

June 2022

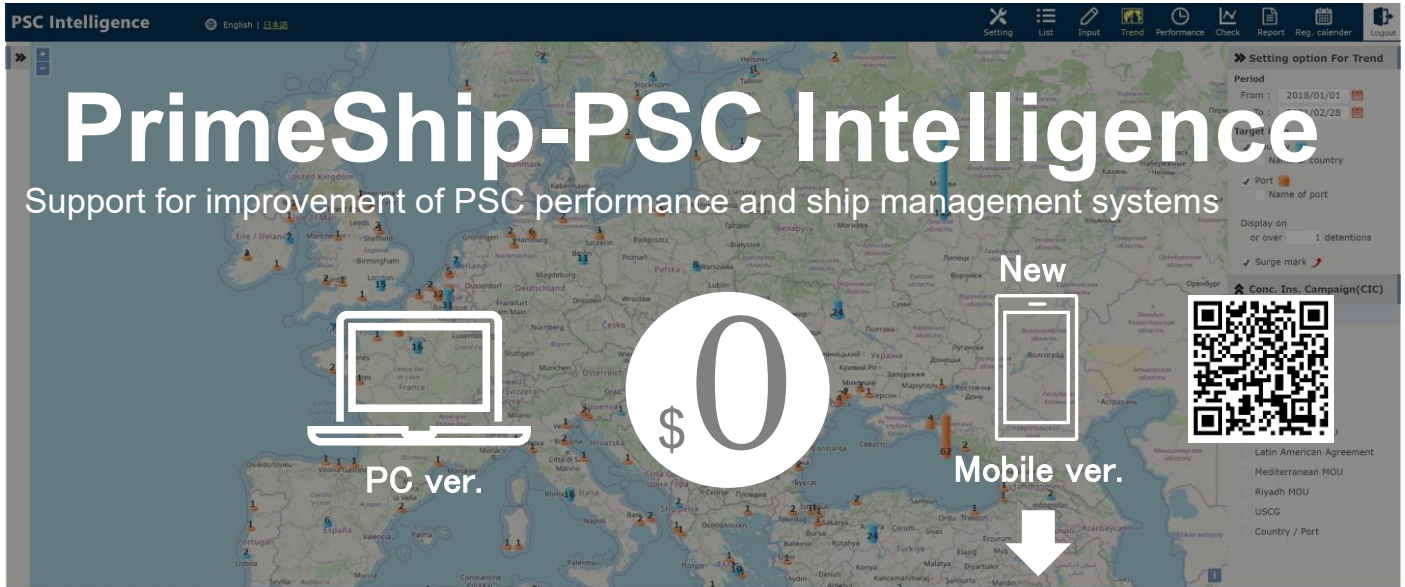
ClassNK

Port State Control Annual Report

[English]



— Introduction of ClassNK software for PSC measures —



PrimeShip-PSC Intelligence

Support for improvement of PSC performance and ship management systems

PC ver.

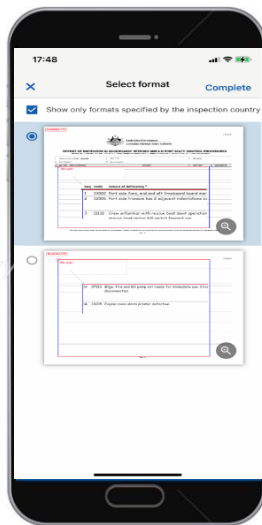
New

Mobile ver.

QR Code

In addition to the PC version of PSC Intelligence developed for ship management companies, PrimeShip-PSC Intelligence now has a mobile version available developed for seafarers*. The mobile version has five functions as followings.

*) Also available to management companies.



PSC Report Minimize input effort

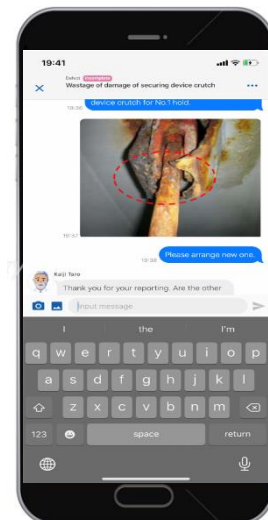
Allows you to digitize PSC reports including handwritten reports utilizing AI-OCR technology. After the data conversion is completed, it will be sent to the management company's staff in chat format and the PSC report data will be transferred to the PC version.

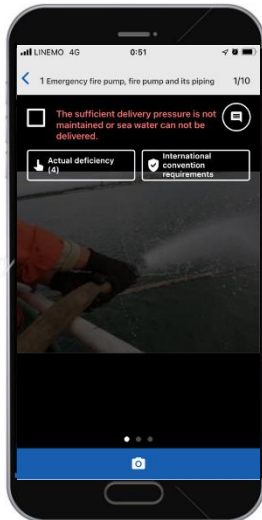


Report

Easily report and reliably manage tasks

After digitizing the PSC report and completing the checklist (coming soon*) on the app, it will be reported to the management company by tapping the send button. In addition, it is possible to easily report a device malfunction with a message using the camera. Since it also has a task management function, seafarers can communicate closely with the management company's staff in chat format and make sure to rectify the defects.





Checklist (Coming soon*)

Handle reports even in an offline environment

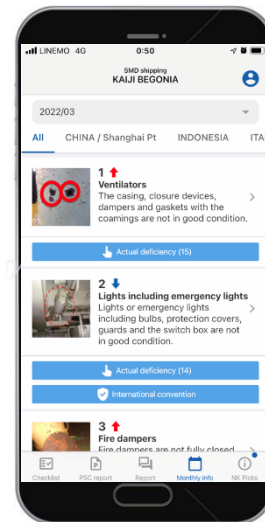
This function allows users to call up and implement pinpoint PSC checklists based on the actual deficiencies recorded by the PSC in each country and port. Also, arbitrary checklists and reports created by the user on the PC version can be handled even in an offline environment.



Monthly information (Coming soon*)

Top 10 AI-based ranking

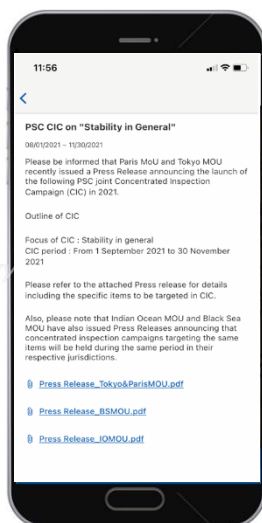
This function shows the top 10 typical deficiencies with their transition chart and actual deficiencies and photographs for the past month in each country or port set by the user.



NK Picks (Coming soon*)

Timely PSC-related information

This function provides timely PSC-related information, including IMO international convention and local regulations etc. informed by our technical information, that users should be aware of.



*Coming soon: This information is current as of the end of May 2022.

Photographs of Deficiencies

SOLAS (Fire Safety)



Cylinder hose disconnected
(Fixed CO2 extinguisher system)

Inappropriate temporary repair
& leakage from fire line



Fault alarm on
smoke detection alarm panel

SOLAS (Fire Safety)



Hold-back hook attached to a fire door that is required to be self-closing

Missing non-combustible compounds



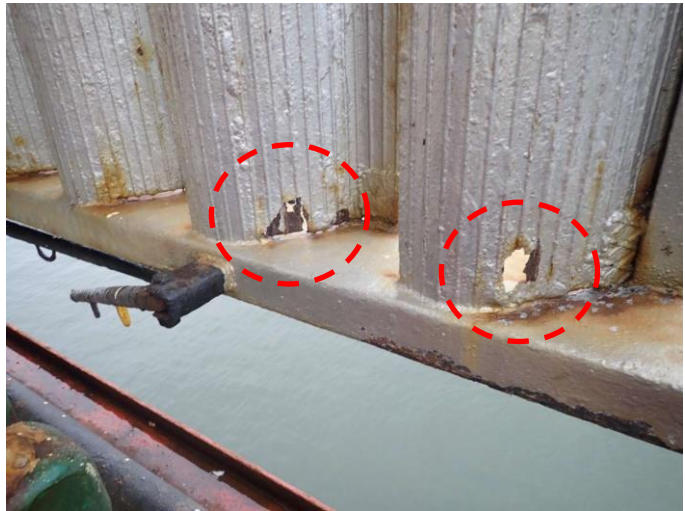
Wasted / damaged fire door gasket

SOLAS (Life Saving Appliances)



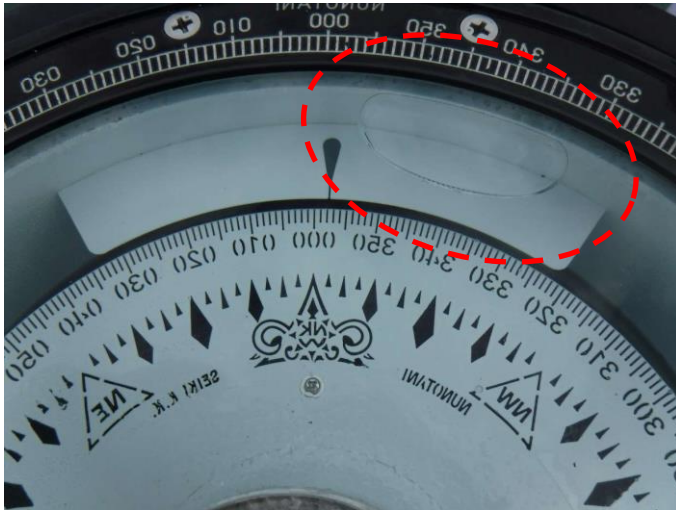
Damaged life buoy

**Corrosion holes on
accommodation ladder**



**Damage to equipment
inside the lifeboat**

SOLAS (Safety Navigation)



Air bubble in the magnetic compass

Missing wiper for the bridge window



SOLAS (Safety Construction)



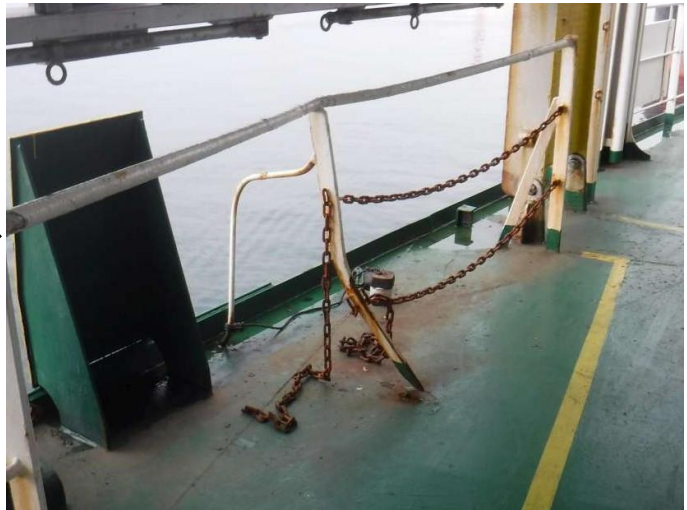
Cracks on hatch coaming & its bracket

Load Line

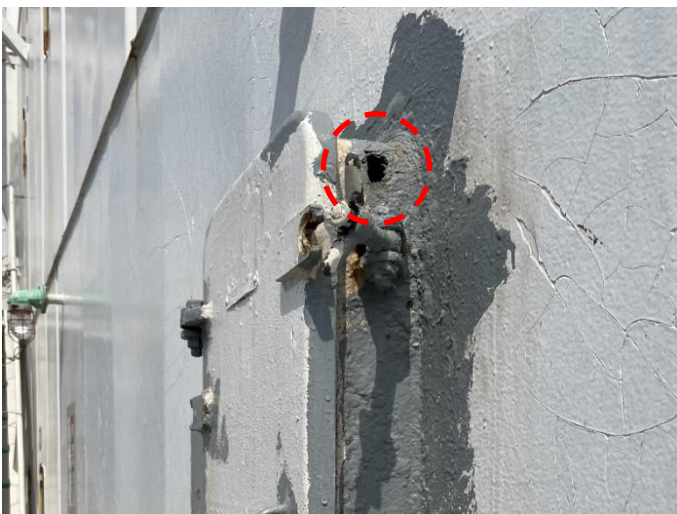


**Broken float disc
of the air pipe head**

**Deformed / cracked stanchion for
guard rails & chains disengaged**



**Corrosion hole on the
ventilation hatch coaming**

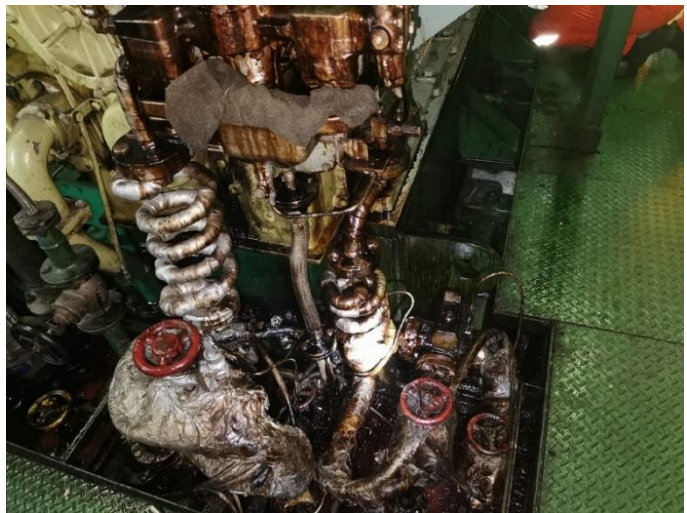


Machinery Space



Leakage from pipeline

Dirty condition with oil



Excessive oily bilge on the E/R bottom



MARPOL

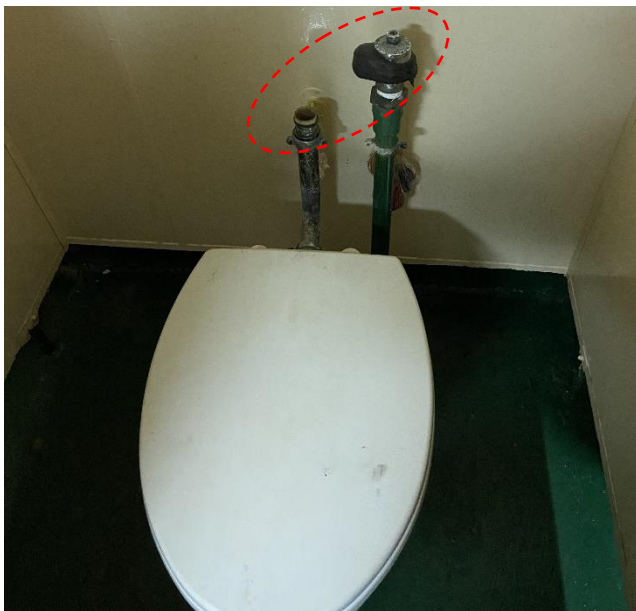


Drain plug missing

Leakage from the on board hydraulic system



Others



Unusable toilet

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 of the present state of PSC and thereby improving future onboard maintenance and inspections as well as Safety Management Systems.

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 as a very direct and effective means to reduce the number of substandard ships as well as to improve the 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 among 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 it is still expanding as more new concepts of regulations have been introduced by the adoption of NOx Tier III regulation, 2021 global cap of sulphur content in fuel oils, Ship Recycling Convention (the Hong Kong Convention), IMO DCS (EU MRV), 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 2022

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 2020 through 2022 are summarized below.

1.1.1 EU Regulation on Ship Recycling

Entry into force: 30 December 2013

[Refer to ClassNK Technical Information TEC-1170, -1185, -1224, -1225, -1255]

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 are recycled only at the recycling facilities included in the EU List, which list ship recycling facilities authorized in accordance with the Regulation.

[Deadline for developing and having an IHM onboard]

(1) EU flagged new ships: The date of delivery (building contract on/after 31 December 2018)

(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

For EU flagged ships, two hazardous materials (PFOS and HBCDD) are added to the Hong Kong Convention. Among them, PFOS is compulsory to EU flagged existing ships (EU flagged new ships are prohibited to carry PFOS). Therefore, even if an IHM complying with the Hong Kong Convention is provided onboard an EU flagged existing ship, the checking of PFOS is additionally required to comply with the EU regulation.

(Information on Ship Recycling:

<https://www.classnk.or.jp/hp/en/activities/statutory/shiprecycle/index.html>)

1.1.2 2020 global cap of sulphur content in fuel oils

Entry into force: 1 January 2020

[Refer to ClassNK Technical Information TEC-1192]

In order to reduce emissions of Sulphur Oxides (SOx) and Particulate Matter (PM) from ships, the limit of the sulphur content of any fuel oil used on board ships was tightened to 0.50% m/m outside emission control areas (ECAs) from 1 January 2020. If equipment evaluated to be equivalent to the required reduction level of SOx is not installed onboard, the loading of non-compliant fuel oil is prohibited except in cases where compliant fuel oil is unavailable.

1.1.3 Fitting or designating fuel oil sampling points

Entry into force: 1 April 2022

[Refer to ClassNK Technical Information TEC-1228, -1261]

Relating to above paragraphs 1.1.2, fuel oil sampling points are required to be fitted or designated for the purpose of taking representative samples of the fuel oil being used on board the ship by the

following date.

[Application date]

- (1) At the time of the registration survey during construction for ships with a keel laid or which are at a similar stage of construction on or after 1 April 2022.
- (2) At the time of the first IAPP renewal survey carried out on or after 1 April 2023 for ships with a keel laid or which are at a similar stage of construction before 1 April 2022. However, for Japanese-flagged ships delivered on or after 1 April 2022, at the time of the registration survey during construction.

1.1.4 Maintenance for lifeboats etc.

Entry into force: 1 January 2020

[Refer to ClassNK Technical Information TEC-1183]

On or after 1 January 2020, thorough examinations, operational tests, overhaul and repair of the lifeboat etc. are to be conducted by certified personnel of either the manufacturer or an authorized service provider in accordance with IMO Resolution MSC.402(96). In addition, personnel for the work are to be certified for each manufacturer and type of equipment to be worked on.

1.1.5 Electronic record books

Entry into force: 1 October 2020

[Refer to ClassNK Technical Information TEC-1192]

MARPOL Convention requires that ships are provided with several record books for the purpose of pollution prevention management. On and after 1 October 2020, approval of the electronic record books is needed for these record books in accordance with Guidelines for the use of electronic record books under MARPOL if the electronic record books are used in spite of paper ones.

1.1.6 Application of Cyber Risk Management

Entry into force: 27 October 2020

[Refer to ClassNK Technical Information TEC-1217]

The USCG expects all companies with U.S. flagged vessels and foreign flagged vessels that call at ports in the U.S. to ensure that cyber risk management is appropriately addressed in their SMS.

If objective evidence indicating that the foreign flagged vessel that calls at ports in the U.S. failed to implement its SMS with respect to cyber risk management is identified, the following actions should be directed by the PSCO:

- (1) If cyber risk management has not been incorporated into the vessel's SMS by the company's first annual verification of the DOC after 1 January 2021, a deficiency should be issued with action code 30 - Ship Detained.
- (2) When objective evidence indicates that the vessel failed to implement its SMS with respect to cyber risk management, a deficiency for both an operation and an ISM should be issued with an action code 17 - Rectify Prior to Departure or an action code 30 – Ship Detained depending on its seriousness.

1.1.7 Sampling analysis at commissioning tests for ballast water management systems

Entry into force: 1 June 2022

[Refer to ClassNK Technical Information TEC-1258]

The sampling analysis of individual BWMS should be conducted when BWM surveys, including verification of BWMS installation, are completed on or after 1 June 2022. It should be noted that even when the ship has a Statement of Fact on installation of BWMS, this requirement applies to those ships for which the date of completion of a BWMS survey under Regulation D-2 is on or after 1 June 2022.

1.1.8 Short-term measures for reduction of CHG

Entry into force: 11 November 2022

[Refer to ClassNK Technical Information TEC-1245, -1250]

[Efficiency Existing Ship Index(EEXI)]

Verification of EEXI for all ships of 400GT and above engaged in international voyages shall take place at the first annual, intermediate or renewal survey of the IAPP Certificate on or after 2023. If the attained EEXI value does not satisfy the required EEXI, the ship must implement measures to improve energy efficiency and satisfy the required EEXI.

[Operational Carbon Intensity Indicator (CII)]

Each ship of 5,000GT and above engaged in international voyage should calculate attained CII every year, based on the data of annual fuel consumption and annual distance travelled, which are collected under the Data Collection System for fuel oil consumption of ships (DOS). By the end of 2022, each ship should indicate on SEEMP, the calculation method of annual CII from the 2023 calendar year and reporting procedure of CII.

(Information on Ship Recycling:

<https://www.classnk.or.jp/hp/ja/activities/statutory/seemp/index.html>)

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	(https://www.parismou.org/)
<i>Asia-Pacific region</i>	: Tokyo MOU	(http://www.tokyo-mou.org/)
<i>Caribbean region</i>	: Caribbean MOU	(https://www.caribbeanmou.org/)
<i>Mediterranean region</i>	: Mediterranean MoU	(http://www.medmou.org/)
<i>Indian Ocean region</i>	: Indian Ocean MOU	(https://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	(https://www.riyadh-mou.org/)
<i>Latin American region</i>	: Latin American Agreement	(http://www.acuerdolatino.int.ar/) ^(*)

(*) This URL is not available now.

(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 23 July 2020

- Paris MoU announces the launch of a joint Concentrated Inspection Campaign (CIC) on Stability (in general) with Tokyo MOU from 1st September, ending 30 November 2021

Press release dated 4 October 2021

- Paris MoU to start sharing its inspection data with the public in bulk form

(2) Asia-Pacific region (Tokyo MOU)

Established: 1 December 1993

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

- 1. The main objectives of the Memorandum have been announced as
 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 releases dated 23 July 2021

- Tokyo MOU announces the launch of a joint Concentrated Inspection Campaign (CIC) on Stability (in general) with Paris MOU from 1st September, ending 30 November 2021

Press release dated 27 October 2021

- Tokyo MOU held its 32nd meeting remotely via virtual means from 21 to 22 October 2021
- Remote follow-up inspection procedure to be officially adopted and implemented from 1 January 2022; Guidelines for remote follow-up inspections also approved by the Committee
- Questionnaire and guidelines for the CIC with the Paris MOU on STCW approved in principle in 2022.
- Further discussion on preparations for joint CIC on Fire Safety in 2023 and Crew Wage and Seafarer Employment Agreement under MLC in 2024

Press release dated 16 February 2022

- Tokyo MOU announces preliminary results of the Concentrated Inspection Campaign (CIC) on Ship's Stability in General, which was conducted from 1 September to 30 November 2021
- During the course of the campaign, the member Authorities of Tokyo MOU carried out 4,984 CIC inspections and 8 ships were detained for CIC related deficiencies.

(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

(4) Caribbean region (Caribbean MOU)

Established: 9 February 1996

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

Associate member states: Anguilla, British Virgin islands

- According to the 2020 Annual Report of the Caribbean MOU, a total of 489 inspections were carried out (63% decrease year-on-year) and 7 vessels were detained in 2020.

(5) Mediterranean region (Mediterranean MoU)

Established: 11 July 1997

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

- According to the 2020 Annual Report of the Mediterranean MOU, a total of 3,667 inspections were carried out (32% decrease year-on-year) and 50 vessels were detained in 2020. The average detention rate in 2020 was 1.36%.

(6) Indian Ocean region (Indian Ocean MOU)

Established: 5 June 1998

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

- According to the 2021 Annual Report of the Indian Ocean MOU, a total of 4,993 inspections were carried out (5% increase year-on-year) and 198 vessels were detained in 2021. The detention percentage in 2021 was 3.97%, a decrease from 4.58% recorded in 2020.

(7) Black Sea region (Black Sea MOU)

Established: 7 April 2000

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

- 1. According to the 2021 Annual Report of the Black Sea MOU, a total of 5,624 inspections were carried out (1.70% decrease year-on-year) and 178 vessels were detained in 2021. The detention percentage in 2021 was 3.17%, a decrease from 4.21% recorded in 2020.
- 2. The Black Sea MOU announced the report of the Concentrated Inspection Campaign (CIC) on Stability in General, which was conducted from 1 September to 30 November 2021.

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

Established: 22 October 1999

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

(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

- According to the 2020 Annual Report of the Abuja MoU, a total of 1,842 inspections were carried out (42.55% decrease year-on-year) and 30 vessels were detained in 2020.

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. In the 1970's, the U.S. Coast Guard increased its emphasis on the examination of foreign vessels. Although this emphasis was primarily driven by requirements to ensure compliance with the then new U.S. pollution prevention and navigation safety regulations, boarding officers also exercised Port State authority when instances of non-compliance with SOLAS and MARPOL were noted. In 1994, the U.S. introduced risk-management methodologies into the Port State Control program in order to allocate limited inspection resources to where they could do the most good, by identifying those ships, ship owners, classification societies and Flag Administrations that were most often found lacking in meeting their international Convention responsibilities. On 1 January 2001, the USCG implemented an initiative to identify high-quality ships, called QUALSHIP 21, quality shipping for the 21st century. This program has since proven to be very effective in recognizing well operated and maintained ships of good quality and continues in use today. Further, on 1 July 2017, in addition to QUALSHIP 21, the program of E-ZERO (Zero Environmental Deficiencies or Violations) began. E-ZERO designation has been assigned with exemplary vessels that have consistently adhered to environmental compliance.

(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.

(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.

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

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 cooperates 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 are 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 applications

ClassNK has provided web and mobile services in order to support an improvement of PSC performance and ship management systems, which are “PrimeShip-PSC Intelligence” and “ARRIVAL CHECKLIST for PSC”.

i) 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. There is a PC version for management companies and a Mobile version for seafarers.

[Main Functions of the PC version]

- Easy visual checking of trends of typical deficiencies, deficiency items or deficiency categories at each port or country on world-map with AI technologies
- Output a pinpoint checklist based on the PSC's past records of selected ports or countries
- Analysis on the trend of deficiencies recorded on managing ships on a real-time basis through the managing company's input of PSC reports
- Output a summary report for PSC performance of managing ships
- Display requirements of the IMO international convention and local regulations applied on managing ships in a calendar format
- Provides timely PSC-related information that users should know as “NK Picks”.

[Main Functions of Mobile version]

- Converts PSC reports to digital data by manual input and by camera images captured by AI OCR.
- Chat capability on the PC version allows users to report the result of PSC inspection and/or equipment malfunctions to shore staff and work with them to resolve problems.
- Access to PSC and other checklists even in an offline environment.^(*)
- Shows the top 10 typical deficiencies for the past month in each country or port set by the user.^(*)
- Provides timely PSC-related information that users should know as “NK Picks”^(*)

(*) Coming Soon (as of end of May 2022)

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

A 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 in the system along with notes and photos
- Check results can be forwarded to companies easily
- The statistics and tendency of detentions in major ports can be confirmed
- Checklists and statistics are updated automatically as needed

(*): This application will be integrated into the above “PrimeShip-PSC Intelligence” in the near future.

(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 the ClassNK website below.

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

Twenty-two issues of the “ClassNK PSC Bulletin” were released as of June 2021. This bulletin provides timely information on particularly notable deficiencies pointed out during PSC inspections of NK classed ships and will be continuously provided to management companies.

1.3.3 Visits to PSC authorities

Designated 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. However, considering the circumstances due to the COVID-19 pandemic, ClassNK refrained from visiting PSC authorities in 2021, following 2020.

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.1138(31) "Procedure for Port State Control, and
- (2) Publications related to detained ships issued by the Tokyo MOU, the Paris MoU, and the USCG.

In 2021, 242 PSC detentions were reported for 234 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 8,545 at the end of December 2021. Therefore, the detention ratio (Detentions/Registered number in 2021) of the NK fleet in 2020 was about 2.8%.

2.2 Data on Detentions

2.2.1 Detentions per Flag State

Table 2.2.1 Detentions per Flag State

Flag State	Number of Registered Ships (500GT or over)			Number of Detentions			Detention Ratio (%)		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
Panama	3,058	3,052	2,950	211	127	112	6.9	4.2	3.8
Japan	983	967	981	4	2	2	0.4	0.2	0.2
Marshall Islands	679	717	807	28	29	28	4.1	4.0	3.5
Liberia	663	729	801	42	21	29	6.3	2.9	3.6
Singapore	719	710	717	11	13	8	1.5	1.8	1.1
Hong Kong, China	422	427	386	12	19	15	2.8	4.4	3.9
Malaysia	256	253	386	1	1	0	0.4	0.4	0.0
Bahamas	169	165	160	7	5	2	4.1	3.0	1.3
Malta	179	168	151	13	0	7	7.3	0.0	4.6
Viet Num	90	91	93	7	1	5	7.8	1.1	5.4
Cyprus	68	63	66	5	0	1	7.4	0.0	1.5
Thailand	75	65	64	5	2	2	6.7	3.1	3.1
Antigua and Barbuda	47	53	50	4	5	3	8.5	9.4	6.0
Cayman Islands	57	59	50	1	1	2	1.8	1.7	4.0
Turkey	55	54	49	0	1	2	0.0	1.9	4.1
Others	981	973	834	43	23	23	6.2	2.3	2.8
Total	8,501	8,546	8,545	394	250	242	4.6	2.9	2.8

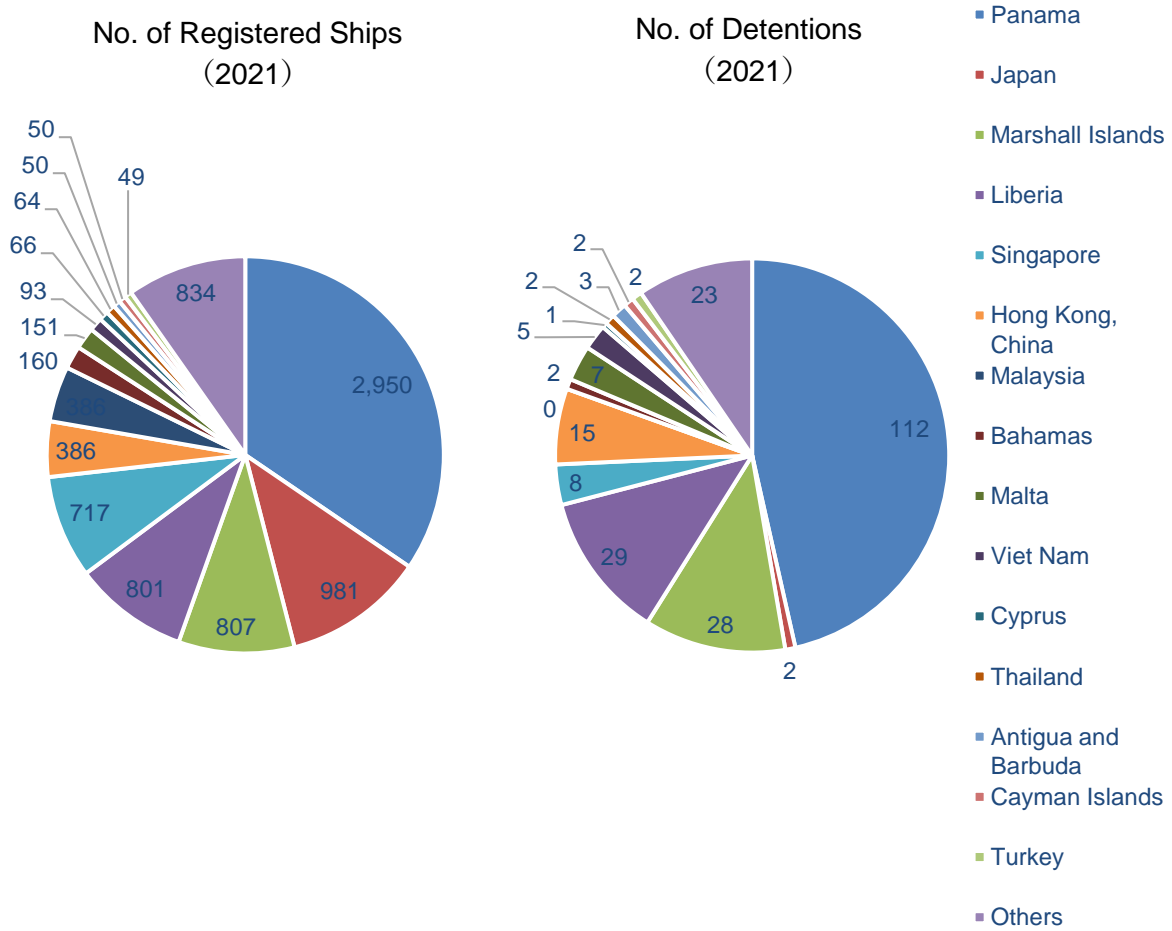


Fig. 2.2.1-1 No. of Resisted Ships & Detentions per Flag State

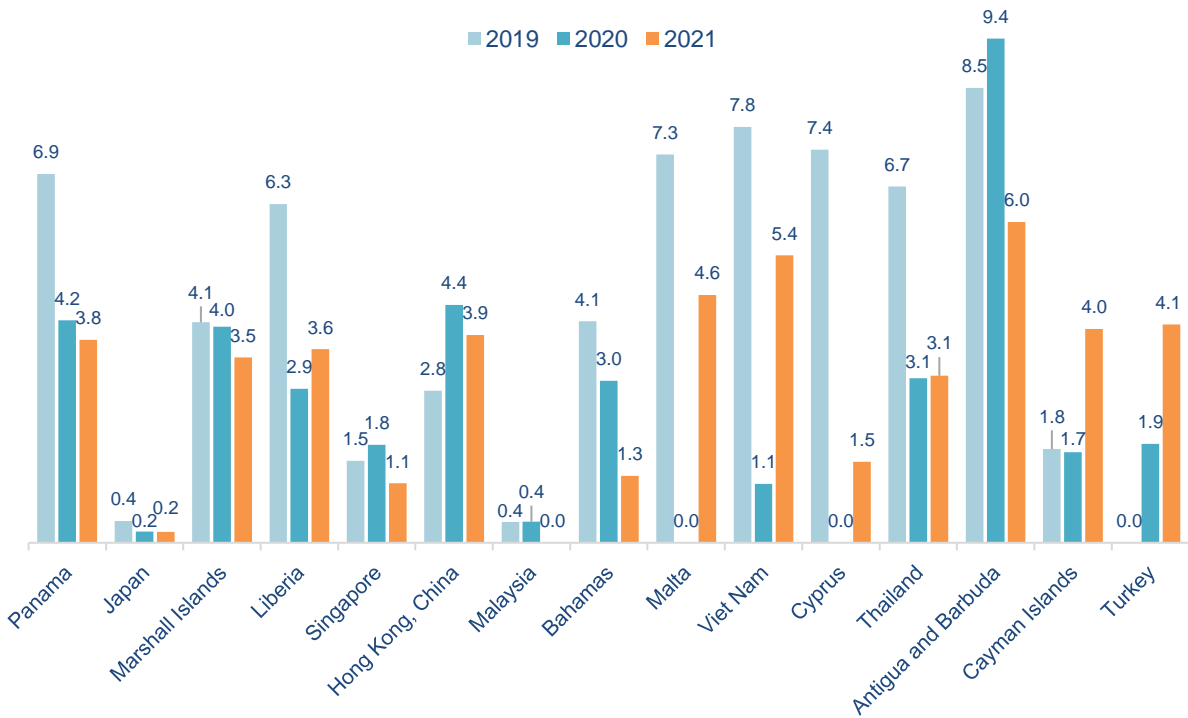


Fig. 2.2.1-2 Detention Ratio per Flag State (%)

2.2.2 Detentions per Ship Type

Table 2.2.2 Detentions per Ship Type

Ship Type	Number of Registered Ships (500GT or over)			Number of Detentions			Detention Ratio (%)		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
Bulk Carrier	3,826	3,946	3982	239	170	162	6.2	4.3	4.1
General Cargo	689	661	654	65	40	36	9.4	6.1	5.5
Container Carrier	605	607	643	30	9	12	5.0	1.5	1.9
Chip Carrier	118	117	124	3	4	2	2.5	3.4	1.6
Cement Carrier	125	123	124	1	1	0	0.8	0.8	0.0
Ro-Ro Ship	103	101	100	5	0	0	4.9	0.0	0.0
Vehicles Carrier	337	316	105	11	7	5	3.3	2.2	1.6
Reefer Carrier	109	108	308	6	0	5	5.5	0.0	4.8
Oil Tanker	707	696	659	7	1	2	1.0	0.1	0.3
Oil/Chemical Tanker	766	783	787	21	13	13	2.7	1.7	1.7
Gas Carrier	401	405	400	3	3	1	0.7	0.7	0.3
Others	715	683	659	3	2	3	0.4	0.3	0.5
Total	8,501	8,546	8545	394	250	242			

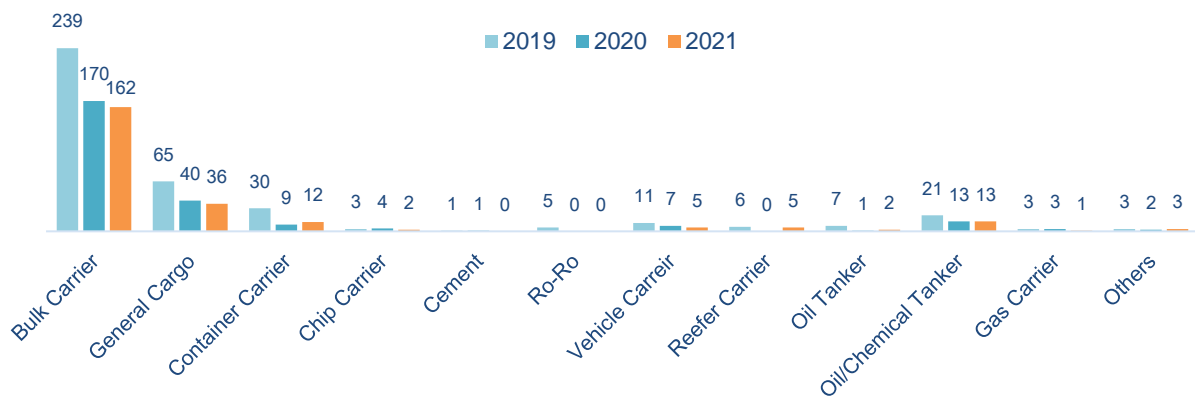


Fig. 2.2.2-1 No. of Detentions per Ship Type

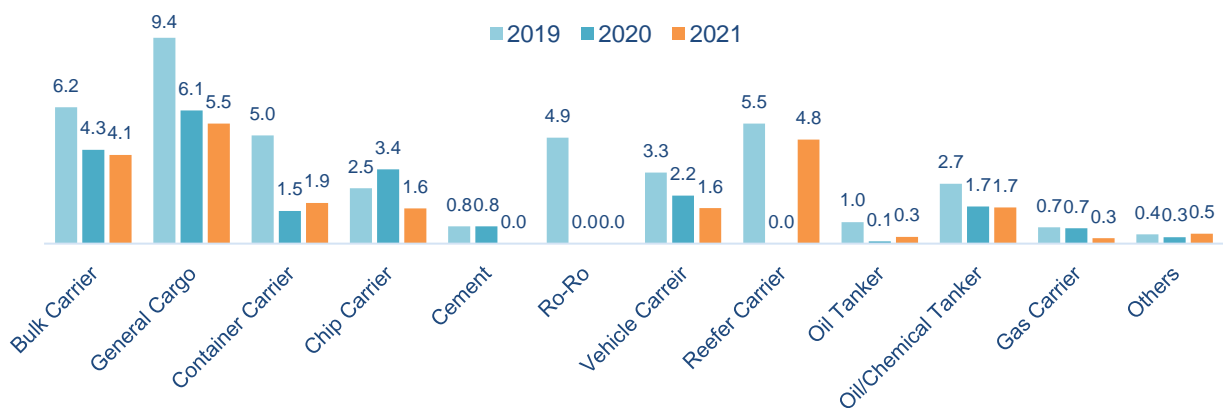


Fig. 2.2.2-2 Detention Ratio per Ship Type (%)

2.2.3 Detentions per Ship's Age

Table 2.2.3 Detentions per Ship's Age

Ship's Age	Number of Registered Ships (500GT or over)			Number of Detentions			Detention Ratio (%)		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
Up to 5 years old	2,271	2,157	2,034	24	18	10	1.1	0.8	0.5
Over 5 and up to 10	2,515	2,476	2,367	95	65	51	3.8	2.6	2.2
Over 10 and up to 15	1,794	2,004	2,127	103	79	76	5.7	3.9	3.6
Over 15 and up to 20	870	877	1,009	66	42	42	7.6	4.8	4.2
Over 20 and up to 25	716	693	653	76	33	36	10.6	4.8	5.5
Over 25	335	339	355	30	13	26	9.0	3.8	7.3
Total	8,501	8,546	8,545	394	250	242			

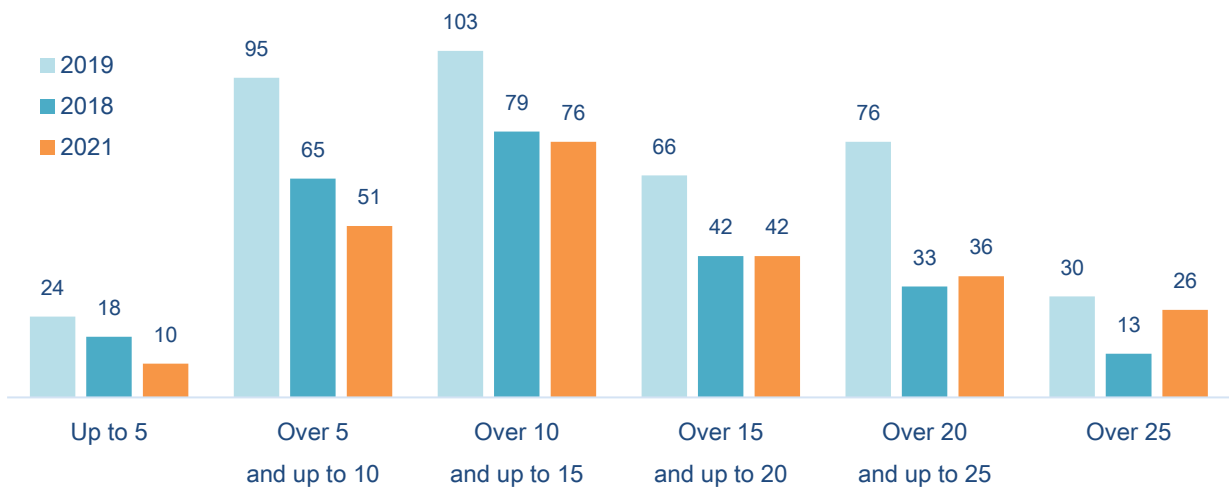


Fig. 2.2.3-1 No. of Detentions per Ship's Age

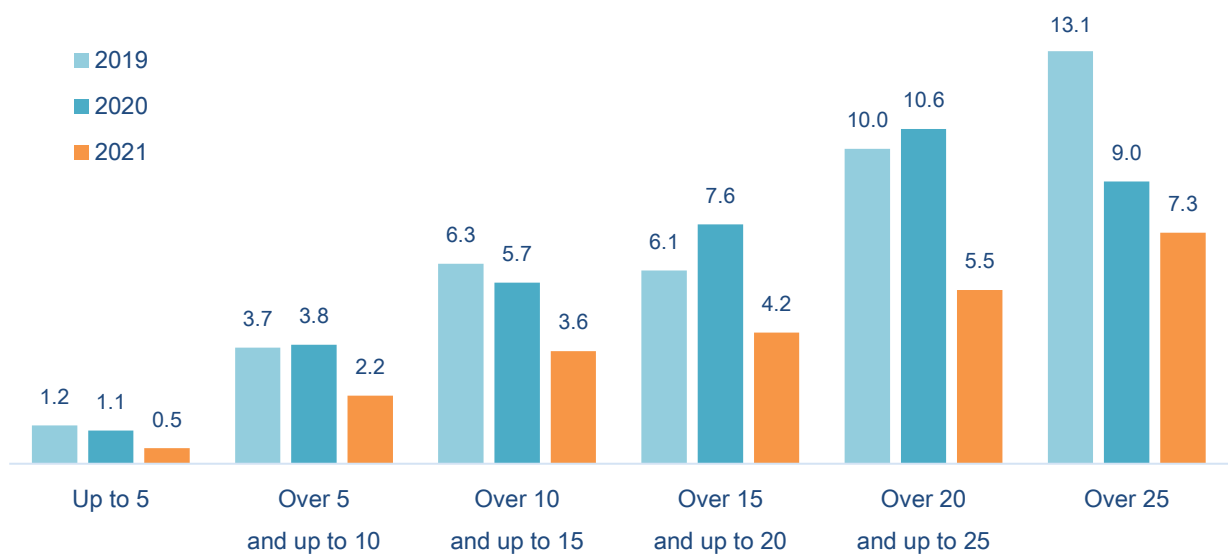


Fig. 2.2.3-2 Detention Ratio per Ship's Age (%)

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 (500GT or over)			Number of Detentions			Detention Ratio (%)		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
Up to 10	2,637	2,556	44	94	53	44	3.6	2.1	1.8
Over 10 and up to 20	1,283	1,263	54	95	50	54	7.4	4.0	4.3
Over 20 and up to 30	1,131	1,150	61	68	42	61	6.0	3.7	5.2
Over 30 and up to 40	1,358	1,412	39	77	49	39	5.7	3.5	2.7
Over 40 and up to 50	822	884	19	23	26	19	2.8	2.9	2.0
Over 50 and up to 60	298	297	10	5	9	10	1.7	3.0	3.4
Over 60 and up to 80	200	199	1	3	0	1	1.5	0.0	0.5
Over 80	772	785	13	29	21	13	3.8	2.7	1.7
Total	8,501	8,546	241	394	250	242			

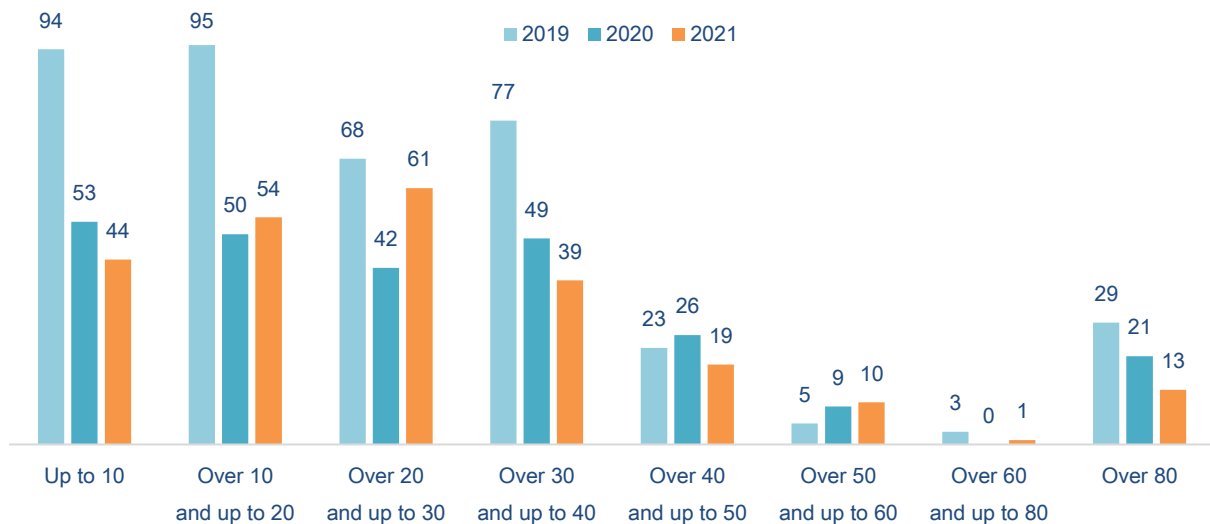


Fig. 2.2.4-1 No. of Detentions per Ship Size (Gross Tonnage)

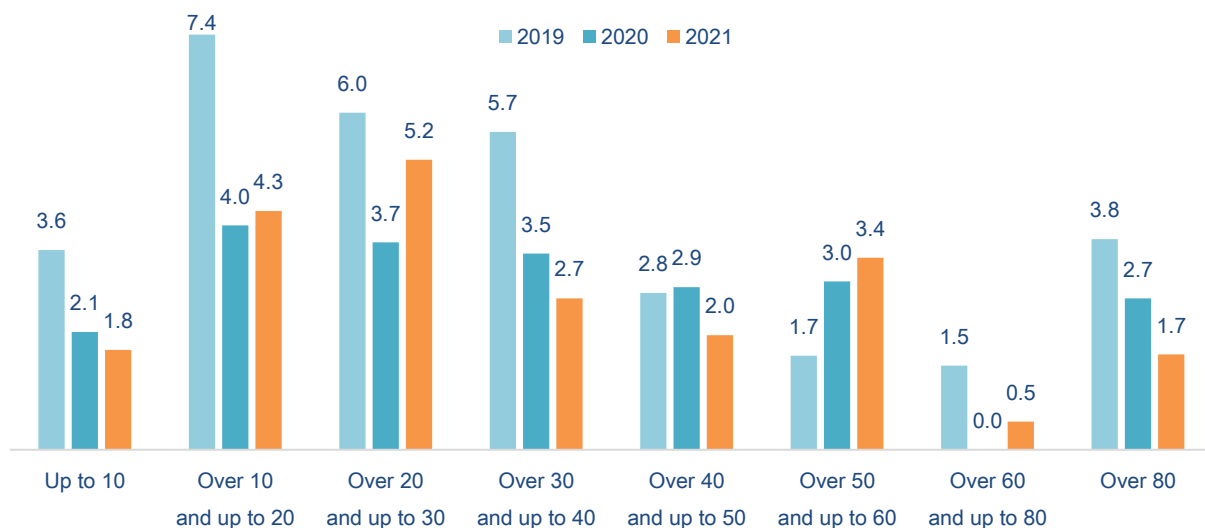


Fig. 2.2.4-2 Detention Ratio per Ship Size (Gross Tonnage) (%)

2.2.5 Detentions per PSC Country

Table 2.2.5 No. of Detentions per PSC Country

Country	2019	2020	2021
Australia	61	66	44
Russia	36	35	33
Indonesia	31	17	22
China	120	9	18
Italy	7	3	12
Belgium	6	11	9
United States(*)	16	9	8
Canada	7	10	8
Saudi Arabia	5	6	8
United Kingdom	7	1	7
Germany	2	6	7
Japan	12	10	6
Korea	6	11	6
Turkey	8	4	5
Poland	3	0	4
Argentina	3	1	3
Spain	3	0	3
France	2	3	3
United Arab Emirates	0	1	3
Greece	3	3	2
Ireland	3	2	2
Bangladesh	1	1	2
Iran	1	1	2
Malta	1	0	2
Ukraine	4	18	1
Others	46	22	22
Total	394	250	242

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

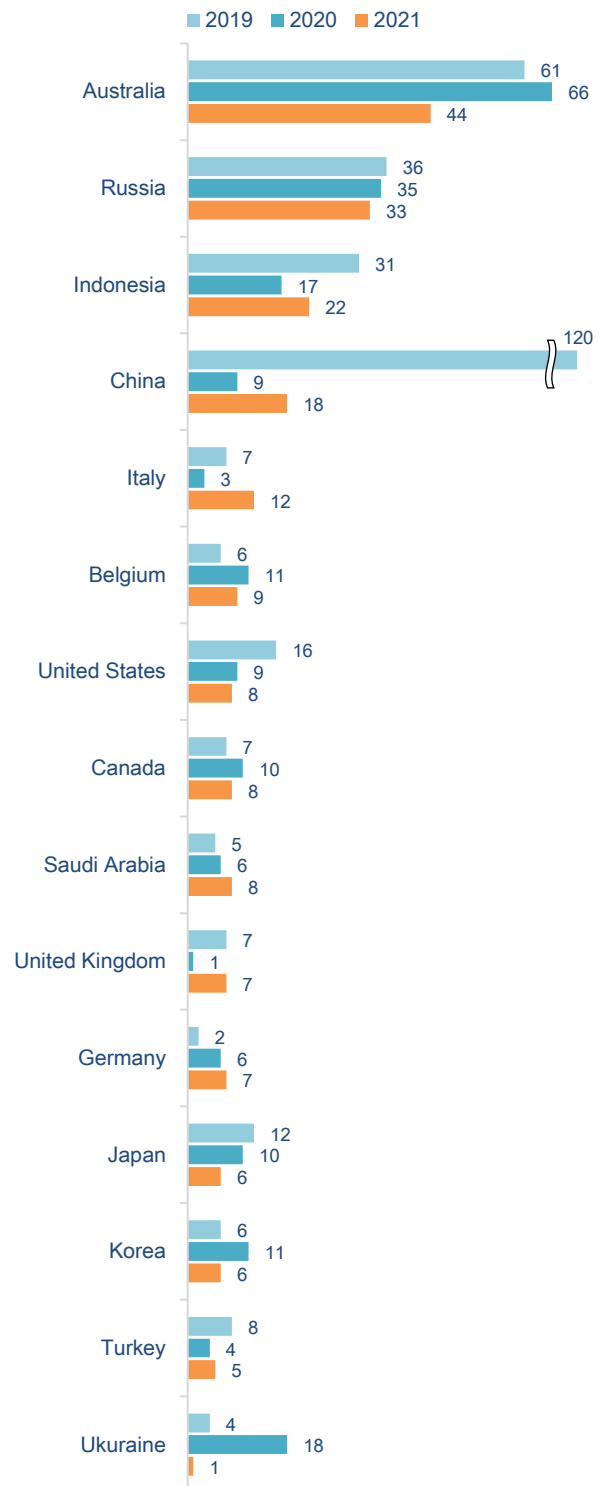


Fig. 2.2.5 No. of Detentions per PSC Country

2.2.6 Detentions per MOUs and USCG

Table 2.2.6 No. of Detentions per MOUs and USCG

Region	No. of Inspections ^(*)			No. of Detentions			Detentions Ratio		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
Tokyo MOU	12,506	6,489	6,943	265	142	111	2.12	2.19	1.60
Paris MoU	2,318	1,709	2,114	56	44	67	2.42	2.63	3.13
USCG	2,456	1,875	2,660	18	10	7	0.73	0.53	0.26
Total	17,280	339	1.96	339	197	242	1.96	1.96	1.57

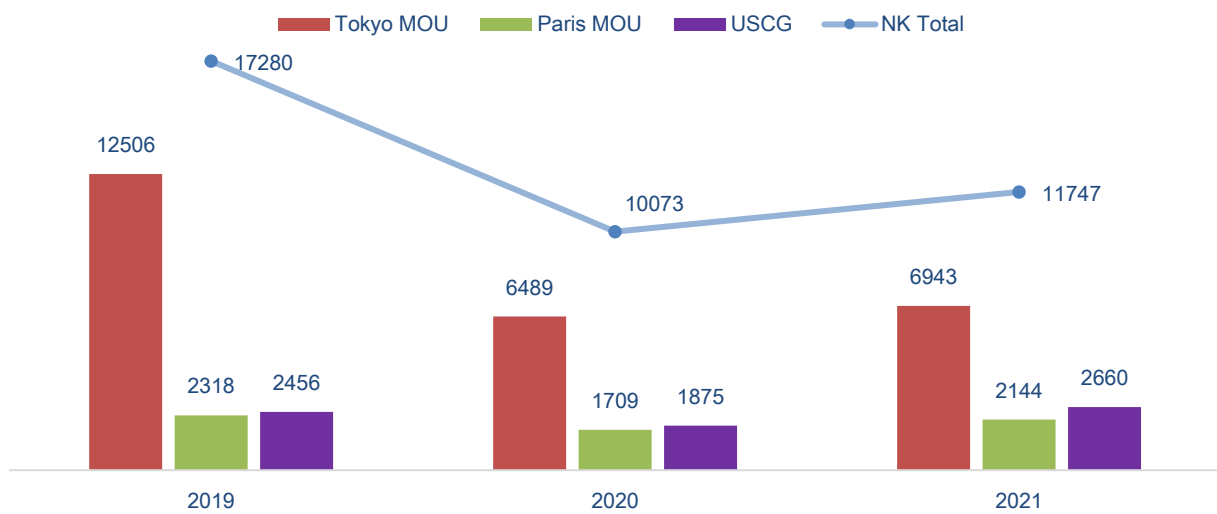


Fig. 2.2.6-1 No. of Inspections per MOUs and USCG

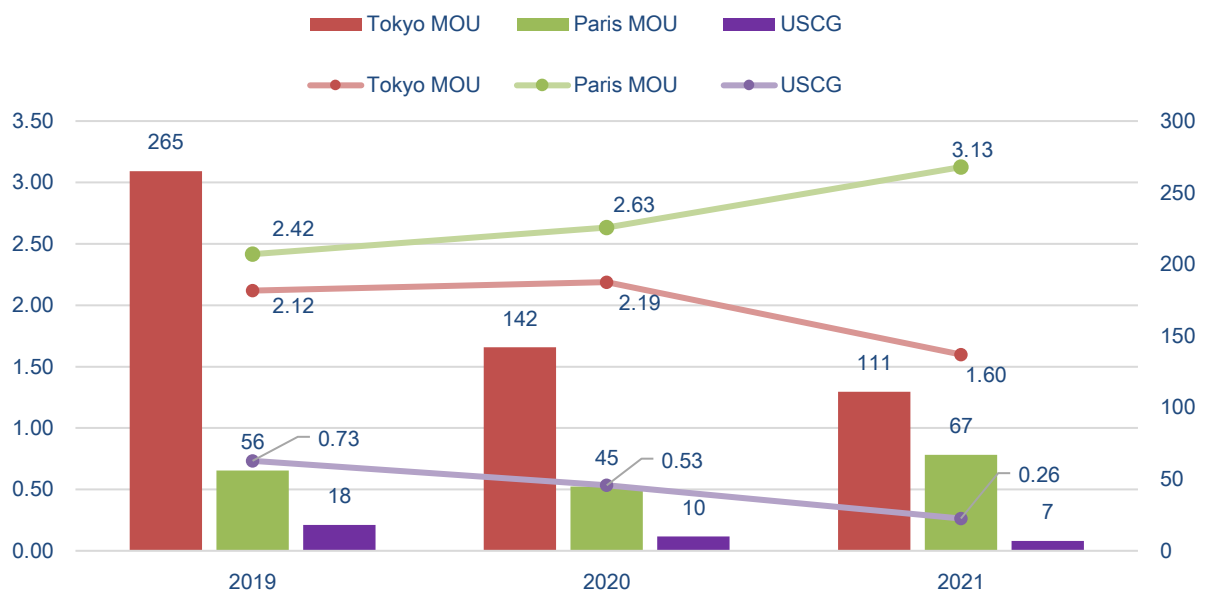


Fig. 2.2.6-2 No. of Detentions and Detention ratio per MOUs and USCG

2.3 Analysis of Detainable Deficiencies

2.3.1 Detainable Deficiencies per Category

In 2021 a total of 821 detainable deficiencies were reported relating to 242 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 Safety Navigation combined accounted for about 30% of the total. When the deficiencies related to Emergency Systems and Life-saving appliances are added to the above total, they account for about half of the total number of deficiencies in 2021.

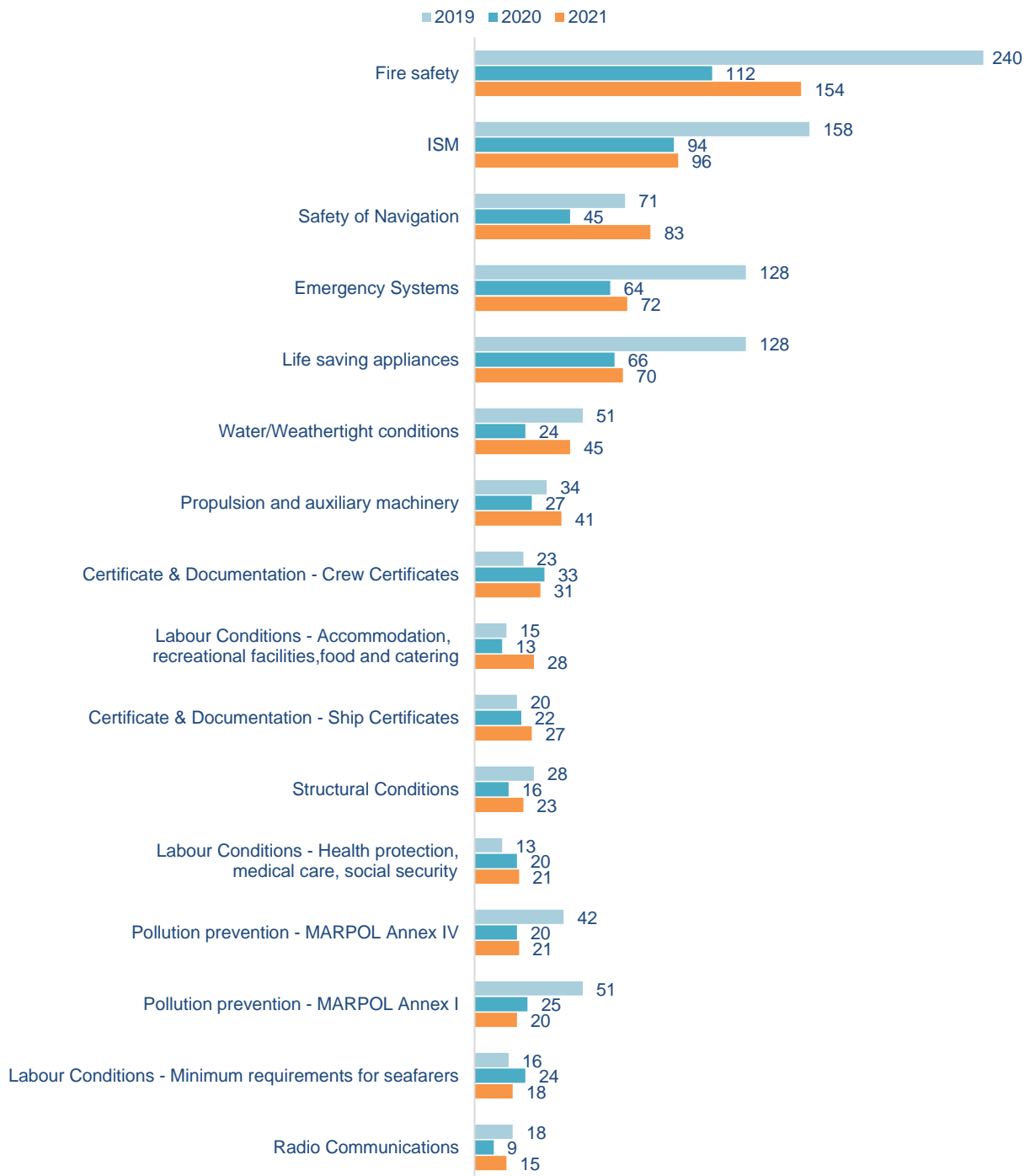


Fig. 2.3.1 No. of Detainable Deficiencies per Category

2.3.2 Detainable Deficiencies per Defective item

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. ISM, Lifeboat, and Fire doors/openings in fire-resisting divisions continue to be the major items where most detainable deficiencies were found. The items reported from 2019 to 2021 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.)

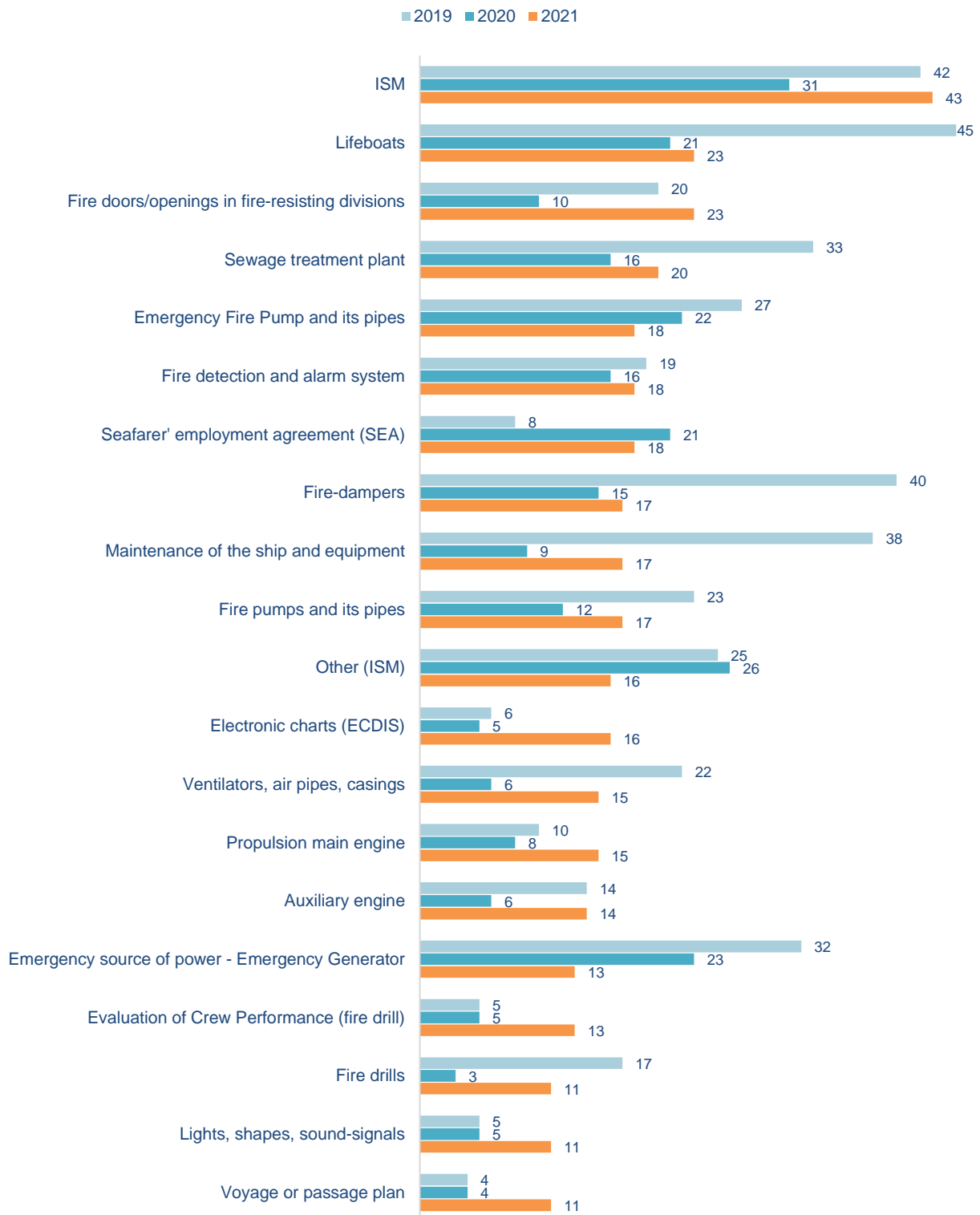


Fig. 2.3.2 No. of Detainable Deficiencies per defective item

(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	2019	2020	2021	Noted Deficiencies
Fire doors/openings in fire-resisting divisions	20	10	23	Fire doors don't close properly (by self-closing device), fitting of hold-back system, Wasted/missing gasket
Fire detection and alarm system	19	16	18	Malfunction of fire detector, covered detection sensor with plastic bag, control panel displaying abnormal reading
Fire pumps and its pipes	23	12	17	Malfunction of fire pump (incl. for emergency) wasted/holed/leaking fire main line
Fire-dampers	40	15	17	Wasted/inoperable fire-dampers
Evaluation of Crew Performance (fire drill)	5	5	13	Not familiar with operation/procedure/assigned duty
Fixed fire extinguishing installation	29	10	9	Wasted/corroded/holed piping line, disconnected hoses for CO2 system

(2) ISM related deficiencies

For details of deficiencies, refer to Chapter 3.

(3) Safety of Navigation

Major types and details of deficiencies noted under the category of “Safety of Navigation” are shown in Table 2.3.2-(3) below.

Table 2.3.2-(3) Safety of Navigation

Item	2019	2020	2021	Noted Deficiencies
Electronic charts (ECDIS)	6	5	16	ENC not updated
Lights, shapes, sound-signals	5	5	11	Navigation lights damaged (glass cracked, cover wasted, etc.)
Voyage or passage plan	4	4	11	Local conditions/information not available onboard, not confirmed with ECDIS, chart missing
Voyage data recorder (VDR / S-VDR)	10	5	8	Malfunction
Nautical publications	10	7	8	Nautical publications (Sailing Directions, Notice to Mariners, etc.) for intended voyage not updated/not available
Charts	16	8	6	Not updated Navigation charts for engaged/intended voyage not available

(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	2019	2020	2021	Noted Deficiencies
Emergency fire pump and its pipes	27	22	18	Inoperable Insufficient discharge pressure
Emergency source of power - emergency generator	32	23	13	Emergency generator unable to start with second mean of starting, emergency generator unable to automatically connect to emergency switchboard
Fire drills	17	13	11	Not familiar with operation/procedure/assigned duty
Emergency lighting, batteries and switches	20	7	9	Week/abnormal batteries Inoperative/wasted/damaged emergency lights
Abandon ship drills	20	7	7	Not familiar with operation/procedure/assigned duty
Water level indicator	12	1	6	Malfunction of water ingress alarm system in cargo holds

(5) Life Saving Appliances

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

Table 2.3.2-(5) Life Saving Appliances

Item	2019	2020	2021	Noted Deficiencies
Lifeboats	45	21	23	Lifeboat engine not started Poor maintenance of rechargeable batteries Inoperable on-load release gears
Rescue boats	16	10	9	Rescue boat engine not started Poor maintenance of rechargeable batteries
Launching arrangements for rescue boats	8	4	6	Inoperable on-load release gear, poor maintenance, not familiar with operation
Operational readiness of lifesaving appliances	8	7	5	On-load release systems not reset Inadequate pressure of hydraulic accumulator
Embarkation arrangements for survival craft	12	1	4	Poor condition of embarkation ladder, embarkation lights broken/burned out
Immersion suits	1	4	3	Unsuitable size, poor condition

(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	2019	2020	2021	Noted Deficiencies
Ventilators, air pipes, casings	22	6	15	Corroded/seized flaps/covers of ventilators and float of air pipe heads
Hatch covers Cargo and other hatchways	15	8	14	Hatch covers wasted/corroded/holed Cleats wasted/missing Rubber packing missing/wasted
Doors	6	2	9	Corroded/wasted, Not properly closed

(7) Propulsion and auxiliary machinery

Major types and details of deficiencies noted under the category of “Propulsion and auxiliary machinery” are shown in Table 2.3.2-(7) below.

Table 2.3.2-(7) Propulsion and auxiliary machinery

Item	2019	2020	2021	Noted Deficiencies
Propulsion main engine	10	8	15	Oil/cooling water leakage Instruments inoperative
Auxiliary engine	14	14	6	Inoperable auxiliary engines, oil leakage
Bilge pumping arrangements	1	3	4	Instruments inoperable Suction valve seized/secured

(8) Crew Certificate

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

Table 2.3.2-(8) Crew Certificates

Item	2019	2020	2021	Noted Deficiencies
Seafarers' employment agreement (SEA)	8	21	18	Contract expired, unsuitable contract, continuously employed on board for long period
Manning specified by the minimum safe manning doc	1	1	3	Number and qualification not in accordance with the safe manning document

(9) 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-(9) below.

Table 2.3.2-(9) Labour Conditions-Accommodation, recreational facilities, food and catering

Item	2019	2020	2021	Noted Deficiencies
Sanitary facilities	5	1	6	Shower/toilet unavailable/damaged/dirty
Cold room, cold room cleanliness, cold room temperature	1	1	5	Dirty, inappropriate temperature control, floor/instruments covered by float
Provisions quantity	1	2	4	Quantity/variety not sufficient for intended voyage, quantity of fresh food not sufficient

(10) Ship Certificates

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

Table 2.3.2-(10) Ship Certificates

Item	2019	2020	2021	Noted Deficiencies
Cargo Ship Safety Equipment (including Exemption)	1	2	6	Expired, conditional/short term certificate not presented onboard
Cargo ship safety construction (including exemption)	3	2	3	Expired

(11) Structural Conditions

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

Table 2.3.2-(11) Structural Conditions

Item	2018	2019	2020	Noted Deficiencies
Ballast, fuel and other tanks	5	2	4	Emergency shut off valves of oil tanks inoperative
Electrical installations in general	2	3	3	Batteries not secured
Hull damage impairing seaworthiness	1	4	3	Hull structure dented/holed
Steering gear	8	9	2	Malfunction

(12) Labour Conditions - Health protection, medical care, social security

Major types and details of deficiencies noted under the category of “Labour Conditions - Health protection, medical care, social security” are shown in Table 2.3.2-(12) below.

Table 2.3.2-(12) Labour Conditions - Health protection, medical care, social security

Item	2019	2020	2021	Noted Deficiencies
Winches and capstans	1	1	3	Wasted/corroded
Cleanliness of engine room	5	3	3	Oil stain
Access/ structural features (ship)	1	1	3	Accommodation ladders/gangway/vertical ladder wasted/corroded

(13) MARPOL Annex IV

Major types and details of deficiencies noted under the category of “MARPOL Annex IV” are shown in Table 2.3.2-(13) below.

Table 2.3.2-(13) MARPOL Annex IV

Item	2019	2020	2021	Noted Deficiencies
Sewage treatment plant	33	16	20	Inoperative (including blower)

(14) MARPOL Annex I

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

Table 2.3.2-(14) MARPOL Annex I

Item	2019	2020	2021	Noted Deficiencies
15 PPM alarm	21	24	6	Oil content meter / 15PPM alarm inoperable Ship’s crew not familiar with operation
Oil filtering equipment / Oil discharge Monitoring and control system	2	4	5	Oil water separator malfunction

(15) Labour Conditions – Minimum requirements for seafarers

Major types and details of deficiencies noted under the category of “Labour Conditions – Minimum requirements for seafarers” are shown in Table 2.3.2-(15) below.

Table 2.3.2-(15) Minimum requirements for seafarers

Item	2019	2020	2021	Noted Deficiencies
Wages	13	11	10	Unpaid wages (including for overtime work), not as per collective bargain agreement
Other (conditions of employment)	0	6	5	Employed onboard for long period

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 2018 to 2020. (Regarding details of deficiencies related to ISM and MLC, refer to Chapter 3 and Chapter 4.)

2.4.1 Australia

Table 2.4.1 Australia

Category of Detainable Deficiency	2019	2020	2021
ISM ^(*)	20	24	16
Life saving appliances	15	20	13
Emergency systems	17	13	6
Fire safety	12	11	6
Water/weathertight conditions	4	9	4
Labour conditions - minimum requirements for seafarers	4	4	3

Defective Items	2019	2020	2021
Other (ISM)	8	14	6
Lifeboats	6	8	3
Shipboard operations	4	3	4
Maintenance of the ship and equipment	3	5	4
Operational readiness of lifesaving appliances	5	5	4
Emergency fire pump and its pipes	5	5	4
Fire-dampers	11	4	3
Ventilators, air pipes, casings	1	3	3
Fire pumps and its pipes	1	6	2
Emergency source of power - emergency generator	11	8	2
Rescue boats	3	4	2

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

A total of 62 detainable deficiencies relating to 44 detentions were noted in 2021.
(1.4 detainable deficiencies/detentions)

2.4.2 Russia

Table 2.4.2 Russia

Category of Detainable Deficiency	2019	2020	2021
Safety of navigation	23	19	29
Emergency systems	17	17	17
Fire safety	25	13	12
Water/Weathertight conditions	5	2	8
Life saving appliances	15	7	8
Propulsion and auxiliary machinery	1	6	7
ISM	20	8	7

Defective Items	2019	2020	2021
Electronic charts (ECDIS)	3	3	8
Lights, shapes, sound-signals	0	3	7
Emergency lighting, batteries and switches	6	5	6
Other (ISM)	4	7	6
Emergency fire pump and its pipes	5	7	4
Lifeboats	2	3	3
Fire detection and alarm system	8	4	3
Nautical publications	4	4	3

A total of 110 detainable deficiencies relating to 33 detentions were noted in 2021.
(3.3 detainable deficiencies/detentions)

2.4.3 Indonesia

Table 2.4.3 Indonesia

Category of Detainable Deficiency	2019	2020	2021
Fire safety	16	7	11
Pollution prevention - MARPOL Annex IV	12	8	9
ISM	6	8	5
Pollution prevention - MARPOL Annex V	4	2	4
Structural Conditions	0	0	3
Emergency systems	10	7	2
Life saving appliances	8	5	2

Defective Items	2019	2020	2021
Sewage treatment plant	10	6	9
Fire detection and alarm system	0	1	4
Fire-dampers	11	2	4
Garbage management plan	0	1	4

A total of 47 detainable deficiencies relating to 22 detentions were noted in 2021.
(2.1 detainable deficiencies/detentions)

2.4.4 China

Table 2.4.4 China

Category of Detainable Deficiency	2019	2020	2021
Safety of navigation	14	2	8
ISM	37	14	4
Propulsion and auxiliary machinery	8	0	4
Certificate & Documentation - Ship Certificates	5	1	3
Certificate & Documentation Documents	1	0	2
Fire safety	90	3	2
Emergency systems	40	2	2

Defective Items	2019	2020	2021
Propulsion main engine	2	0	4
Lights, shapes, sound-signals	3	0	2
Voyage data recorder (VDR)/Simplified Voyage date recorder (S-VDR)	4	0	2
Bridge operation	2	0	2
Hull damage impairing seaworthiness	1	0	2
Fire detection and alarm system	3	0	2
15 PPM Alarm arrangements	2	0	2
Records of rest	0	0	2

A total of 23 detainable deficiencies relating to 18 detentions were noted in 2021. (1.3 detainable deficiencies/detentions)

2.4.5 Italy

Table 2.4.5 Italy

Category of Detainable Deficiency	2019	2020	2021
Fire safety	12	4	20
Safety of navigation	3	2	13
ISM	6	3	8
Certificate & Documentation - Crew Certificates	1	3	7
Life saving appliances	0	1	6
Emergency Systems	10	5	5
Certificate & Documentation - Ship Certificates	6	6	4
Labour Conditions – Accommodation, recreational facilities, food and catering	5	1	4

Defective Items	2019	2020	2021
ISM	6	3	8
Evaluation of Crew Performance (fire drill)	0	0	4
Seafarer employment agreement (SEA)	1	0	3
Bridge operation	0	0	3
Fire fighting equipment and appliances	12	0	3
Atmosphere testing instruments	0	1	3

A total of 86 detainable deficiencies relating to 12 detentions were noted in 2021. (7.2 detainable deficiencies/detentions)

2.4.6 Belgium

Table 2.4.6 Belgium

Category of Detainable Deficiency	2019	2020	2021
Fire safety	9	22	10
ISM	5	8	8
Certificate & documentation - crew certificates	5	10	6
Safety of navigation	2	7	6
Emergency systems	3	3	4
Certificate & Documentation Documents	1	0	3
Life saving appliances	8	2	3
Pollution prevention - Ballast Water	0	0	3

Defective Items	2019	2020	2021
ISM	5	8	8
Seafarer employment agreement (SEA)	5	9	6
Fire detection and alarm system	1	4	2
Fire drills	0	0	2
Electronic charts (ECDIS)	0	0	2

A total of 55 detainable deficiencies relating to 12 detentions were noted in 2021.
(5.0 detainable deficiencies/detentions)

2.4.7 United States

Table 2.4.7 United States^(*)

Category of Detainable Deficiency	2019	2020	2021
Fire safety	12	17	11
ISM	21	7	7
Structural conditions	3	2	2

Defective Items	2019	2020	2021
ISM	21	7	7
Fire doors/openings in fire-resisting divisions	0	0	3
Oil accumulation in engine room	3	11	2
Immersion suits	1	0	2

(^{*}): Including Guam, Puerto Rico

A total of 26 detainable deficiencies relating to 8 detentions were noted in 2021.
(3.3 detainable deficiencies/detentions)

2.4.8 Canada

Table 2.4.8 Canada

Category of Detainable Deficiency	2019	2020	2021
Labour Conditions - Minimum requirements for seafarers	0	0	9
Certificate & documentation - crew certificates	0	2	6
Structural Conditions	0	0	3
Fire safety	3	1	3
ISM	2	3	3

Defective Items	2019	2020	2021
Wages	0	0	7
Seafarer employment agreement (SEA)	0	2	5
ISM	2	2	3
Legal documentation on work and rest hours	0	0	2

A total of 16 detainable deficiencies relating to 8 detentions were noted in 2021.
(2.0 detainable deficiencies/detentions)

2.4.9 Saudi Arabia

Table 2.4.9 Saudi Arabia

Category of Detainable Deficiency	2019	2020	2021
Fire safety	1	0	4
Emergency Systems	1	0	3
Pollution prevention - MARPOL Annex I	0	2	3

Defective Items	2019	2020	2021
Fire pumps and its pipes	1	0	2
Water level indicator	0	0	2
Oil Water Separator and associated apparatus (Including 15PPM alarm)	0	0	3

A total of 16 detainable deficiencies relating to 8 detentions were noted in 2021.
(2.0 detainable deficiencies/detentions)

2.4.10 United Kingdom

Table 2.4.10 United Kingdom

Category of Detainable Deficiency	2019	2020	2021
Fire safety	3	0	7
ISM	6	1	5
Emergency Systems	2	0	2

Defective Items	2019	2020	2021
Evaluation of crew performance (fire drill)	0	0	5
ISM	6	1	5

A total of 18 detainable deficiencies relating to 7 detentions were noted in 2021.
(2.6 detainable deficiencies/detentions)

2.4.11 Germany

Table 2.4.11 Germany

Category of Detainable Deficiency	2019	2020	2021
Fire safety	6	8	30
Labour conditions - accommodation, recreational facilities, food and catering	2	5	16
Water/weathertight conditions	1	4	11
Life saving appliances	0	4	10
Emergency Systems	0	0	8
Pollution prevention - MARPOL Annex IV	0	4	5
ISM	2	3	5
Labour conditions - health protection, medical care, social security	2	5	3

Defective Items	2019	2020	2021
Fire doors/openings in fire-resisting divisions	1	0	7
Sewage treatment plant	0	3	5
ISM	2	3	5
Sanitary facilities	0	1	4
Cold room, cold room cleanliness, cold room temperature	1	1	4
Fire pumps and its pipes	0	0	3
Remote means of control (opening, pumps, ventilation, etc.) machinery spaces	1	0	3
Fire-dampers	1	1	3
Means of escape	0	0	3
Evaluation of crew performance (fire drill)	0	1	3
Doors	1	1	3
Emergency fire pump and its pipes	0	1	3
Lifeboats	0	1	3

A total of 97 detainable deficiencies relating to 7 detentions were noted in 2021.
(13.9 detainable deficiencies/detentions)

2.4.12 Japan

Table 2.4.8 Japan

Category of Detainable Deficiency	2019	2020	2021
Fire safety	5	2	4
Certificate & documentation - crew certificates	1	3	1
Labour conditions - minimum requirements for seafarers	2	3	1

Defective Items	2019	2020	2021
Fixed fire extinguishing installation	3	2	2
Fire-dampers	0	0	2
Seafarer employment agreement (SEA)	0	2	1
Other (conditions of employment)	0	2	1

A total of 6 detainable deficiencies relating to 6 detentions were noted in 2021.
(1.0 detainable deficiencies/detentions)

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 91.0% of the NK SMC ships.

Table 3.1 Number of NK SMC Ships (per Class)

Classification	2019		2020		2021	
	No.	%	No.	%	No.	%
NK class	5,116	90.0%	5,220	90.4%	5,188	91.0%
Other class	569	10.0%	554	9.6%	511	9.0%
Total	5,685		5,774		5,699	

Note: The number is one of ships engaged in international voyages including under 500 gross tonnage

3.2 Statistics of Detentions of NK SMC Ships

In 2021, the total number of the detentions of NK SMC ships was 175, which was 3.1% of all NK SMC ships, or 5,669(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	2019			2020			2021		
	(I)	(II)	(III)	(I)	(II)	(III)	(I)	(II)	(III)
Bahamas	4	116	3.4%	5	114	4.4%	2	105	1.9%
Cyprus	5	61	8.2%	0	61	0.0%	1	60	1.7%
Hong Kong	13	382	3.4%	18	374	4.8%	15	355	4.2%
Japan	4	320	1.3%	2	309	0.6%	2	309	0.6%
Liberia	27	434	6.2%	15	471	3.2%	16	509	3.1%
Malta	8	151	5.3%	2	152	1.3%	7	137	5.1%
Marshall Islands	28	564	5.0%	22	595	3.7%	24	654	3.7%
Panama	135	2,548	5.3%	94	2,490	3.8%	85	2,430	3.5%
Singapore	8	590	1.4%	11	608	1.8%	7	641	1.1%
Thailand	3	75	4.0%	1	68	1.5%	2	61	3.3%
Other Flag	18	444	4.1%	11	532	2.1%	14	438	3.2%
Total	253	5,685	4.5%	181	5,774	3.1%	175	5,699	3.1%

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	2019			2020			2021		
	(I)	(II)	(III)	(I)	(II)	(III)	(I)	(II)	(III)
Bulk Carrier	162	2,500	6.5%	128	2,551	5.0%	116	2,253	5.1%
Other Cargo Ship	72	2,002	3.6%	42	1,995	2.1%	45	1,805	2.5%
*Chemical Tanker	12	544	2.2%	5	573	0.9%	8	573	1.4%
Oil Tanker	6	370	1.6%	3	372	0.8%	5	801	0.6%
Gas Carrier	1	268	0.4%	3	282	1.1%	1	266	0.4%
MODU	0	1	0.0%	0	1	0.0%	0	1	0.0%
Passenger Ship	0	0	0.0%	0	0	0.0%	0	0	0.0%
High Speed Craft	0	0	0.0%	0	0	0.0%	0	0	0.0%
Total	253	5,685	4.5%	181	5,774	3.1%	175	5,699	3.1%

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, “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	2019			2020			2021			
	(I)	(II)	(III)	(I)	(II)	(III)	(I)	(II)	(III)	
Australia	15	53	28.3%	25	62	40.3%	16	40	40.0%	
China	23	70	32.9%	3	5	60.0%	3	12	25.0%	
Indonesia	2	19	0.0%	6	12	50.0%	4	18	22.2%	
Russia	6	21	28.6%	7	21	33.3%	5	24	20.8%	
USA	9	14	64.3%	5	7	71.4%	6	7	85.7%	
EU	Belgium	4	4	100%	7	8	87.5%	7	8	87.5%
	Italy	4	4	100%	2	2	100%	3	6	50.0%
	UK	5	5	100%	1	1	100%	3	3	100%
	Other Members	12	17	70.6%	10	14	71.4%	11	21	52.4%
Other Countries	16	46	34.8%	14	49	28.6%	10	36	27.8%	
Total	96	253	37.9%	80	181	44.2%	68	175	38.9%	

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 Study of ISM Detainable Deficiencies

This clause introduces studies of ISM detainable deficiencies recorded in Australia, Belgium and USA which are top 3 countries of the number of ISM detention cases in 2021 and a part of objective evidences of the ISM detention by each country.

Deficiency Codes of ISM deficiencies specified by Tokyo MOU which Australia participates in and USCG which USA organizes are as following table 3.3. Also, a deficiency code of ISM deficiencies specified by Paris MOU which Belgium participates in is an only “15150 - ISM”.

Table 3.3 Deficiency Code per ISM Code Element (Tokyo MOU and 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
15113	-	Other (ISM) (for USCG)
15199	-	Other (ISM) (for TOKYO MOU)

Deficiency Code per ISM Code Element (Paris MOU)

Def. Code	Defective Item
15150	ISM

3.3.1 Australia

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. In Australia, “15199 - Other (ISM)” was most frequently recorded as ISM detainable deficiencies. For the case where plural ISM code elements corresponding to the objective evidences of ISM detention were found, “15199 - Other (ISM)” was recorded. Typical objective evidences of the ISM detainable deficiency are mainly as follows.

- Damage and/or wastage of securing devices (cleats) or cleat crutches of cargo hatch covers
- Malfunction of fire damper’s operations
- Standard compass error not determined once a watch
- ECDIS alarms not properly configured
- Oil leakage and peeled off insulating material on piping of generator engine
- Each boat has not been lowered in abandon ship drill
- Sewage treatment plant has not been operated in accordance with manufacture’s instructions

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

Code	Item	2019	2020	2021
15104	Masters responsibility and authority	0	1	0
15106	Shipboard operations	4	3	4
15107	Emergency preparedness	5	1	2
15109	Maintenance of the ship and equipment	3	5	4
15199	Other (ISM)	8	17	6
Total		20	27	16

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

Code	Item	No.	Remark
03105	Covers (hatchway-, portable- etc.)	2	
03108	Ventilators, air pipes, casings	2	
04102	Emergency Fire Pump and its pipes	3	
04110	Abandon ship drills	3	
04114	Emergency source of power - EG	2	
07105	Fire doors/openings in fire-resisting div.	2	
07113	Fire pumps and its pipes	2	
07115	Fire-dampers	2	
07199	Other (fire safety)	4	Oil leakage of G.E.
10105	Magnetic compass	2	
10112	Electronic charts (ECDIS)	3	
10135	Monitoring of voyage or passage plan	2	
11104	Rescue boats	2	
11129	Operational readiness of lifesaving app.	2	
13199	Other (machinery)	4	Water leakage of machineries
14402	Sewage treatment plant	4	
18425	Access/ structural features (ship)	2	
Others		61	

3.3.2 Belgium

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. Typical objective evidences of the ISM detainable deficiency are mainly as follows.

- Invalid seafarer's employment agreement
- Damages of steps and handrails of gangway
- Crews are unfamiliar with operation of fire pumps
- Alert displaying in fire detection's panel
- Fireman's outfits not meet SOLAS requirements
- Malfunction of fuel oil shut-off valves
- Damages of side ropes and steps of pilot ladder
- Not latest nautical publications

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

Code	Item	2019	2020	2021
15150	ISM	6	11	10

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

Code	Item	No.	Remark
01220	Seafarer' employment agreement	7	
02109	Permanent means of access	3	
03105	Covers (hatchway-, portable- etc.)	3	
04102	Emergency Fire Pump and its pipes	4	
04109	Fire drills	2	
04114	Emergency source of power - EG	2	
07105	Fire doors/openings in fire-resisting div.	2	
07106	Fire detection and alarm system	5	
07108	Readily availability of fire fighting equip.	2	
07111	Personal equipment for fire safety	4	
07114	Remote Means of control (opening, pumps, ventilation, etc.) Machinery spaces	4	
07117	Jacketed high pressure lines and oil leakage alarm	2	
08107	Machinery controls alarm	2	
10101	Pilot ladders and hoist/pilot transfer arrangements	3	
10105	Magnetic compass	2	
10112	Electronic charts (ECDIS)	2	
10116	Nautical publications	3	
13102	Auxiliary engine	2	
13104	Bilge pumping arrangements	2	
	Others	88	

3.3.3 USA

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. In USA, “15109 - Maintenance of the ship and equipment” was most frequently recorded as ISM detainable deficiencies. Typical objective evidences of the ISM detainable deficiency are mainly as follows.

- Damage and/or wastage of securing devices (cleats) or cleat crutches of cargo hatch covers
- Crews are unfamiliar with tests of steering gear’s alarm systems
- Smoke detectors with vinyl cover.
- Crews are unfamiliar with operations of fixed fire extinguishing arrangement (CO2)
- Not cleanliness of E/R with rubbish and waste oil
- Water leakage from pumps

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

Code	Item	2019	2020	2021
15101	Safety and environmental policy	2	1	0
15106	Shipboard operations	2	2	1
15108	Reports of NCs, accidents and hazardous occur.	0	1	0
15109	Maintenance of the ship and equipment	13	3	7
15110	Documentation - ISM	0	1	0
15111	Company verification, review and evaluation	1	0	0
15112	Certification, verification and control	1	0	0
TOTAL		19	8	8

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

Code	Item	No.	Remark
02101	Closing devices/watertight doors	2	
02105	Steering gear	2	
07106	Fire detection and alarm system	3	
07108	Readily availability of fire fighting equipment	2	
07109	Fixed fire extinguishing installation	2	
07110	Fire fighting equipment and appliances	1	
07112	Emergency Escape Breathing Device and disposition	1	
07114	Remote Means of control (opening, pumps, ventilation, etc.) Machinery spaces	1	
07126	Oil accumulation in engine room	3	
09210	Machinery	2	
11119	Immersion suits	1	
13101	Propulsion main engine	1	
14608	Incinerator including operations and operating manual	1	
16101	Ship security defects	1	
Others		16	

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. 90.4% of the NK MLC ships are classed with this Society.

Table 4.1 Number of NK MLC Ships (per Class)

Classification	2019		2020		2021	
	Number	Percentage	Number	Percentage	Number	Percentage
NK class	4,847	88.6%	4,957	89.3%	4,897	90.4%
Other class	623	11.4%	596	10.7%	522	9.6%
Total	5,191		5,470		5,419	

4.2 Statistics of Detentions of NK MLC Ships

As of the end of April 2022, 101 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		2019	2020	2021
Australia		4	6	2
Canada		1	3	5
Japan		0	3	1
Russia		2	3	3
EU	Belgium	2	7	5
	Germany	0	4	5
	Italy	4	0	3
	Other EU Members	1	4	8
Other Countries		4	2	3
Total		18	32	35

4.3 Study of MLC Detainable Deficiencies

This clause introduces the studies 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 2021. 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 major MLC deficiencies regarded as objective evidences of ISM detainable deficiencies are shown in Table 4.3.3. As for the MLC detainable deficiencies, “01220 - Seafarers' employment agreement (SEA)” was most frequently recorded on NK MLC ships in 2021. And “18203 - wages” followed it.

On the other hand, the top 3 deficiencies recorded as objective evidences of ISM detainable deficiencies in MLC deficiencies are as followings.

- Top.1: “01220 - Seafarers' employment agreement (SEA)” (12)
- Top.2: “18302 – Sanitary facilities” (6)
- Top.3: “01308 – Records of rest” (5)
- Top.3: “18299 – Other (Conditions of employment)” (5)
- Top.3: “18408 – Electrical ” (5)
- Top.3: “18416 – Ropes and wires” (5)
- Top.3: “18420 – Cleanliness of engine room” (5)
- Top.3: “18425 – Access/ structural features (ship)” (5)

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
	01336	Certificate or documentary evidence of financial security for repatriation
	01337	Certificate or documentary evidence of financial security relating to shipowners liability
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 表記)
01xxx	Certificates & Documentation		
01218	Medical certificate	1	ESP
01220	Seafarer' employment agreement (SEA)	16	BEL,CAN,DNK,ITA,PAN
01308	Records of rest	3	BEL,CAN,CHN
01331	Collective bargaining agreement	1	CAN
18xxx	Labour Conditions (MLC, 2006)		
18199	Other (Minimum requirements)	1	PAN
18202	Legal documentation on work and rest hours	2	CAN
18203	Wages	8	AUS,CAN,IDN,ITA
18204	Calculation and payment of wages	1	FRA
18299	Other (Conditions of employment)	5	AUS,IND,JPN
18301	Noise, vibration and other ambient factors	1	DEU
18302	Sanitary facilities	4	DEU,PRT,ROU
18305	Hospital accommodation (Sickbay)	1	DEU
18313	Cleanliness	1	GBR
18314	Provisions quantity	3	DEU,DNK,ITA
18321	Heating, air conditioning and ventilation	1	DEU
18324	Cold room, cold room cleanliness, cold room temperature	4	CAN,DEU
18401	Medical Equipment, medical chest, medical guide	1	DEU
18402	Access to on shore medical doctor or dentist	1	IDN
18407	Lighting (Working spaces)	1	DEU
18408	Electrical	1	RUS
18418	Winches and capstans	1	ESP
18419	Adequate lighting- mooring arrangements	1	DEU
18420	Cleanliness of engine room	4	CAN,DEU,MLT,PRT
18425	Access/ structural features (ship)	1	RUS
18432	Risk evaluation, training and instruction to seafarers	1	AUS
Total		51	-

***ISO description of the country**

ISO 表記	Country	ISO 表記	Country	ISO 表記	Country
AUS	Australia	BEL	Belgium	CAN	Canada
CHN	China	DEU	Germany	DNK	Denmark
ESP	Spain	FRA	France	GBR	UK
IDN	Indonesia	ITA	Italy	JPN	Japan
MLT	Malta	PAN	Panama	PRT	Portugal
ROU	Romania	RUS	Russia		

**Table 4.3.3 Major MLC Deficiencies Regarded as the Evidences
of ISM Detainable Deficiencies**

Code	Item	No.
01xxx	Certificates & Documentation	
01220	Seafarer' employment agreement (SEA)	12
01308	Records of rest	5
18xxx	Labour Conditions (MLC, 2006)	
18203	Wages	4
18299	Other (Conditions of employment)	5
18302	Sanitary facilities	6
18312	Galley, handling room (maintenance)	4
18313	Cleanliness	4
18324	Cold room, cold room cleanliness, cold room temperature	3
18401	Medical Equipment, medical chest, medical guide	3
18408	Electrical	5
18409	Dangerous areas	4
18416	Ropes and wires	5
18418	Winches and capstans	4
18420	Cleanliness of engine room	5
18424	Steam pipes, pressure pipes, wires (insulation)	4
18425	Access/ structural features (ship)	5
18431	Investigation after accident	3
18432	Risk evaluation, training and instruction to seafarers	3
18499	Other (Health protection, medical care ...)	4
-	Other Deficiencies with 18xxx	32
	Total	120

**(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 2021.

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

Code	Item	No.
092xx	Working Conditions	
09131	Cold room	1
09219	Pipes, wires (insulation)	1
	Total	2

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 the public data available, this Chapter introduces abstracts of the recent results of detentions by the Tokyo MOU, the Paris MoU and the USCG in 2021.

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

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

5.1 Tokyo MOU

In 2021, 22,730 inspections were carried out in the Tokyo MOU region, and 526 ships were detained due to serious deficiencies found onboard. A total of 3,728 inspections were carried out remotely amounting to 16.4% of the total number of inspections.

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 in 2021.

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

Country	No. of Inspection			No. of Detentions ¹⁾			Detention ratio (%)		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
Australia ²⁾	3,222	3,021	2,820	163	178	159	5.06	5.89	5.64
Canada ³⁾	703	583	643	12	19	24	1.71	3.26	3.73
Chile	759	533	712	7	8	5	0.92	1.50	0.70
China	7,756	787	3,673	434	56	102	5.60	7.12	2.78
Fiji	36	5	3	1	0	1	2.78	0	33.33
Hong Kong, China	710	256	261	20	6	9	2.82	2.34	3.45
Indonesia	1,766	1,949	2,555	73	47	54	4.13	2.41	2.11
Japan	5,023	2,323	2,108	93	43	52	1.85	1.85	2.47
Republic of Korea	1,950	1,601	1,470	59	63	49	3.03	3.94	3.33
Malaysia	1,413	738	895	11	2	9	0.78	0.27	1.01
Marshall Islands	11	0	0	2	0	0	18.18	0	0
New Zealand	228	146	105	6	3	0	2.63	2.05	0
Panama ³⁾	0	125	246	0	4	3	0	3.20	1.22
Papua New Guinea	187	75	104	3	0	2	1.60	0	1.92
Peru	462	189	478	1	0	2	0.22	0	0.42
Philippines	2,302	2,130	2,068	7	4	5	0.30	0.19	0.24
Russia Federation ³⁾	1,171	1,410	1,445	65	48	41	5.55	3.40	2.84
Singapore	1,199	494	443	21	5	0	1.75	1.01	0
Thailand	760	935	908	0	1	6	0	0.11	0.66
Vanuatu	8	2	1	0	0	0	0	0	0
Viet Nam	1,706	2,113	1,792	5	6	3	0.29	0.28	0.17
Total	31,372	19,415	22,730	983	493	526	3.13	2.54	2.31

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

2) Data for Australia is also provided to Indian Ocean.

3) Data is only for the Pacific ports.

5.1.2 Port State Inspections carried out remotely

Table 5.1.2 shows the numbers of Port State inspections carried out remotely.

Table 5.1.2 Port State Inspections carried out by Port Authorities (Tokyo MOU)

Country	Initial Inspection					Follow-up Inspection				
	Physical		Remote		Total No.	Physical		Remote		Total No.
	No.	%	No.	%		No.	%	No.	%	
China	595	16.20	3,078	83.80	3,673	500	29.14	1,216	70.86	1,716
Japan	2,040	96.77	68	3.23	2,108	451	95.35	22	4.65	473
Republic of Korea	1,466	99.73	4	0.27	1,470	339	96.03	14	3.97	353
Singapore	129	29.12	314	70.88	443	2	7.69	24	92.31	26
Viet Nam	1,532	85.49	260	14.51	1,792	178	99.44	1	0.56	179

5.1.3 Black List of Flag States

Table 5.1.3 shows the Black List of Flag States announced in the Tokyo MOU Annual Report.

Table 5.1.3 Black List of Flag States (Tokyo MOU)

Flag State	No. of Inspections 2019-2021	No. of Detentions 2019-2021	Black to Grey limit
Mongolia	224	33	22
Togo	771	100	66
Sierra Leone	892	89	75

5.1.4 Recognized Organization Performance

Table 5.1.4 shows the detention data of IACS affiliated Recognized Organizations in the Tokyo MOU Annual Report.

Table 5.1.4 Inspections and Detentions per Recognized Organization (Tokyo MOU) (*)

Recognized Organization	No. of Inspections 2019-2021	No. of Detentions 2019-2021	Detention ratio (%)
American Bureau of Shipping (ABS)	3,061	56	1.83
Bureau Veritas (BV)	3,190	73	2.29
China Classification Society (CCS)	2,167	23	2.29
Croatian Register of Shipping (CRS)	32	1	3.13
DNV AS (DNV)	5,602	107	1.91
Indian Register of Shipping (IRS)	44	3	6.82
Korean Register (KR)	2,037	41	2.01
Lloyd's Register (LR)	3,414	61	1.79
Nippon Kaiji Kyokai (NK)	8,337	135	1.62
Polish Register of Shipping (PRS)	54	2	3.77
RINA Services S.p.A. (RINA)	1,013	17	1.68
Russian Maritime Register of Shipping (RS)	125	1	0.80

(*) 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 organizations, while the number of detentions would be counted only towards the RO that issued the certificate relating to the detainable deficiency or deficiencies.

5.1.5 Deficiencies per Category

Figure 5.1.5 shows the number of deficiencies by category for the three years from 2018 through 2020.

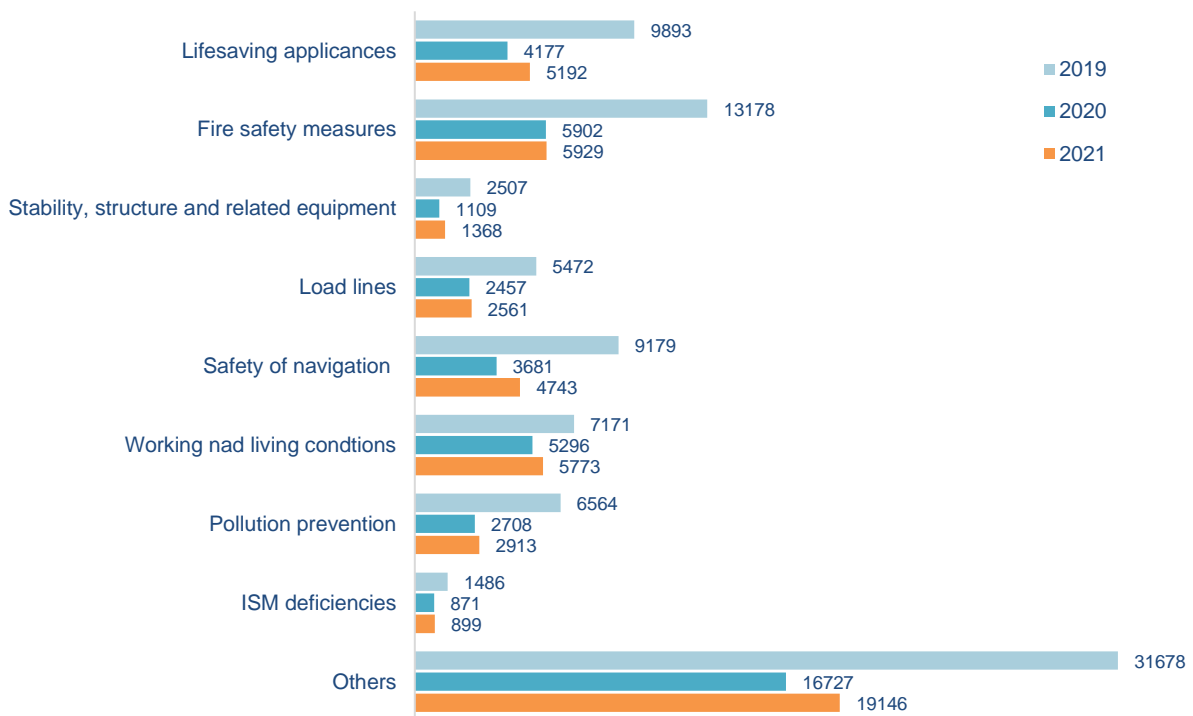


Fig. 5.1.5 Deficiencies per Category (Tokyo MOU)

5.2 Paris MoU

In 2021, 15,387 inspections were carried out in the Paris MoU region, and 582 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 2019 through 2021.

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

Country	No. of Inspections			No. of Detentions			Detention ratio (%)		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
Belgium	1,010	571	721	36	50	45	3.56	8.76	6.24
Bulgaria	342	320	304	12	7	4	3.51	2.19	1.33
Canada	1,237	1,115	1,198	25	37	52	2.02	3.32	4.34
Croatia	299	219	270	9	6	9	3.01	2.74	3.33
Cyprus	106	31	107	9	1	6	8.49	3.23	5.61
Denmark	491	542	501	4	4	2	0.81	0.74	0.40
Estonia	251	144	232	1	2	0	0.40	1.39	0.00
Finland	280	220	250	0	1	1	0.00	0.45	0.40
France	1,047	756	1,037	24	17	30	2.29	2.25	2.89
Germany	1,116	611	785	19	29	35	1.70	4.75	4.46
Greece	987	765	825	50	29	28	5.07	3.79	3.39
Iceland	64	79	72	1	3	0	1.56	3.80	0.00
Ireland	299	222	172	12	16	5	4.01	7.21	2.91
Italy	1,447	1,231	1,359	83	57	139	5.74	4.63	10.23
Latvia	309	187	225	3	3	2	0.97	1.60	0.89
Lithuania	253	372	365	0	1	0	0.00	0.27	0.00
Malta	181	157	213	8	3	7	4.42	1.91	3.29
Netherlands	1,287	658	770	22	4	15	1.71	0.61	1.95
Norway	555	355	417	14	5	17	2.52	1.41	4.08
Poland	492	468	536	19	9	14	3.86	1.92	2.61
Portugal	528	338	426	3	5	12	0.57	1.48	2.82
Romania	489	534	441	25	6	14	5.11	1.12	3.17
Russia ¹⁾	1,177	739	748	57	25	27	4.84	3.38	3.61
Slovenia	140	135	179	1	3	0	0.71	2.22	0.00
Spain	1,517	1,283	1,731	43	22	33	2.83	1.71	1.91
Sweden	570	245	465	8	9	6	1.40	3.67	1.29
United Kingdom	1,434	862	1,054	38	20	32	2.65	2.32	3.04

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 2019-2021	Detentions 2019-2021	Risk	Black to Grey Limit
Cameroon	69	15	High Risk	9
Togo	361	53	Medium to High Risk	34
Moldova, Republic of	328	48		31
Albania	60	11		8
Comoros	315	39	Medium Risk	30
Algeria	69	10		9
Egypt	46	7		7

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 2019 through 2021.

Table 5.2.3 Recognized Organization Performance Table (Paris MoU)

Recognized Organization	No. of Inspections 2019-2021	No. of Detentions 2019-2021	Performance Level
American Bureau of Shipping (ABS)	5,633	2	High
DNV AS (DNV)	21,689	14	
Lloyd's Register (LR)	10,679	12	
Nippon Kaiji Kyokai (NK)	7,726	13	
Bureau Veritas (BV)	10,263	23	
RINA Services S.p.A. (RINA)	4,794	11	
China Classification Society (CCS)	850	1	
Russian Maritime Register of Shipping (RS)	2,096	5	
Korean Register (KR)	1,402	3	
Polski Rejestr Statkow (Polish Register of Shipping) (PRS)	501	5	Medium
Croatian Register of Shipping (CRS)	134	0	
Indian Register of Shipping (IRS)	177	2	

5.3 USCG

In 2021, 8,663 PSC examinations were conducted by the USCG during the year, and 63 ships were detained due to serious deficiencies found onboard.

5.3.1 USCG Statistics

Table 5.3.1 shows the number of safety related detentions for the three years from 2019 through 2021.

Table 5.3.1 Detentions by Year (Safety)

Year	No. of Safety Exams	No. of Detentions	Annual Detention Ratio (%)	3-Year Average Detention Ratio (%)
2019	8,622	95	1.10	1.07
2020	7,383	57	0.77	1.02
2021	8,663	63	0.73	0.87

5.3.2 Targeted Flag States (Safety)

The USCG targets Flag Administrations for additional PSC examinations if their detention ratio scores higher than the overall three-year rolling average detention ratio and if an Administration is associated with more than one detention in the past three years. 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	2019-2021 Detention Ratio (%)	Category
Belgium	2.22	High Risk
Bolivia*	26.32	
Israel	9.68	
Mexico	4.40	
St. Kitts and Nevis	11.76	
Saint Vincent and the Grenadines	5.11	
Tanzania	9.68	
Togo	3.26	
Turkey	3.33	
Antigua and Barbuda	1.42	Medium Risk
Cyprus	1.71	
Panama	1.01	
Portugal	1.22	
Vanuatu	1.27	

5.3.3 Recognized Organization Performance (Safety)

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)

Recognized Organization	2019-2021 Vessel Examinations	2019-2021 RO-Related Detentions	Detention Ratio (%)
American Bureau of Shipping (ABS)	5838	0	0.00
Bureau Veritas (BV)	3834	7	0.18
China Classification Society (CCS)	607	1	0.16
Croatian Register of Shipping (CRS)	41	0	0.00
DNV	9790	3	0.03
Indian Register of Shipping (IRS)	38	0	0.00
Korean Register (KR)	998	1	0.10
Lloyd's Register (LR)	7273	6	0.08
Nippon Kaiji Kyokai (NK)	6991	4	0.05
Polish Register of Shipping (PRS)	65	0	0.00
RINA Services S.p.A. (RINA)	1242	1	0.08
Russian Maritime Register of Shipping (RS)	132	1	0.00

Recognized Organizations are evaluated on their RO-related Detention Ratio on PSC over the previous three years.

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