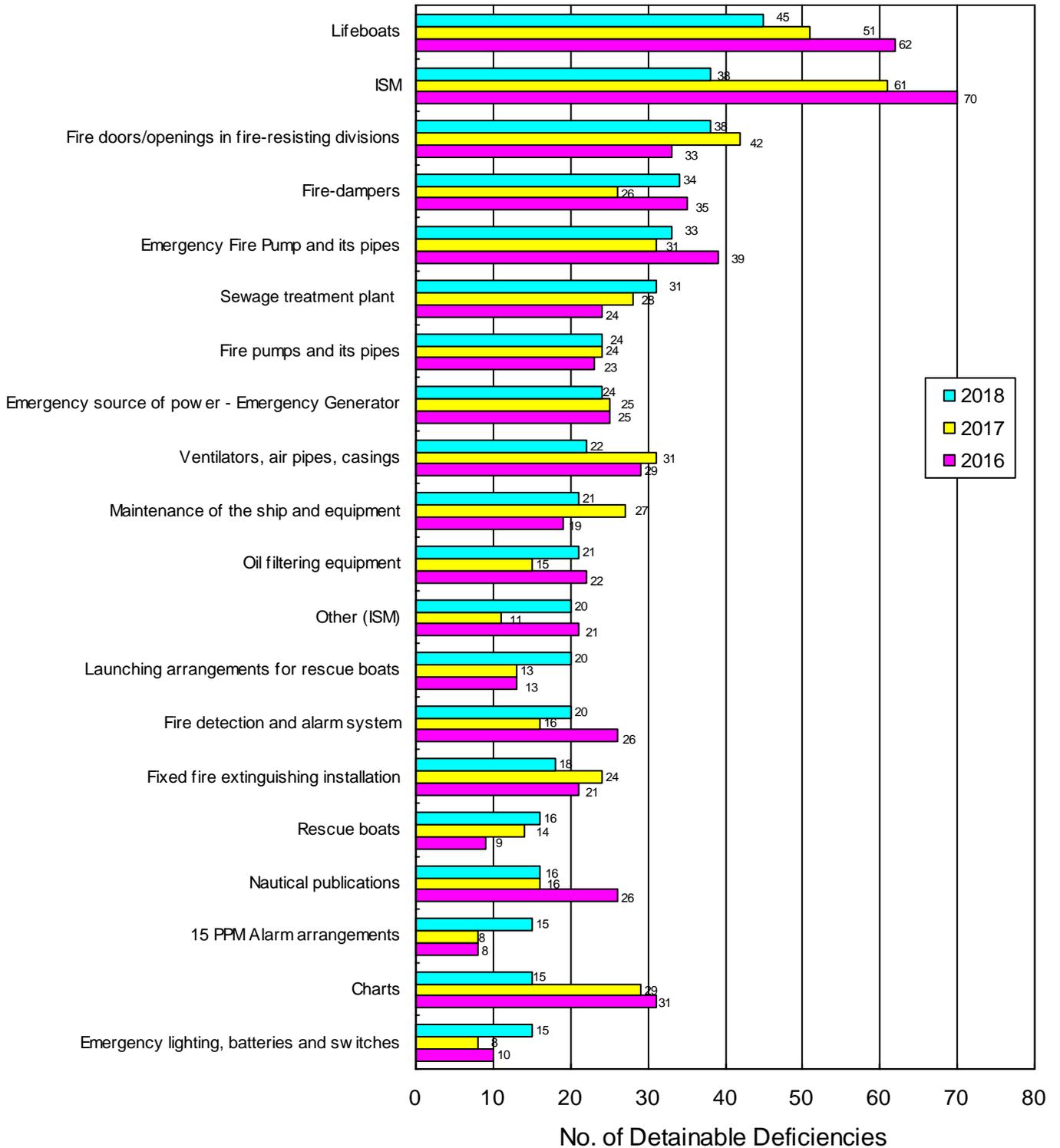


Fig. 2.3.2 Detainable Deficiencies Frequently Reported

(1) Fire Safety

Major types and details of deficiencies noted under the category of “Fire Safety” are shown in Table 2.3.2-(1) below.

Table 2.3.2-(1) Fire Safety

Item	2016	2017	2018	Noted Deficiencies
Fire doors/openings in fire-resisting divisions	33	42	38	Malfunction of self-closing devices Poor closing condition of fire door
Fire-dampers	35	26	34	Wasted and holed fire-dampers Defective operation of fire-dampers
Fire pumps and its pipes	23	24	24	Malfunction of fire pump(incl. for emergency) Wasted and holed fire main line
Fire detection	26	16	20	Inoperable fire detection units
Fixed fire extinguishing system	21	24	18	Corroded and holed CO ₂ lines Defective operation of fire extinguishing systems
Quick closing valves, Remote control devices	10	13	11	Inoperable quick closing valves
Fire fighting equipment and appliances	7	13	11	Wasted and holed fire hoses Fire extinguisher expired
Fire prevention structural integrity	10	9	11	Wasted fire insulation
Other (fire safety)	15	11	9	Fire hazard due to oil leakage from equipment in Engine Room
Ventilation	11	11	9	Corroded and holed ventilator casings Malfunction of mechanical ventilators

(2) Life Saving Appliances

Major types and details of deficiencies noted under the category of “Life Saving Appliances” are shown in Table 2.3.2-(2) below.

Table 2.3.2-(2) Life Saving Appliances

Item	2016	2017	2018	Noted Deficiencies
Lifeboats	62	51	45	Lifeboat engine not started Poor maintenance of rechargeable batteries Inadequate resetting of on-load release gears
Launching arrangements for rescue boats	13	13	20	Inoperative davit (Components seized, etc.)
Rescue boats	9	14	16	Rescue boat engine not started Poor maintenance of rechargeable batteries
Launching arrangements for survival craft	14	10	8	Corroded boat falls
Embarkation arrangement survival craft	8	11	7	Embarkation ladder heavily corroded and broken
Inflatable liferafts	7	2	7	Annual service expired

(3) ISM Related Deficiencies

For details of deficiencies, refer to Chapter 3.

(4) Emergency Systems

Major types and details of deficiencies noted under the category of “Emergency Systems” are shown in Table 2.3.2-(4) below.

Table 2.3.2-(4) Emergency Systems

Item	2016	2017	2018	Noted Deficiencies
Emergency Fire Pump and its pipes	39	31	33	Inoperable and unable to pressure the fire main
Emergency source of power-Emergency Generator	25	25	24	Emergency generator unable to start automatically or manually
Emergency lighting, batteries and switches	10	8	15	Deficient batteries/emergency generator Inoperable emergency lighting
Fire drills	17	23	12	Fire drill failed
Abandon ship drills	7	18	4	Abandon ship drill failed Drill not conducted
Enclosed space entry and rescue drills	6	7	3	Enclosed spaces drill not planned and conducted as per requirement

(5) Safety of Navigation

Major types and details of deficiencies noted under the category of “Safety of Navigation” are shown in Table 2.3.2-(5) below.

Table 2.3.2-(5) Safety of Navigation

Item	2016	2017	2018	Noted Deficiencies
Nautical publications	26	16	16	Nautical publications (tide table, list of lights, list of radio signals, etc.) not updated
Charts	31	29	15	Navigation charts not updated Navigation charts for intended voyage not available
Voyage data recorder (VDR/S-VDR)	13	15	13	Defective VDR/S-VDR Alarm panel showing “system error”
Lights, shapes, sound -signals	9	11	7	Inoperable navigation lights
Electronic charts (ECDIS)	1	3	7	ENC not updated

(6) Water/ Weathertight conditions

Major types and details of deficiencies noted under the category of “Water/ Weathertight conditions” are shown in Table 2.3.2-(6) below.

Table 2.3.2-(6) Water/ Weathertight conditions

Item	2016	2017	2018	Noted Deficiencies
Ventilators, air pipes, casings	29	31	22	Waster/Holed ventilators and pipes Damaged float of air pipe heads Damaged closing devices
Hatch Covers	13	25	10	Wasted/Holed hatch covers Wasted hatch cover cleats and its spacers Deteriorated rubber packing
Cargo and other hatchways	7	9	8	Wasted hatch covers and coamings Packing missing and damaged
Doors	6	5	4	Doors not closed tightly

(7) MARPOL Annex I

Major types and details of deficiencies noted under the category of “MARPOL Annex I” are shown in Table 2.3.2-(7) below.

Table 2.3.2-(7) MARPOL Annex I

Item	2016	2017	2018	Noted Deficiencies
Oil filtering equipment (Oily-Water Separating Equipment)	22	15	21	Inoperable oily water separator Inoperable bilge pump Oily water inside overboard discharging line Ship’s crew not familiar with operation of oil filtering equipment
15PPM alarm arrangements	8	8	15	Failure of 15PPM alarm
Oil and oily mixtures from machinery spaces	13	8	4	Oil spot beneath M/E and A/E
Oil discharge Monitoring and control system (ODM)	4	2	4	Inoperable ODM
Other (MARPOL Annex I)	5	1	4	Oil spill kit list missing

(8) Propulsion and auxiliary machinery

Major types and details of deficiencies noted under the category of “Propulsion and auxiliary machinery” are shown in the Table 2.3.2-(8) below.

Table 2.3.2-(8) Propulsion and auxiliary machinery

Item	2016	2017	2018	Noted Deficiencies
Auxiliary engine	11	12	14	Inoperable Auxiliary engines Uncleanness due to leakage of oil
Other (machinery)	11	9	11	Excessive oil and bilge in engine room Malfunction of air compressors
Bilge pumping arrangements	3	3	7	Leakage from pump/piping Falure of bilge alarm
Propulsion main engine	15	12	4	Defective oil mist detectors Uncleanness due to leakage of oil and cooling water

(9) MARPOL Annex IV

Major types and details of deficiencies noted under the category of “MARPOL Annex IV” are shown in Table 2.3.2-(9) below.

Table 2.3.2-(9) MARPOL Annex IV

Item	2016	2017	2018	Noted Deficiencies
Sewage treatment plant	24	28	31	Not operative
Other (MARPOL Annex IV)	6	6	1	Sewage is pumped directly to sea as sewage treatment plant defective

(10) Radio Communications

Major types and details of deficiencies noted under the category of “Radio Communications” are shown in Table 2.3.2-(10) below.

Table 2.3.2-(10) Radio Communications

Item	2016	2017	2018	Noted Deficiencies
MF/HF radio installation	9	11	8	Malfunction of radio devices
Operation of GMDSS equipment	5	3	4	Ship's crew not familiar with operation of GMDSS equipment
Facilities for reception of marine safety information	1	2	4	Malfunction of NAVTEX printer
EPIRB	2	1	4	Damaged EPIRB cover
Reserve source of energy	12	11	3	GMDSS reserve source of energy failed

(11) Ship Certificates

Major types and details of deficiencies noted under the category of “Ship Certificates” are shown in the Table 2.3.2-(11) below.

Table 2.3.2-(11) Ship Certificates

Item	2016	2017	2018	Noted Deficiencies
Cargo Ship Safety Equipment Certificate (including Exemption)	9	6	5	Original certificate missing, or expired

(12) Structural Conditions

Major types and details of deficiencies noted under the category of “Structural Conditions” are shown in Table 2.3.2-(12) below.

Table 2.3.2-(12) Structural Conditions

Item	2016	2017	2018	Noted Deficiencies
Steering gear	2	4	8	Oil leakage
Ballast, fuel and other tanks	3	2	5	Inoperable self closing device of sounding pipe

(13) Labour Conditions-Accommodation, recreational facilities, food and catering

Major types and details of deficiencies noted under the category of “Labour Conditions-Accommodation, recreational facilities, food and catering ” are shown in Table 2.3.2-(13) below.

Table 2.3.2-(13) Labour Conditions-Accommodation, recreational facilities, food and catering

Item	2016	2017	2018	Noted Deficiencies
Sanitary facilities	5	7	7	Toilet/bath room defective/dirty
Heating, air conditioning and ventilation	2	3	3	Malfunction of air conditioning unit

(14) Crew Certificate

Major types and details of deficiencies noted under the category of “Crew Certificate” are shown in Table 2.3.2-(14) below.

Table 2.3.2-(14) Crew Certificate

Item	2016	2017	2018	Noted Deficiencies
Seafarers' employment agreement (SEA)	12	18	9	Expired, missing
Certificates for master and officers	9	11	4	Missing of endorsement on STCW certificates by flag state Valid certificates expired
Endorsement by flag State	20	16	3	Expired, missing
Manning specified by the minimum safe manning doc	1	4	3	Short of crews

(15) Alarms

Major types and details of deficiencies noted under the category of “Alarms” are shown in Table 2.3.2-(15) below.

Table 2.3.2-(15) Alarms

Item	2016	2017	2018	Noted Deficiencies
General alarm	0	1	5	Not operative
Mechinery controls alarm	1	1	4	

2.4 Analysis of Detainable Deficiencies per PSC Country

Most frequent detainable deficiencies per PSC country are shown in Tables 2.4.1 to 2.4.12 according to number of detentions reported from 2016 to 2018. (Regarding details of deficiencies related to ISM and MLC, refer to Chapter 3 and Chapter 4.)

2.4.1 China

Table 2.4.1 China

Category of Detainable Deficiency	2016	2017	2018
Fire safety	68	56	46
Life saving appliances	30	43	37
ISM	39	38	25
Emergency Systems	23	15	24
Pollution prevention -MARPOL Annex I	14	13	21
Water/Weathertight conditions	22	23	18
Safety of Navigation	16	20	13
Pollution prevention -MARPOL Annex IV	6	9	12
Radio Communications	7	9	6
Certificate & Documentation Ship Certificates	4	9	4
Structural Conditions	5	8	4

Type of Detainable Deficiency Frequently Reported	2016	2017	2018
Lifeboats	15	22	17
Maintenance of the ship and equipment	8	17	14
Oil filtering equipment	9	6	14
Sewage treatment plant	5	6	12
Ventilators, air pipes, casings	14	14	11
Emergency Fire Pump and its pipes	12	5	11
Launching arrangements for rescue boats	2	3	9
Remote Means of control (opening, pumps, ventilation, etc.) Machinery spaces	4	4	7
Fire-dampers	9	3	7
Emergency source of power - Emergency Generator	5	3	7
Fire detection and alarm system	7	1	7
Fire pumps and its pipes	4	2	6
Fire prevention structural integrity	6	8	5

A total of 231 detainable deficiencies relating to 90 detentions were noted in 2018. (2.6 detainable deficiencies/detention)

2.4.2 Australia

Table 2.4.2 Australia

Category of Detainable Deficiency	2016	2017	2018
ISM ^(*)	46	22	14
Emergency Systems	16	11	13
Life saving appliances	18	7	11
Fire safety	10	5	11
Water/Weathertight conditions	6	8	7
Pollution prevention -MARPOL Annex I	5	1	7

Type of Detainable Deficiency Frequently Reported	2016	2017	2018
Emergency source of power - Emergency Generator	11	7	8
Fire-dampers	6	4	7
Other (ISM)	16	8	6
Shipboard operations	26	11	5
Emergency Fire Pump and its pipes	5	4	5
Rescue boats	4	1	5
15 PPM Alarm arrangements	1	1	4
Other (SOLAS operational)	1	0	4

(*) In Australia, deficiency relating to Safety of Navigation is not directly judged as detainable deficiency but as ISM detainable deficiency since it is regarded as ISM related.

A total of 75 detainable deficiencies relating to 53 detentions were noted in 2018.
(1.4 detainable deficiencies/detention)

2.4.3 Russia

Table 2.4.3 Russia

Category of Detainable Deficiency	2016	2017	2018
Fire safety	9	9	25
Safety of Navigation	12	11	23
Emergency Systems	15	9	17
Life saving appliances	19	7	15
ISM	1	1	15
Certificate & Documentation Ship Certificates	0	4	9

Type of Detainable Deficiency Frequently Reported	2016	2017	2018
Other (ISM)	0	0	13
Emergency lighting, batteries and switches	4	2	11
Fire doors/openings in fire-resisting divisions	1	0	10
Lifeboats	11	3	8
Nautical publications	1	2	7
Emergency Fire Pump and its pipes	8	5	4
Lights, shapes, sound-signals	2	3	4
Facilities for reception of marine safety information	0	1	4

A total of 136 detainable deficiencies relating to 49 detentions were noted in 2018.
(2.8 detainable deficiencies/detention)

2.4.4 U.S.A.

Table 2.4.4 U.S.A.

Category of Detainable Deficiency	2016	2017	2018
Fire safety	12	11	11
ISM	9	10	6
Life saving appliances	12	4	6
Propulsion and auxiliary machinery	4	0	4
Water/Weathertight conditions	0	2	3
Pollution prevention -MARPOL Annex I	3	10	2
Structural Conditions	2	2	2
Emergency Systems	2	2	2

Type of Detainable Deficiency Frequently Reported	2016	2017	2018
Steering gear	1	1	2
Readily availability of fire fighting equipment	1	1	2
Other (machinery)	1	0	2
Fixed fire extinguishing installation	0	0	2
Auxiliary engine	0	0	2

A total of 46 detainable deficiencies relating to 25 detentions were noted in 2018.
(1.8 detainable deficiencies/detention)

2.4.5 Indonesia

Table 2.4.5 Indonesia

Category of Detainable Deficiency	2016	2017	2018
Fire safety	19	37	22
Pollution prevention -MARPOL AnnexIV	11	17	8
Life saving appliances	8	7	6
Pollution prevention -MARPOL AnnexVI	6	16	4
Radio Communications	1	6	4
Safety of Navigation	0	2	3

Type of Detainable Deficiency Frequently Reported	2016	2017	2018
Fire doors/openings in fire-resisting divisions	9	16	11
Sewage treatment plant	8	11	8
Fire-dampers	4	8	6
Incinerator	6	16	4
Fire detection and alarm system	1	3	3
Lifeboats	6	2	3
MF/HF radio installation	0	2	2
Rescue boats	0	2	2

A total of 58 detainable deficiencies relating to 19 detentions were noted in 2018.
(3.1 detainable deficiencies/detention)

2.4.6 Turkey

Table 2.4.6 Turkey

Category of Detainable Deficiency	2016	2017	2018
Fire safety	7	2	15
Safety of Navigation	3	5	5
Life saving appliances	0	5	4
Emergency Systems	0	3	2
Certificate & Documentation Crew Certificates	5	2	2
Pollution prevention -MARPOL Annex I	3	1	2
ISM	0	1	2

Type of Detainable Deficiency Frequently Reported	2016	2017	2018
Fire fighting equipment and appliances	0	1	4
Charts	1	2	3
Endorsement by flag State	4	2	2
Fire pumps and its pipes	1	1	2
Fire detection and alarm system	1	0	2
Auxiliary engine	1	0	2
Other (fire safety)	0	0	2

A total of 40 detainable deficiencies relating to 15 detentions were noted in 2018.
(2.7 detainable deficiencies/detention)

2.4.7 Belgium

Table 2.4.7 Belgium

Category of Detainable Deficiency	2016	2017	2018
Fire safety	0	1	10
ISM	2	4	9
Life saving appliances	3	1	8
Labour Conditions-Conditions of employment	1	10	6
Water/Weathertight conditions	1	3	6
Certificate&Documentation-Crew Certificates	4	1	6

Type of Detainable Deficiency Frequently Reported	2016	2017	2018
ISM	2	2	9
Seafarer' employment agreement (SEA)	2	0	6
Calculation and payment of wages	1	3	5
Ventilators, air pipes, casings	1	1	3
Launching arrangements for rescue boats	1	0	3
Cargo and other hatchways	0	1	2
Nautical publications	1	0	2
Operational readiness of lifesaving appliances	0	0	2

A total of 63 detainable deficiencies relating to 11 detentions were noted in 2018.
(5.7 detainable deficiencies/detention)

2.4.8 Japan

Table 2.4.8 Japan

Category of Detainable Deficiency	2016	2017	2018
Emergency Systems	9	7	6
ISM	12	10	4
Fire safety	3	5	2
Other	4	5	1
Certificate&Documentation-Crew Certificates	5	0	1
Structural Conditions	1	0	1

Type of Detainable Deficiency Frequently Reported	2016	2017	2018
Resources and personnel	10	10	4
Fire drills	6	6	4
Fixed fire extinguishing installation	1	1	2
Emergency Fire Pump and its pipes	1	0	2
Other (SOLAS operational)	4	5	1
Endorsement by flag State	5	0	1
Hull - corrosion	0	0	1

A total of 15 detainable deficiencies relating to 10 detentions were noted in 2018.
(1.5 detainable deficiencies/detention)

2.4.9 Republic of Korea

Table 2.4.9 Republic of Korea

Category of Detainable Deficiency	2016	2017	2018
Fire safety	5	7	5
ISM	4	6	4
Water/Weathertight conditions	2	5	2
Life saving appliances	3	3	2
Emergency Systems	1	2	2
Certificate & Documentation Ship Certificates	0	1	2

Type of Detainable Deficiency Frequently Reported	2016	2017	2018
Maintenance of the ship and equipment	1	3	1
Fixed fire extinguishing installation	2	2	1
Covers (hatchway-, portable-, tarpaulins, etc.)	1	2	1
Lifeboats	1	2	1
Oil and oily mixtures from machinery spaces	1	2	1
Abandon ship drills	0	2	1
Shipboard operations	0	2	1

A total of 22 detainable deficiencies relating to 10 detentions were noted in 2018.
(2.2 detainable deficiencies/detention)

2.4.10 France**Table 2.4.10 France**

Category of Detainable Deficiency	2016	2017	2018
Fire safety	3	9	9
Safety of Navigation	1	0	3
Life saving appliances	2	3	2
Propulsion and auxiliary machinery	1	2	2
Water/Weathertight conditions	0	2	2

Type of Detainable Deficiency Frequently Reported	2016	2017	2018
Launching arrangements for survival craft	1	0	2
Ballast, fuel and other tanks	0	0	2
Electrical installations in general	0	0	2
Main Vertical zone	0	0	2

A total of 30 detainable deficiencies relating to 9 detentions were noted in 2017.
(3.3 detainable deficiencies/detention)

2.4.11 United Kingdom**Table 2.4.11 United Kingdom**

Category of Detainable Deficiency	2016	2017	2018
Labour Conditions – Accommodation, recreational facilities, food and catering	1	9	5
Fire safety	3	5	5
ISM	7	9	3
Radio Communications	1	3	2
Working and Living Conditions -Working Conditions	0	0	2

Type of Detainable Deficiency Frequently Reported	2016	2017	2018
ISM	7	9	3
Fire doors/openings in fire-resisting divisions	0	1	2
Sanitary facilities	0	1	2

A total of 24 detainable deficiencies relating to 6 detentions were noted in 2018.
(4.0 detainable deficiencies/detention)

2.4.12 India**Table 2.4.12 India**

Category of Detainable Deficiency	2016	2017	2018
Fire safety	8	8	5
Life saving appliances	1	6	2
Certificate & Documentation Ship Certificates	0	0	2
Safety of Navigation	0	0	2

Type of Detainable Deficiency Frequently Reported	2016	2017	2018
Certificates for master and officers	0	0	2
Speed and distance indicator	0	0	2

A total of 19 detainable deficiencies relating to 6 detentions were noted in 2018.
(3.2 detainable deficiencies/detention)

Chapter 3

Statistical Analysis of NK SMC Ships Detained by PSC (ISM Code)

3.1 General

This chapter presents statistical analysis from the viewpoints of ISM Code, on the ships holding Safety Management Certificate (hereafter, “SMC”) issued by the Society (hereafter, “NK SMC ships”) based on PSC Inspection Reports NK has obtained.

Table 3.1 shows the registered number of the NK SMC ships. The NK class ships account for 90% of the NK SMC ships..

Table 3.1 Number of NK SMC Ships (per Class)

Classification	2016		2017		2018	
NK class	4,867	89.7%	4,980	90.1%	4,968	90.0%
Other class	560	10.3%	550	9.9%	549	10.0%
Total	5,427		5,530		5,517	

3.2 Statistics of Detentions of NK SMC Ships

In 2018, the total number of the detentions of NK SMC ships was 259, which was 4.7% of the all NK SMC ships, or 5,517(hereafter, “Detention Ratio”).

Tables 3.2.1 and Table 3.2.2 show the number of detentions and the Detention Ratio per flag and ship type, respectively.

Table 3.2.1 Number of Detentions and Detention Ratio of NK SMC Ships per Flag

Country	2016			2017			2018		
	(I)	(II)	(III)	(I)	(II)	(III)	(I)	(II)	(III)
Panama	196	2,665	7.4%	167	2,623	6.4%	131	2,519	5.2%
Singapore	12	594	2.0%	6	589	1.0%	11	549	2.0%
Marshall Islands	27	360	7.5%	25	440	5.7%	21	494	4.3%
Hong Kong	17	351	4.8%	10	362	2.8%	14	393	3.6%
Liberia	22	327	6.7%	16	365	4.4%	24	400	6.0%
Japan	3	268	1.1%	1	283	0.4%	3	302	1.0%
Malta	11	178	6.2%	15	179	8.4%	13	163	8.0%
Bahamas	5	114	4.4%	7	109	6.4%	2	110	1.8%
Turkey	9	90	10.0%	3	73	4.1%	0	65	0.0%
Thailand	7	75	9.3%	6	80	7.5%	3	78	3.8%
Cyprus	6	70	8.6%	5	71	7.0%	10	66	15.2%
Malaysia	3	68	4.4%	0	64	0.0%	0	50	0.0%
Other Flag	19	267	7.1%	24	292	8.2%	27	328	8.2%
Total	337	5,427	6.2%	285	5,530	5.2%	259	5,517	4.7%

Note: (I): No. of Detentions, (II): No. of NK SMC Ships, (III): Detention Ratio = (I) / (II) %

Table 3.2.2 Number of Detentions and Detention Ratio of NK SMC Ships per Ship Type (SOLAS IX)

Type of Ship	2016			2017			2018		
	(I)	(II)	(III)	(I)	(II)	(III)	(I)	(II)	(III)
Bulk Carrier	220	2,390	9.2%	167	2,451	6.8%	160	2,435	6.6%
Other Cargo Ship	94	1,946	4.8%	101	1,958	5.2%	88	2,036	4.3%
*Chemical Tanker	7	425	1.6%	10	459	2.2%	1	544	0.2%
Oil Tanker	12	414	2.9%	4	396	1.0%	8	541	1.5%
Gas Carrier	4	248	1.6%	3	263	1.1%	2	339	0.6%
MODU	0	2	0.0%	0	2	0.0%	0	2	0.0%
Passenger Ship	0	1	0.0%	0	1	0.0%	0	0	0.0%
High Speed Craft	0	1	0.0%	0	0	0.0%	0	0	0.0%
Total	337	5,427	6.2%	285	5,530	5.2%	259	5,897	4.4%

Note: 1. (I): No. of Detentions, (II): No. of NK SMC Ships, (III): Detention Ratio = (I) / (II) %
2. * Chemical Tanker includes Oil/ Chemical Tanker.

Table 3.2.3 shows “the number of detentions” and “the number of ISM detention cases” where ships were detained due to detainable deficiencies related to ISM Code (hereafter “ISM detainable deficiency”). Also, “the ISM detainable deficiencies ratio per PSC country” is shown.

Table 3.2.3 Number of Detentions and Detention Ratio of ISM Detention Cases per PSC Country

Country		2016			2017			2018		
		(I)	(II)	(III)	(I)	(II)	(III)	(I)	(II)	(III)
China		25	67	37.3%	23	63	36.5%	20	64	31.3%
Australia		29	92	31.5%	17	48	35.4%	13	47	27.7%
Russia		10	26	38.5%	7	16	43.8%	12	32	37.5%
EU	Belgium	1	3	33.3%	1	1	100.0%	6	7	85.7%
	Italy	1	8	12.5%	2	8	25.0%	4	4	100.0%
	Germany	2	8	25.0%	2	8	25.0%	2	2	100.0%
	Other EU Members	17	39	43.6%	10	38	26.3%	10	20	50.0%
USA		5	17	29.4%	5	16	31.3%	5	16	31.3%
Other Countries		29	77	37.7%	24	87	27.6%	13	67	19.4%
Total		119	337	35.3%	91	285	31.9%	85	259	32.8%

Note: (I): No. of the ISM detention case
(II): No. of detentions of NK SMC ships. (Notwithstanding the reason of detention)
(III): ISM detainable deficiencies ratio = (I) / (II) %

3.3 Analysis of ISM Detainable Deficiencies

This section introduces a study of ISM detainable deficiencies recorded in China, Australia, and Russia which are top 3 countries of the number of ISM detention cases in 2018 and a part of objective evidences of the ISM detention by each country.

Deficiency Codes of ISM deficiencies specified by Tokyo MOU are shown in table 3.3.

Table 3.3 Deficiency Code per ISM Code Element (Tokyo MOU, USCG)

Def. Code	ISM Code Element	Defective Item
15101	2	Safety and Environmental Policy
15102	3	Company Responsibility and Authority
15103	4	Designated Person(s)
15104	5	Masters Responsibility and Authority
15105	6	Resources and Personnel
15106	7	Shipboard Operations
15107	8	Emergency Preparedness
15108	9	Reports of Non-conf., accidents & hazardous occur.
15109	10	Maintenance of the ship and equipment
15110	11	Documentation- ISM
15111	12	Company Verification, Review and Evaluation
15112	13	Certification, Verification and Control
15199	-	Other (ISM)

3.3.1 China

Table 3.3.1(a) shows the number of ISM detainable deficiencies per Deficiency Code. Table 3.3.1(b) shows the number of deficiencies regarded as the evidences of ISM detainable deficiencies per Deficiency Code. As seen from the Table 3.3.1(a), just like 2017, “15109 - Maintenance of the ship and equipment” was most frequently recorded as ISM detainable deficiencies in 2018. Typical objective evidences of the ISM detainable deficiency are as follows.

[15109 - Maintenance of the ship and equipment]

- Corrosion of lifebuoy’s lifeline
- Malfunction of self-closing device for fire door
- Malfunction of limit switch for davit arm
- An engine of life boat or rescue boat not start
- Malfunction of solenoid valve of oily water separator
- Leakage of fuel oil from main engine and auxiliary engine or oil leakage from the line

Table 3.3.1(a) Number of ISM Detainable Deficiencies per Deficiency Code

Code	DEF_ITEM	2016	2017	2018
15101	Safety and environmental policy	1	-	1
15102	Company responsibility and authority	1	-	2
15104	Masters responsibility and authority	1	-	1
15105	Resources and personnel	4	5	1
15106	Shipboard operations	10	3	7
15107	Emergency preparedness	1	6	4
15108	Reports of NCs, accidents and hazardous occur.	1	1	-
15109	Maintenance of the ship and equipment	8	16	15
15112	Certification, verification and control	2	-	-
15199	Other (ISM)	3	1	1
Total		32	32	32

Table 3.3.1(b) Number of deficiencies regarded as objective evidences of ISM Detainable Deficiencies per Deficiency Code

Code	Item	No.	Remarks
03105	Covers (hatchway-, portable-, etc.)	6	
03108	Ventilators, air pipes, casings	12	
04103	Emergency lighting, batteries and switches	6	
07109	Fixed fire extinguishing installation	8	
07114	Remote Means of control	5	
07116	Ventilation	5	
07199	Other (fire safety)	10	E.g.) Automatic closing device of sounding pipe(E/R) broken
10109	Lights, shapes, sound-signals	5	
11101	Lifeboats	13	
11117	Lifebuoys incl. provision and disposition	6	
13101	Propulsion main engine	5	
14104	Oil filtering equipment	7	
14402	Sewage treatment plant	6	
Others		142	

3.3.2 Australia

Table 3.3.2(a) shows the number of the ISM detainable deficiencies per Deficiency Code. Table 3.3.2(b) shows the number of deficiencies regarded as objective evidences of ISM detainable deficiencies per Deficiency Code. As seen from the Table 3.3.2(a), the number of ISM detentions trends to decrease in Australia and the number of ISM detentions due to a categorized “15106 - Shipboard operations” which had been most frequently recorded in 2016 and 2017 was substantially decreased in 2018. Typical objective evidences of most frequently recorded ISM detainable deficiency, “15199 - Other (ISM)” are as follows. For the case where plural ISM code elements corresponding to the objective evidences of ISM detention were found, “15199 - Other (ISM)” was recorded.

[15199 - Others (ISM)]

- Damage and/or wastage of securing devices (cleats) or cleat crutches of cargo hatch covers
- Emergency generator unable to automatically connect to emergency switchboard
- Crews are unfamiliar with an operation of ECDIS
- Incorrect entries for discharged date, time and portion of the ship on Garbage record book
- Port and Starboard lifeboat launched and maneuvered in water overdue

Table 3.3.2(a) Number of ISM Detainable Deficiencies per Deficiency Code

Code	Item	2016	2017	2018
15105	Resources and personnel	1	1	1
15106	Shipboard operations	26	11	5
15107	Emergency preparedness	1	2	1
15109	Maintenance of the ship and equipment	2	-	2
15199	Other (ISM)	15	9	8
Total		45	23	17

Table 3.3.2(b) Number of Deficiencies Regarded as The Evidences of ISM Detainable Deficiencies per Deficiency Code

Code	Item	No.	Remarks
01308	Records of rest	5	
03104	Cargo and other hatchways	5	
03105	Covers (hatchway-, portable-, etc.)	8	
03108	Ventilators, air pipes, casings	6	
04110	Abandon ship drills	5	
04114	Emergency source of power - Emergency Generator	5	
07115	Fire-dampers	6	
07199	Other (fire safety)	10	E.g.)Oily sludge accumulated in galley exhaust duct
10111	Charts	7	
10112	Electronic charts (ECDIS)	9	
10116	Nautical publications	5	
10127	Voyage or passage plan	16	
10135	Monitoring of voyage or passage plan	6	
11101	Lifeboats	5	
14402	Sewage treatment plant	5	
Others		124	

3.3.3 Russia

Table 3.3.3(a) shows the number of ISM detainable deficiencies per Deficiency Code. Table 3.3.3(b) shows the number of deficiencies regarded as the evidences of ISM detainable deficiencies per Deficiency Code. As seen from the Table 3.3.3(a), in 2018, the number of ISM detention substantially increased and “15199 – Other (ISM)” was most frequently recorded. Typical evidences of the ISM detainable deficiency are as follows. Same as Australia, for the case where plural ISM code elements corresponding to the objective evidences of ISM detention were found, “15199 - Other (ISM)” was recorded.

[15199 - Others (ISM)]

- Not the latest international conventions (SOLAS, COLREG, MARPOL etc.)
- Not the latest nautical publications
- Damaged safety nets of accommodation ladders
- Entries in oil record book not as per required in MEPC.1/CIRC.736
- Malfunction of self-closing device for fire door
- Low insulation of feeder panel

Table 3.3.3(a) Number of ISM Detainable Deficiencies per Deficiency Code

Code	Item	2016	2017	2018
15102	Company responsibility and authority	-	-	1
15105	Resources and personnel	-	-	1
15109	Maintenance of the ship and equipment	-	-	1
15150	ISM	1	2	1
15199	Other (ISM)	-	-	13
Total		1	2	17

Table 3.3.3(b) Number of Deficiency Regarded as The Evidences of ISM Detainable Deficiency per Deficiency Code

Code	Item	No.	Remarks
01315	Oil record book	5	
01328	Ship Energy Efficiency Management Plan	5	
02108	Electrical installations in general	6	
03108	Ventilators, air pipes, casings	8	
07105	Fire doors/openings in fire-resisting divisions	16	
10111	Charts	10	
10112	Electronic charts (ECDIS)	15	
10116	Nautical publications	41	
10127	Voyage or passage plan	8	
14501	Garbage	7	
14503	Garbage management plan	8	
14801	Ballast Water Management Plan	5	
Others		144	

Chapter 4

Statistical Analysis of NK MLC Ships Detained by PSC (MLC, 2006)

4.1 General

This chapter presents statistical analysis from the viewpoints of MLC, 2006 on the ships holding Maritime Labour Certificate issued by the Society (hereafter, “NK MLC ships”) based on the PSC Inspection Reports having been obtained. Table 4.1 shows the registered number of the NK MLC ships. About 88% of the NK MLC ships are classed with this Society.

Table 4.1 Number of NK MLC Ships (per Class)

Classification	2016		2017		2018	
NK class	4,517	87.9%	4,629	87.9%	4,588	88.3%
Other class	618	12.1%	635	12.1%	603	11.6%
Total	5,135		5,264		5,191	

4.2 Statistics of Detentions of NK MLC Ships

As of the end of April 2019, 93 countries have ratified MLC, 2006 and many countries have been carrying out PSC inspections based on the convention. For detailed situations of the enforcement by the countries, please refer to the following website of ILO.

http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11300:0::NO:11300:P11300_INSTRUMENT_ID:312331:NO

The table 4.2 shows the number of detention cases due to deficiencies related to MLC, 2006 (hereafter, “MLC deficiencies”) for NK MLC ships in the last 3 years.

Table 4.2 Number of Detention Cases due to MLC Deficiencies (per PSC country)

Country		2016	2017	2018
Australia		4	6	2
Canada		2	1	2
China		-	3	2
Russia		-	2	2
EU	Germany	3	5	2
	Belgium	5	-	4
	UK	3	6	2
	Other EU Members	15	10	3
Other Countries		1	3	4
Total		33	36	23

4.3 Analysis of MLC Detainable Deficiencies

This section introduces the analysis of detainable deficiencies related to MLC, 2006 (hereafter, “MLC detainable deficiencies”) and MLC deficiencies recorded as objective evidences of ISM detainable deficiencies for NK MLC ships in 2018. In this Chapter, the deficiencies with Codes listed in Table 4.3.1 are defined as MLC deficiencies.

The number of MLC detainable deficiencies per the deficiency code is shown in Table 4.3.2. Also, top 20 MLC deficiencies regarded as objective evidences of ISM detainable deficiencies are shown in Table 4.3.3. As for the MLC detainable deficiencies, “18204 - Calculation and payment of wages” was most frequently recorded on NK MLC ships in 2018. And “01220 - Seafarers' employment agreement (SEA)” and “18302 - Sanitary facilities” followed it.

On the other hand, the following deficiencies were recorded more than 4 as objective evidences of ISM detainable deficiencies.

- “01220 - Seafarers' employment agreement (SEA)”
- “18302 – Sanitary facilities”
- “18408 - Electrical”
- “18412 - Personal equipment”
- “18416 - Ropes and wires”
- “18424 - Steam pipes, pressure pipes, wires (insulation)”
- “18425 - Access/ structural features (ship)”

Table 4.3.1 Deficiency Codes of MLC Deficiencies - Paris MOU and Tokyo MOU

Deficiency Code		Category / Item (Description in the List of Tokyo MOU Def. Codes)
01xxx		Certificates & Documentation
012	--	Crew Certificate
	01218	Medical Certificate
	01219	Training and Qualification MLC- Personal Safety Training
	01220	Seafarers` Employment Agreement (SEA)
	01221	Record of Employment
013	--	Document
	01307	Max. Hours of Work or Min, Hours of Rest (Table of Working Hours)
	01308	Records of Seafarer’s Daily Hours of Work or Rest (Records of Rest)
	01330	Procedure for Complaint under MLC, 2006
	01331	Collective Bargaining Agreement
18xxx		MLC, 2006 (Labour Conditions)
181	01-04 & 99	Minimum Requirements to Work on a Ship (Minimum Requirements for Seafarers)
182	01-05 & 99	Conditions of Employment
183	01-28 & 99	Accommodation, Recreational Facilities, Food and Catering
184	01-32 & 99	Health Protection, Medical Care, Social Security

Table 4.3.2 Number of MLC Detainable Deficiencies per Deficiency Code

Code	Item	No.	Country (*ISO des.)
01xxx	Certificates & Documentation		
01220	Seafarer' employment agreement (SEA)	5	BEL, DEU, ITA, RUS
01336	Certificate or documentary evidence of financial security for repatriation	1	RUS
01337	Certificate or documentary evidence of financial security relating to shipowners liability	1	RUS
18xxx	Labour Conditions (MLC, 2006)		
18199	Other (Minimum requirements)	1	AUS
18203	Wages	2	ESP, KOR
18204	Calculation and payment of wages	7	BEL, ITA
18302	Sanitary facilities	5	BEL, DEU, ESP, GBR
18305	Hospital accommodation (Sickbay)	2	ESP, PAN
18306	Sleeping room, additional spaces	1	DEU
18311	Mess room and recreational facilities	1	DEU
18312	Galley, handling room (maintenance)	2	DEU, GBR
18313	Cleanliness	2	GBR, ITA
18314	Provisions quantity	2	BEL, ITA
18315	Provisions quality and nutritional value	2	DEU
18318	Food temperature	1	ITA
18321	Heating, air conditioning and ventilation	2	CAN, NGA
18326	Laundry, Adequate Locker	3	BEL, CAN, GBR
18401	Medical Equipment, medical chest, medical guide	2	BEL, PAN
18410	Gas instruments	1	CHN
18412	Personal equipment	1	CAN
18418	Winches and capstans	1	CAN
18424	Steam pipes, pressure pipes, wires (insulation)	1	DEU
18499	Other (Health protection, medical care ...)	4	AUS, CHN, KOR
Total		50	-

***ISO description of the country**

ISO des.	Country	ISO des.	Country	ISO des.	Country
AUS	Australia	BEL	Belgium	CAN	Canada
CHN	China	DEU	Germany	ESP	Spain
GBR	UK	ITA	Italy	KOR	Korea
NGA	Nigeria	PAN	Panama	RUS	Russia

Table 4.3.3 Top 15 MLC Deficiencies Regarded as The Evidences of ISM Detainable Deficiencies

Code	Item	No.
01xxx	Certificates & Documentation	
01220	Seafarer' employment agreement (SEA)	6
01308	Records of rest	2
-	Other Deficiencies with 01xxx	3
18xxx	Labour Conditions (MLC, 2006)	
18201	Fitness for duty- work and rest hours	4
18301	Noise, vibration and other ambient factors	2
18302	Sanitary facilities	9
18304	Lighting (Accommodation)	2
18305	Hospital accommodation (Sickbay)	2
18311	Mess room and recreational facilities	3
18312	Galley, handling room (maintenance)	2
18314	Provisions quantity	2
18315	Provisions quality and nutritional value	3
18318	Food temperature	2
18407	Lighting (Working spaces)	3
18408	Electrical	6
18412	Personal equipment	6
18416	Ropes and wires	8
18417	Anchoring devices	4
18418	Winches and capstans	4
18424	Steam pipes, pressure pipes, wires (insulation)	5
18425	Access/ structural features (ship)	8
-	Other Deficiencies with 18xxx	32
Total		118

(Reference) PSC Inspections on Working and Living Conditions in Countries not ratifying MLC, 2006

Regarding the matters of ILO, Tokyo MOU, Paris MOU and other MOUs had been carrying out PSC inspections using deficiency codes 09000 series "Working and Living Conditions" since the time before implementation of MLC, 2006. These codes are still used by the countries in which MLC, 2006 has not yet come into force. Table 4.3.4 shows the number of detainable deficiencies with the Code pointed out in 2018.

Table 4.3.4 Number of ILO Detainable Deficiencies (per Deficiency Code)

Code	Item	No.
091xx	Living Conditions	
09102	Dirty, parasites	1
09109	Pipes, wires (insulation)	1
092xx	Working Conditions	
09209	Electrical	1
09232	Cleanliness of engine room	4
09298	Other (accident prevention)	1
Total		8

Chapter 5

Statistical Data from Tokyo MOU, Paris MoU and USCG

Several regional MOUs and Port States publicly announce their PSC data on their websites and publish Annual Reports every year. Based on these public data available, this Chapter introduces abstracts of the recent results of detentions by the Tokyo MOU, the Paris MoU and the USCG in 2018.

The full text of each respective Annual Report can be obtained from the following websites.

Tokyo MOU	http://www.tokyo-mou.org
Paris MoU	http://www.parismou.org
USCG	http://www.uscg.mil/

5.1 Tokyo MOU

In 2018, 31,589 inspections were carried out in the Tokyo MOU region, and 934 ships were detained due to serious deficiencies found onboard.

5.1.1 Port State Inspections carried out by Authorities

Table 5.1.1 shows the numbers of Port State inspections carried out by each Port State from 2016 through 2018.

Table 5.1.1 Port State Inspections carried out by Port Authorities (Tokyo MOU)

Country	No. of Inspection			No. of Detentions			Detention ratio (%)		
	2016	2017	2018	2016	2017	2018	2016	2017	2018
Australia ¹⁾	3,675	3,128	2,922	245	165	161	6.67	5.27	5.51
Canada ²⁾	510	615	511	2	5	3	0.39	0.81	0.59
Chile	869	888	831	11	13	12	1.27	1.46	1.44
China	7,736	7,242	7,549	422	372	360	5.46	5.14	4.77
Fiji	10	42	64	0	2	0	0.00	4.76	0.00
Hong Kong, China	630	664	716	24	27	24	3.81	4.07	3.35
Indonesia	2,143	1,920	1,803	33	66	60	1.54	3.44	3.33
Japan	5,438	5,439	5,173	181	107	100	3.33	1.97	1.93
Republic of Korea	1,988	1,947	1,925	72	66	67	3.62	3.39	3.48
Malaysia	1,193	1,544	1,567	18	24	13	1.51	1.55	0.83
Marshall Islands	19	20	21	2	1	3	10.53	5.00	14.29
New Zealand	184	241	288	3	6	16	1.63	2.49	5.56
Papua New Guinea	129	143	154	4	7	5	3.10	4.90	3.25
Peru	484	502	544	3	2	4	0.62	0.40	0.74
Philippines	2,420	2,714	2,976	1	2	1	0.04	0.07	0.03
Russia ²⁾	1,049	1,101	1,162	22	54	90	2.10	4.90	7.75
Singapore	1,035	1,027	1,097	29	15	15	2.80	1.46	1.37
Thailand	634	607	669	0	0	0	0.00	0	0.00
Vanuatu	0	5	4	0	0	0	0.00	0	0.00
Vietnam	1,532	1,526	1,613	18	7	0	1.17	0.46	0.00
Total	31,678	31,315	31,589	1,090	941	934	3.44%	3.00%	2.96%

1) Data is also provided to Indian Ocean MOU.

2) Data is only for the Pacific ports.

5.1.2 Black List of Flag States

Table 5.1.2 shows the Black List of Flag State announced in the Tokyo MOU Annual Report.

Table 5.1.2 Black List of Flag States (Tokyo MOU)

Flag State	No. of Inspections 2016-2018	No. of Detentions 2016-2018	Grey to White limit	Black to Grey limit
Fiji ¹⁾	44	14	Red	6
Tanzania	130	32		14
Cambodia	452	76	Orange	41
Togo	1,110	149	Yellow	92
Mongolia	278	40		27
Micronesia, Federated States of ¹⁾	372	46		35
Palau	209	27		21
Niue	155	21		17
Korea, Democratic People's Republic	539	62		48
Sierra Leone	1,149	114		95
Barbados	59	9		8
Indonesia	659	58		57

1) Fraudulently registered vessels are involved.

5.1.3 Recognized Organization Performance

Table 5.1.3 shows the detention data of IACS affiliated Recognized Organization in the Tokyo MOU Annual Report.

Table 5.1.3 Inspections and Detentions per Recognized Organization (Tokyo MOU) (*)

Recognized Organization	No. of Inspections 2016-2018	No. of Detentions 2016-2018	Detention ratio (%)
ABS	11,353	213	1.88
BV	11,439	360	3.15
CCS	7,580	58	0.77
CRS	141	8	5.67
DNV GL	27,584	606	2.20
IRS	261	11	4.21
KR	9,545	165	1.73
LR	14,569	318	2.18
NK	32,754	812	2.48
PRS	135	9	6.67
RINA	3,125	93	2.98
RS	1,382	57	4.12

(*) According to the Tokyo MOU annual report, in cases where a ship's certificates were issued by more than one recognized organization (RO), the number of inspections would be counted towards both of organizations, while the number of detentions would be counted only towards the RO that issued the certificate relating to the detainable deficiency or deficiencies.

5.1.4 Deficiencies per Category

Figure 5.1.4 shows the number of deficiencies by category for the three years from 2016 through 2018.

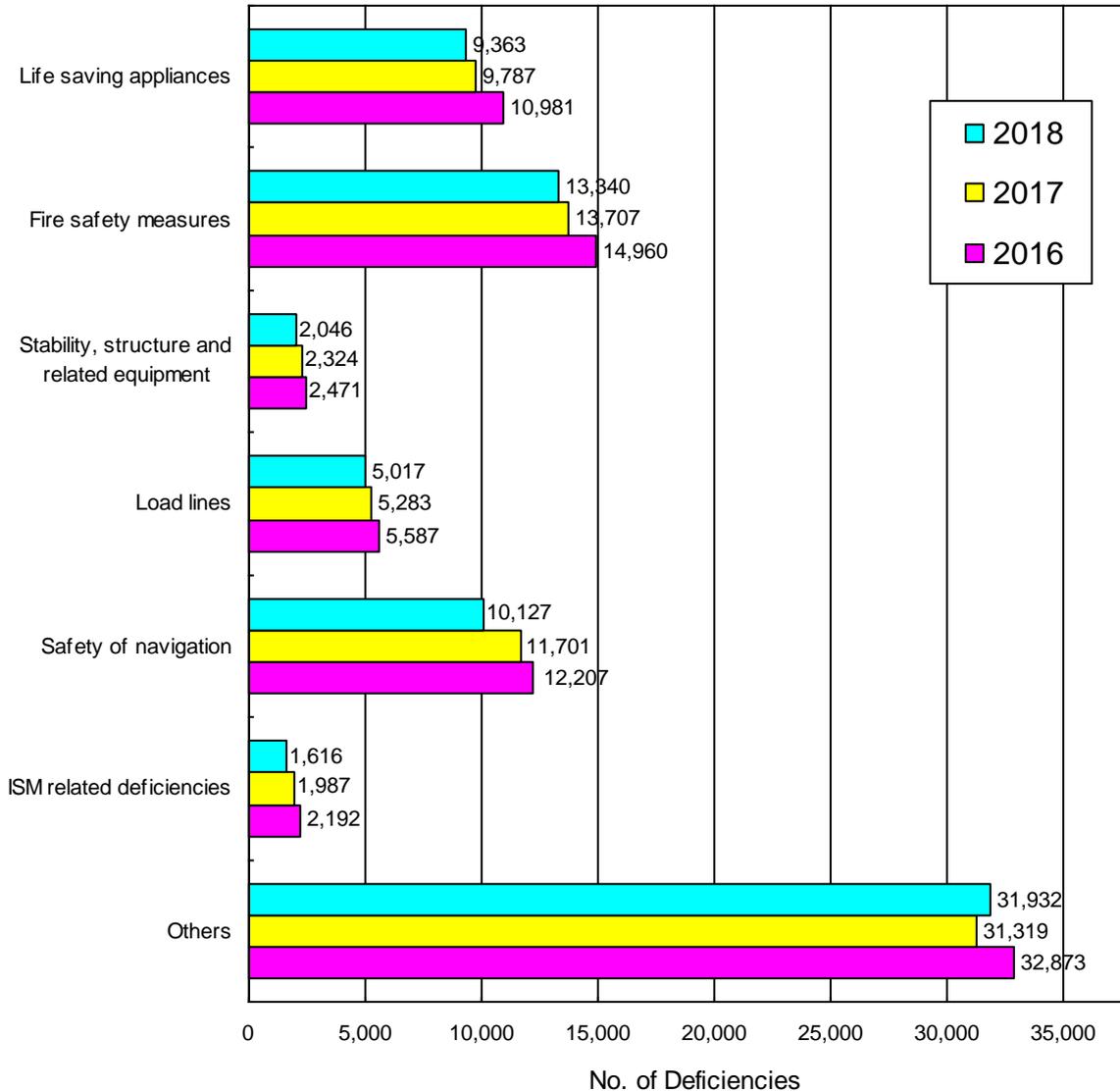


Fig. 5.1.4 Deficiencies per Category (Tokyo MOU)

5.2 Paris MoU

In 2018, 17,952 inspections were carried out in the Paris MoU region, and 566 ships were detained due to serious deficiencies found onboard.

5.2.1 Port State Inspections carried out by Authorities

Table 5.2.1 shows the numbers of Port State Inspections carried out by each respective Port State from 2016 through 2018.

Table 5.2.1 Port State Inspections carried out by Authorities (Paris MoU)

Country	No. of Inspections			No. of Detentions			Detention ratio (%)		
	2016	2017	2018	2016	2017	2018	2016	2017	2018
Belgium	942	961	989	23	23	28	2.44	2.39	2.83
Bulgaria	350	288	329	14	9	16	4.00	3.13	4.86
Canada	1,061	1,150	1,022	16	21	19	1.51	1.83	1.86
Croatia	315	323	341	4	11	11	1.27	3.41	3.23
Cyprus	147	122	114	13	11	7	8.84	9.02	6.14
Denmark	452	471	493	2	0	6	0.44	0.00	1.22
Estonia	199	202	210	2	0	0	1.01	0.00	0.00
Finland	274	282	282	1	1	0	0.36	0.35	0.00
France	1,132	1,140	1,072	24	32	35	2.12	2.81	3.26
Germany	1,149	1,121	1,134	51	48	36	4.44	4.28	3.17
Greece	1,016	1,016	982	63	66	42	6.20	6.50	4.28
Iceland	65	60	63	0	2	1	0.00	3.33	1.59
Ireland	300	288	285	7	8	9	2.33	2.78	3.16
Italy	1,430	1,464	1,381	65	93	60	4.55	6.35	4.34
Latvia	326	290	303	2	4	3	0.61	1.38	0.99
Lithuania	226	239	231	2	2	0	0.88	0.84	0.00
Malta	232	211	196	5	5	6	2.16	2.37	3.06
Netherlands	1,263	1,264	1,278	34	32	28	2.69	2.53	2.19
Norway	560	557	569	7	6	8	1.25	1.08	1.41
Poland	501	502	507	21	18	26	4.19	3.59	5.13
Portugal	499	499	514	13	7	9	2.61	1.40	1.75
Romania	502	510	533	59	58	28	11.75	11.37	5.25
Russia ¹⁾	1,186	1,337	1,360	128	126	103	10.79	9.42	7.57
Slovenia	131	132	136	1	2	1	0.76	1.52	0.74
Spain	1,673	1,562	1,556	68	39	33	4.06	2.50	2.12
Sweden	556	562	573	8	10	11	1.44	1.78	1.92
United Kingdom	1,353	1,363	1,499	50	51	40	3.70	3.74	2.67
Total	17,840	17,916	17,952	683	685	566	3.83%	3.82%	3.15%

1) Only movements to the Russian ports in the Baltic Azov, Caspian and Barents Sea are included.

5.2.2 Black List of Flag States

Table 5.2.2 shows the Black List of Flag States announced by the Paris MoU.

Table 5.2.2 Black List of Flag States (Paris MoU)

Flag State	Inspections 2016-2018	Detentions 2016-2018	Grey to White Limit	Black to Grey Limit
Congo, Republic of the	98	26	Very High Risk	12
Togo	486	92		44
Coromos	351	67	High Risk	33
Palau	210	41		21
Cambodia	44	11		6
Tanzania, United Republic of	326	58		31
Moldova, Republic of	409	69		38
Ukraine	82	17		10
Sierra Leone	333	55		31
Mongolia	36	8	Medium to High Risk	6
Albania	69	12		9
Saint Kitts and Nevis	233	31	Medium Risk	23
Belize	361	44		34
Cook Islands	424	46		39

5.2.3 Recognized Organization Performance

Table 5.2.3 shows the PSC performance of IACS affiliated Recognized Organizations among those announced by the Paris MoU for the three years from 2016 through 2018.

Table 5.2.3 Recognized Organization Performance Table (Paris MoU)

Recognized Organization	Inspections 2016-2018	RO-responsible Detentions 2016-2018	Performance Level
ABS	6,009	2	High
DNVGL	18,192	18	
CCS	869	0	
LR	12,505	14	
BV	11,450	25	
NK	8,393	23	
KRS	1,233	2	
RINA	4,427	13	
RS	2,926	15	
PRS	531	3	
CRS	153	1	
IRS	155	3	Medium

5.3 USCG

In 2018, a total of 10,418 individual vessels visited U.S. ports, and a total of 9,025 SOLAS based safety examinations were conducted by the USCG during the year.

5.3.1 USCG Statistics

Table 5.3.1 shows the number of safety related detentions for the three years from 2016 through 2018. The three-year average detention ratio decreased for the second year in a row from 1.39% to 1.06%.

Table 5.3.1 Detentions by Year (Safety)

Year	Distinct Vessel Arrivals*	SOLAS Safety		
		Detentions	Annual Detention Ratio	3 Year Average Detention Ratio
2016	9,859	98	1.04%	1.58%
2017	10,190	91	0.98%	1.39%
2018	10,418	105	1.16%	1.06%

* Distinct Vessel Arrivals: Number of ships greater than or equal to 500 GT, calling upon at least one U.S. port.

5.3.2 Targeted Flag States (Safety)

The USCG publicly announced targeted flag states. The following flag states having a detention ratio higher than the overall average were listed as targeted flag states.

Table 5.3.2 USCG Targeted Flag States (Safety)

Flag State	2016-2018 Detention Ratio	Points of Targeting Matrix
Barbados	7.59%	7 points
Cook islands ^(*)	5.71%	
India	3.85%	
Mexico ^(*)	2.56%	
Philippines	2.16%	
St. Kitts and Nevis	10.53%	
Saint Vincent and the Grenadines	2.66%	
Tanzania	16.22%	
Togo	8.54%	
Turkey	2.63%	
Vanuatu	5.73%	2 points
Antigua and Barbuda	1.54%	
Cyprus	1.32%	
Greece	1.17%	
Malta	1.60%	
Panama	1.33%	
Portugal ^(*)	1.54%	

* Administration not targeted last year.

5.3.3 Recognized Organization Performance (Safety)

The table 5.3.3 shows the PSC performance of IACS affiliated Recognized Organizations among those announced by the USCG.

Table 5.3.3 Recognized Organization Performance Table (USCG)

Class	Vessel Examinations				Class-Related Detentions				Detention Ratio	Targeted Points
	2016	2017	2018	Total	2016	2017	2018	Total		
ABS	1,836	1,685	1,936	5,457	-	-	-	-	0.00%	0 points
BV	1,113	1,166	1,191	3,470	-	-	2	2	0.05%	0 points
CCS	231	194	240	665	-	-	-	-	0.00%	0 points
CRS	17	14	20	51	-	-	-	-	0.00%	0 points
DNV GL	2,122	3,271	3,658	9,051	-	-	3	3	0.03%	0 points
IRS	13	13	22	48	-	-	-	-	0.00%	0 points
KR	242	314	269	825	-	-	-	-	0.00%	0 points
LR	2,403	2,405	2,684	7,056	-	1	-	1	0.01%	0 points
NK	2,296	2,282	2,478	6,941	-	-	1	1	0.01%	0 points
PRS	17	22	32	71	-	-	-	-	0.00%	0 points
RINA	284	320	431	1,035	-	-	-	-	0.00%	0 points
RS	34	29	32	95	-	-	1	1	1.05%	5 points

In accordance with the Boarding Priority Matrix, Recognized Organizations are evaluated on their PSC performance over the previous three years. The evaluation for 2018 was based on the records for 2016, 2017, and 2018.

The level of performance required to be in the 0 point category is a three year average class-related detention ratio less than 0.5%. A classification society that has a class-related detention ratio between 0.5% and 1.0% will be assigned 3 points; those societies with a detention ration of between 1.0% and 2.0% will be assigned 5 points and class-related detention ratios above 2.0% will be assigned a Priority 1 status.

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