PORT STATE CONTROL

TOLIOPOULOS ALEXANDROS

MOST COMMON DEFICIENCIES THAT LEAD TO DETENTION

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ΕΠΙΒΛΕΠΩΝ ΚΑΘΗΓΗΤΗΣ: ΠΑΠΑΛΕΩΝΙΔΑ ΠΑΡΑΣΚΕΥΗ

PORT STATE CONTROL: MOST COMMON DEFICIENCIES THAT LEAD TO DETENTION

ΤΟΥ ΣΠΟΥΔΑΣΤΗ: ΑΛΕΞΑΝΔΡΟΥ ΤΟΛΙΟΠΟΥΛΟΥ
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1				
2				
3				
ΤΕΛΙΚΗ ΑΞΙΟΛΟΓΗΣΗ				

Ο ΔΙΕΥΘΥΝΤΗΣ ΣΧΟΛΗΣ : ΤΣΟΥΛΗΣ ΝΙΚΟΛΑΟΣ

Abstract

This project refers to Port State Control, the beginning of this authority, its implementation around the world and the most common deficiencies that lead a PSC officer to detain a vessel.

As it is mentioned below every Memorandum of Understanding concerning Port State Control has a different region that is applied and every one of them a different date of adoption. The inspection a PSC officer can conduct, may vary between the four different types that are written in the text.

The main subject of the project is about detainable deficiencies of the last year (2017), a few words and some examples about each one of them.

Keywords: PSC(officer-inspection), Deficiency, Detention, Vessel, MoU, Maritime, Shipping

Contents

INTRODUCTION

i) **Port State Control definition**

Port State Control (PSC) is an internationally agreed regime for the inspection of foreign ships in other national ports by PSC inspectors. The remit of these PSC officers is to investigate compliance with the requirements of international conventions, such as SOLAS, MARPOL, STCW, and the MLC. Inspections can involve checking that the vessel is manned and operated in compliance with applicable international law, and verifying the competency of the ship's master and officers, and the ship's condition and equipment.

ii) **History**

In 1978, a number of European countries agreed in The Hague on a memorandum that agreed to audit whether the labor conditions on board vessels were in accordance with the rules of the Will. After the Amoco Cadiz sank that year, it was decided to also audit on safety and pollution. To this end, in 1982 the Paris Memorandum of Understanding (Paris MoU) was agreed upon, establishing Port State Control, nowadays 26 European countries and Canada. In practice, this was a reaction to the failure of the flag states - especially flags of convenience that have delegated their task to classification societies - to comply with their survey and certification duties.

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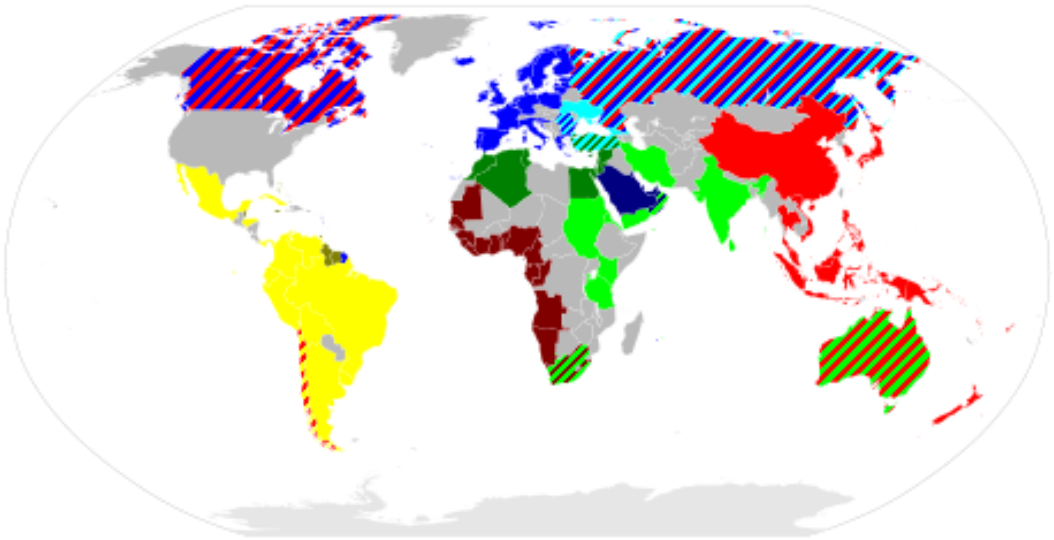
Following on the foundation built by the Paris MOU, several other regional MOUs have been signed, including the Tokyo MOU (Pacific Ocean), Acuerdo Latino or Acuerdo de Viña del Mar (South and Central America), the Caribbean MOU, the

Mediterranean MOU, the Indian Ocean MOU, the Abuja MOU (West and Central Atlantic Africa), the Black Sea MOU, and the Riyadh MOU (Persian Gulf).

The United States Coast Guard verifies that all foreign vessels operating in United States waters are in substantial compliance with international conventions, as well as all applicable U.S. laws, regulations and treaties. The U.S. is not a member of any Port State Control MOU.

MoU's Around the world



Paris MoU

Tokyo MoU

Acuerdo de Viña del Mar

Indian Ocean MoU

Mediterranean MoU

Abuja MoU

Caribbean MoU

Black Sea MoU

Riyadh MoU

i) Paris MoU

The Paris MoU on PSC is an administrative agreement between twenty-seven Maritime Authorities.

In 1978 the 'Hague Memorandum' between a number of maritime authorities in Western Europe was developed. It dealt mainly with enforcement of shipboard living and working conditions as required by ILO Convention no. 147.

However just as the memorandum was about to come into effect in March 1978 a massive oil spill occurred off the coast of Brittany (France) as a result of the grounding of the VLCC 'Amoco Cadiz'.

This incident caused a strong political and public outcry in Europe for far more stringent regulations with regard to the safety of shipping. This pressure resulted in a more comprehensive memorandum which covered:

- safety of life at sea
- prevention of pollution by ships, and
- living and working conditions on board ships

The current member States of the Paris MoU are:

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.

ii) Tokyo MoU

The Tokyo MOU is an inter-governmental co-operative organization on port State control (PSC) in the Asia-Pacific region.

Tokyo MoU's vision is to eliminate substandard shipping in the Asia-Pacific region.

Their mission is to promote the effective implementation, and the universal and uniform

application, of relevant IMO/ILO instruments on ships operating in the region.

Tokyo MOU strives to:

- develop and maintain effective and efficient PSC system in the region;
  enhance status and performance of the MOU;
- promote joint initiatives and co-operation with other regional PSC regimes; and
- improve transparency, communication and relationship with the industry.

iii) Acuerdo de Viña del Mar

The Latin American Agreement on Port State Control of Vessels was adopted by Resolution No. 5 of the 6th Meeting of the Operative Network for Regional Cooperation Among Maritime Authorities of South America, Cuba, Mexico and Panama (ROCRAM), held on 5 November 1992. The Agreement was originally subscribed by Argentina, Brazil, Colombia, Chile, Ecuador, Mexico, Panama, Peru, Uruguay and Venezuela thus, a major international step was taken since this was the first developing region to reach this sort of operational agreement.

At present, the Latin American Agreement of Viña del Mar is formed by the following full Members: ARGENTINA, BRAZIL, CHILE, COLOMBIA, CUBA, ECUADOR, GUATEMALA, HONDURAS, MEXICO, PANAMA, PERU, DOMNICAN REPUBLIC, URUGUAY and VENEZUELA.

iv) Indian Ocean MoU

A review on the adequacy of the region's maritime safety infrastructure, as well as requirements in accordance with the International Maritime Convention was carried out during the period August 1997 to September 1997. From this, it was felt that Regional co-operation for the countries on the Indian Ocean rim, would be the

solution to control the plying of sub-standard ships in the region. Accordingly, the concept of an Indian Ocean Memorandum of Understanding was mooted.

At the invitation of the Secretary General of the International Maritime Organisation, and with a generous offer of the Government of India to host the meeting, the first preparatory meeting on the developing of flag and port State capabilities in the Indian Ocean rim was held from 13th to 17th October 1997, at Mumbai, Delegations from the following countries attended the meeting:

Australia, Bangladesh, Djibouti, Eritrea, Ethiopia, India, Kenya, Maldives, Mauritius, Mozambique, Myanmar, Oman, Seychelles, Singapore, South Africa, Sri Lanka, Tanzania and Yemen.

A draft Memorandum, drawn at this meeting, was subsequently finalised between 1st and 5th June 1998, in Pretoria, during a second preparatory and signatory meeting hosted by the Government of South Africa. In addition to the countries mentioned earlier, Sudan & Iran participated in this meeting.

The Memorandum was kept open for signature at the Head Quarters of the Secretariat in Goa, India, from 5th June, 1998 to 22nd January, 1999. The first committee meeting of MOU took place at Goa from 20th to 22nd January 1999. During this period and at the first meeting, the following countries signed acceptance of the Memorandum of Understanding:

Australia, Eritrea, India, Sudan, South Africa and Tanzania.

Subsequently, Mauritius, Srilanka, Iran, Kenya, Maldives, Oman, Yemen, France, Bangladesh, Comoros, Mozambique, Seychelles and Myanmar acceded to the MOU. As of September 2017, nineteen countries have become parties to the Memorandum. The Memorandum came into effect on 1st April 1999.

v) Mediterranean MoU

Within the International effort to increase the Maritime Safety and the prevention of pollution and within the activities of the Euro-Med conference that was held in Barcelona 28th of November 1995, it was declared the birth of cooperation project financed by the E.C. under the umbrella of the IMO and ILO. This declaration was developed according to STCW 95 and the international community interest in activating the role of Port State Control to a proposed agreement for southern and eastern Mediterranean countries for a Port State Control System.

This agreement was prepared through two meetings the 1st was held in Tunisia 25-29 March 1996 and the 2nd in Casablanca, Morocco from 10-14 December 1996.

The Third Final Preparatory Meeting on the establishment of a PSC Agreement in the Mediterranean region took place in Valletta, Malta, from 8 to 11 July 1997, At the end of the Meeting the Mediterranean MOU on PSC was signed by the Representatives of eight Countries (Algeria, Cyprus, Egypt, Israel, Malta, Morocco, Tunisia and Turkey). Late 1997 the Med. MOU was signed by Lebanon & in July 1999 by Jordan.

vi) Abuja MoU

The Abuja MoU on Port State Control was signed at a Ministerial Conference held in Abuja, Nigeria by sixteen West and Central African States on 22nd of October 1999. The meeting was organised by the International Maritime Organisation (IMO) and host by the government of the Federal Republic of Nigeria.

The Abuja memorandum of understanding is the legal document under which countries of the region agreed to develop and implement a common mechanism for the respective port state control activities. The main work of Abuja MoU is harmonization of the port state control procedure and practices of all the countries in the region aimed at eliminating the operation of substandard shipping within the region thereby ensuring maritime safety, security, protection of our marine environment from pollution and improving the working and living conditions of ship crew, and to facilitate regional cooperation and exchange of information among member States.

The following countries fall within the Abuja-MoU region, namely: -Angola, Benin, Cameroon, Cape Verde, Congo, Cote d' Ivoire, Gabon, Ghana, Guinea, Equatorial Guinea, Liberia, Mauritania, Namibia, Nigeria, Senegal, Sierra Leone, South Africa, Sao Tome and Principe, Democratic Republic of Congo, Guinea Bissau, The Gambia, and Togo.

vii) Caribbean MoU

The Memorandum of Understanding on Port State Control in the Caribbean Region was signed in Christ Church, Barbados on February 9, 1996 by nine States namely: Antigua & Barbuda, Barbados, Dominica, Grenada, Guyana, Jamaica, the Netherlands Antilles, Suriname and Trinidad and Tobago. This was in reality a successful culmination of years of discussion, research and assistance from the International Maritime Organisation with the lead person being Captain Barrie Rial (RMA).

The Membership has since increased to fourteen States, with St. Kitts and Nevis being the most recent addition. Other Observer States have indicated their willingness to become Members and it is hoped that the membership of the CMOU will continue to grow over the next few years.

viii) Black Sea MoU

In 2000 the Black Sea Memorandum of Understanding on Port State Control was signed by 6 Black Sea countries with the common understanding of main principles for PSC.

PSCO

Port State control is carried out by properly qualified Port State Control Officers (PSCO), acting under the responsibility of the maritime authority.

Scope

The geographical scope of the Black Sea MOU region consists of ports located on Black Sea coastline.

Structure

The Port State Control Committee is the executive body of the Black Sea MOU. The Committee deals with matters of policy, finance and administration. Daily activity of the Black Sea MOU is supported by the permanent Secretariat located in Istanbul, Turkey.

Inspections

A port State control visit on board will normally start with verification of certificates and documents. When deficiencies are found or the ship is reportedly not complying with the regulations, a more detailed inspection is carried out.

Instruments

Only internationally accepted conventions shall be enforced during port State control inspections. These conventions are the so-called "relevant instruments".

Actions against substandard ships

When serious deficiencies are found, the ship shall be detained. The captain is instructed to rectify the deficiencies before departure.

ix) Riyadh MoU

In June 2004 The Riyadh Memorandum of Understanding on Port State Control in the Gulf Region, known as the Riyadh MOU, was signed at a meeting in Riyadh by 6 countries (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and UAE).

The Riyadh Memorandum of Understanding(MoU) is an agreement to achieve safe, secure and efficient shipping in the maritime jurisdictions in the Gulf region. The Riyadh MoU is one of several regional agreements on Port State Control that have been signed by maritime authorities under the auspices of the International Maritime Organization. PSC governs the inspection of foreign ships in national ports to verify that the condition of the ship and its equipment comply with the requirements of international regulations and that the ship is manned and operated in compliance with convention standards

The Riyadh MoU commits the maritime authorities of the six Gulf States (Oman, UAE, Qatar, Bahrain, Kuwait, and Saudi Arabia to a unified system of port state control measures and to intensify cooperation and information exchange on issues concerning Port State Control

PSC Inspections & Deficiencies

i) Inspection types

A port State control visit on board a ship will normally start with, as a minimum and to the extent applicable, examination of the documents in accordance with Annex 10 of the Paris MOU.

In addition the PSCO conducts a general inspection of several areas on board to verify that the overall condition of the ship complies with that required by the various certificates.

If the ship is found to comply, the PSCO will issue a 'clean' inspection report (Form A) to the master of the ship. In case deficiencies have been identified, the inspection report will include a deficiencies found report (Form B) indicating any follow-up actions to be taken to rectify the deficiencies indicated. Next, the data of the respective ship and the inspection result will be recorded on the central computer database, located in Lisbon, Portugal.

Furthermore, control on compliance with on board operational requirements may be included in the control procedures, particularly if the PSCO has reason to believe that the crew demonstrates insufficient proficiency in that area.

The following inspection types can be carried out:

a) Initial inspection

b) More detailed inspection

c) Expanded inspection

d) Concentrated Inspection Campaign

a) Initial inspection

An initial inspection will consist of a visit on board the ship in order to:

- check the certificates and documents listed in Annex 10 of the MoU text;
- check that the overall condition and hygiene of the ship including:

1. navigation bridge
2.accommodation and galley
3. decks including forecastle
4. cargo holds/area
5. engine room

- meets generally accepted international rules and standards
- verify, if it has not previously been done, whether any deficiencies found by an Authority at a previous inspection have been rectified in accordance with the time specified in the inspection report.

b) More detailed inspection

A more detailed inspection will be carried out whenever there are clear grounds for believing, during an inspection, that the condition of the ship or of it's equipment or crew does not substantially meet the relevant requirements of a relevant instrument. Clear grounds exist when a Port State Control Officer finds evidence, which in his/her professional judgement warrants a more detailed inspection of the ship, its equipment or its crew. The absence of valid certificates or documents is considered a clear ground. Other examples of clear grounds can be found in Annex 9, paragraph 6 of the MoU text.

A more detailed inspection will include an in-depth examination in:

- the area(s) where clear grounds were established
- the areas relevant to any overriding or unexpected factors
- other areas at random from the following risk areas:

    1. Documentation
    2. Structural condition
    3. Water/Weather tight condition
    4. Emergency systems
    5. Radio communication
    6. Cargo operations
    7. Fire safety
    8. Alarms
    9. Living and working condition
    10. Navigation equipment
    11. Life saving appliances
    12. Dangerous Goods
    13. Propulsion and auxiliary machinery
    14. Pollution prevention

The more detailed inspection will take account of the human elements covered by ILO, ISM and STCW and include operational controls as appropriate.

c) Expanded inspection

An expanded inspection shall include a check of the overall condition, including human element where relevant, in the following risk areas:

1. Documentation
2. Structural condition
3. Water/Weather tight condition
4. Emergency systems
5. Radio communication
6. Cargo operations
7. Fire safety
8. Alarms
9. Living and working conditions
10. Navigation equipment
11. Life saving appliances
12. Dangerous Goods

13. Propulsion and auxiliary machinery
14. Pollution prevention

and subject to their practical feasibility or any constraints relating to the safety of persons, the ship or the port, verification of the specific items in these risk areas listed for each ship type must be part of an expanded inspection.

The inspector must use professional judgement to determine the appropriate depth of examination or testing of each specific item.

Inspectors must be aware that the safe execution of certain on-board operations, e.g. cargo handling, could be jeopardised by tests carried out during such operation.

The expanded inspection will take account of the human elements covered by ILO, ISM and STCW and include operational controls as appropriate.

d) Concentrated Inspection Campaign

Concentrated inspection campaigns focus on specific areas where high levels of deficiencies have been encountered by PSCOs, or where new convention requirements have recently entered into force. Campaings take place yearly over a period of 3 months (September - November) and are combined with a regular inspection.

Over the years the following topics have been the focus of a CIC:

- 2013 Propulsion and auxiliary machinery
- 2012 Fire Safety Systems
- 2011 Structural safety and Load Lines
- 2010 Tanker damage stability
- 2009 Lifesavings: Lifeboat launching arrangements
- 2008 Safety of Navigation: Solas chapter V
- 2007 Implementation of the International Safety Management Code (ISM-Code)
- 2006 MARPOL 73/78 Annex I
- 2005 Global Maritime Distress Safety System (GMDSS)
- 2004 Labour and live circumstances: Working and living conditions

- 2003 Operational Compliance on board passenger ships
- 2002 International Safety Management Code (ISM-Code).

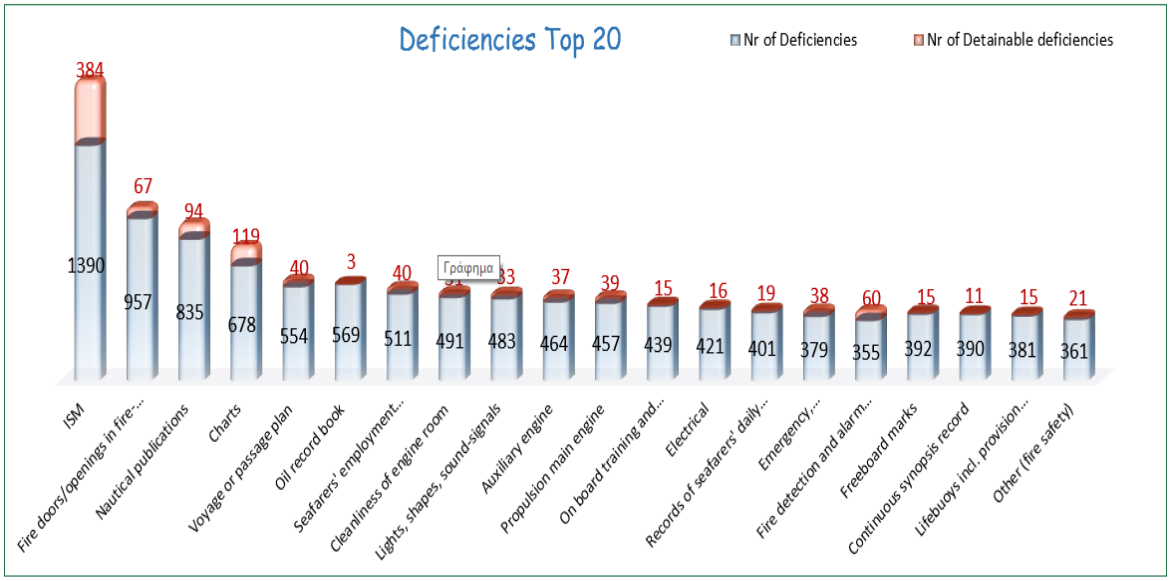
ii) Deficiencies criteria

A deficiency notice can be given at a vessel if she shows any lack, shortage, inadequacy, failure related to the following matters:

- Certificates and documentation
- Structural conditions
- Water or weather-tight conditions
- Emergency systems
- Radio communications
- Cargo operations including equipment
- Fire safety
- Alarms
- Dangerous goods
- Propulsion and auxiliary machinery
- Pollution prevention
- Labour conditions

Most Common Detainable Deficiencies

Top 20 detainable deficiencies of 2017



ISM related deficiencies

ISM Code purpose:

The purpose of this Code is to provide an international standard for the safe management and operation of ships and for pollution prevention.

The Code establishes safety-management objectives and requires a safety management system (SMS) to be established by "the Company", which is defined as the shipowner or any person, such as the manager or bareboat charterer, who has assumed responsibility for operating the ship.

The Company is then required to establish and implement a policy for achieving these objectives. This includes providing the necessary resources and shore-based support.

Every company is expected "to designate a person or persons ashore having direct access to the highest level of management".

The procedures required by the Code should be documented and compiled in a Safety Management Manual, a copy of which should be kept on board.

Deficiency Examples:

- SMC is not valid (expired).
  To avoid this, a program should be made to review all certificates at regular interval and keeping a track of their validity

- Company's safety and environmental protection policies are not known to senior staff.
  Proper training of personnel in aspect of ISM. All personnel to be briefed while joining. Proper internal audit to carry out.

- Emergency preparedness not on board.
  Conduct proper internal audit and review all documents at regular interval.

- ORB (Oil Record Book) not on board.
  Major non professionalism and negligence as part of ship's personnel and company. Proper care should be taken to ensure that ORB is on board and properly filled up. It should be ensured that new ORB are ordered well in advance.

- Emergency equipment on board not operating properly.
  Due to improper planning and maintenance. To avoid this emergency equipment must be maintained properly and tested at specific interval as per laid standard and logged down to keep a track.

Deficiencies related to ‘Fire doors/openings in fire-resisting divisions’

Doors in Fire-resisting Divisions must meet the following requirements:

1. Every door in an "A" class division must:

    a) overlap the door frame at the top and sides and allow for a gap, between the edges of the door and the top, bottom and sides of the door frame, that is the minimum needed to open and close the door. Except as provided in iii, the gap at the bottom of the door should be the minimum needed to open and close the door and in no case more than 12 mm,

    b) be reasonably gastight if the door is fitted between a machinery space and an accommodation space, and

    c) when fitted on a stairway enclosure, have a gap at the bottom that is the minimum needed to open and close the door, in order to reasonably prevent the ingress of smoke.

2. Grilles or louvers must not be fitted in a door in an "A" class division, and

3. Every door in an "A" or "B" class division must be fitted with a thin metal identification plate that:

    a) has clearly stamped on it the door manufacturer's name, the "A" or "B" class rating, the type approval certificate number and the number of the drawing to which the door has been manufactured, and

    b) is screwed or riveted to either of the vertical edges of the door panel.

3.5.3.2 For the purposes of regulation 9.4.2.2, if hold-back arrangements fitted with remote-release devices of the fail-safe type are utilized:

a) The arrangements must be capable of being operated at the door and from the wheelhouse, and

b) A fire door open-close indicator panel must be provided in the wheelhouse.

(part of PART IV: SOLAS chapter II)

Deficiency Examples:

- Fire Screen Doors not Operating Properly
  The most frequent deficiency was fire screen doors that were not operating properly. Fire screen doors were found to have damage to the sequencing bars, damage to the doors themselves or pressure differential between spaces on either side of the door causing them not to close properly.

- Impeding Means of Escape
  Corridors, doors and hatches in areas designated as escape routes were either partially or completely blocked.
  Doors in some instances were locked, without the ability to defeat the lock, preventing passage in the direction of escape

Nautical Publications related deficiencies

The following publications are considered to satisfy the requirements of Regulation 19.2.1.4

- International Code of Signals (IMO)
- IAMSAR Manual Vol.III
- Mariners' Handbook (UKHO)
- Merchant Shipping Notices, Marine Guidance Notes and Marine Information Notes (MCA)
- Notices to Mariners (UKHO)
- Notices to Mariners Annual Summary (UKHO)
- Lists of Radio Signals (UKHO)
- Lists of Lights (UKHO)
- Sailing Directions (UKHO)
- Nautical Almanac
- Navigational Tables
- Tide Tables
- Tidal Stream Atlases
- Operating and Maintenance Instructions for Navigational Aids carried by the Ship

Deficiency examples:

- Publication on board are not current and up to date
- Not carrying those parts of the publication which are relevant to the ship's voyage and operation

Charts related deficiencies

Charts

The charts or ECDIS referred to in Regulation 19.2.1.4 must be of such a scale and contain sufficient detail as clearly to show;

i) all navigational marks which may be used by a ship when navigating the waters which are covered by the chart;

ii) all known dangers affecting those waters; and

iii) information concerning any ships' routeing and ship reporting measures applicable to those waters.

All charts and publications must be of the latest obtainable edition and be kept up to date from the latest relevant obtainable notices to mariners and radio navigational warnings.

Deficiency examples:

- Use of an unofficial nautical chart, therefore could be missing any kind of nautical warning (shallow waters, missing safe passage)
- Map to be used on the voyage was not up to date

Deficiencies related to Voyage or Passage Plan

Shipping cargo from one port to another involves coordinated working of several operations of both land and ship staff. One of the most integral parts of a shipping operations is the cargo or voyage planning, which is mainly undertaken by a navigational officer of a ship.

A passage plan is a comprehensive, berth to berth guide, developed and used by a vessel's bridge team to determine the most favourable route, to identify potential problems or hazards along the route, and to adopt Bridge Management Practices to ensure the vessel's safe passage. SOLAS Chapter 5, Annexes 24 & 25 titled "Voyage Planning" and "Guidelines for voyage planning" respectively, give specific regulatory information with regard to the passage plan.

Passage planning includes a complete description of the ship's passage which is prepared by an experienced deck officer of the ship. This is done to ensure that the ship sticks to the required routes for reaching the port of destination.

While making a passage plan, the officer must keep in mind that the ship must reach the destination safe by abiding to both local and international rules and regulations.

Deficiency examples:

- Vessel's inbound or outbound route was not mentioned in the passage plan
- Passage plan was not complete upon departure

Oil Record Book related Deficiencies

All Cargo vessels where MARPOL Convention is applicable must have an **Oil record book** where the chief engineer will record all oil or sludge transfers and discharges within the vessel. This is necessary in order for authorities to be able to monitor if a vessel's crew has properly disposed of their oil discharges at sea.
Each oil tanker of 150 gross tons and above, ship of 400 gross tons and above other than an oil tanker, and manned fixed or floating drilling rig or other platform shall maintain an Oil Record Book Part I (Machinery Space Operations). An oil tanker of 150 gross tons and above or a non oil tanker that carries 200 cubic meters or more of oil in bulk, shall also maintain an Oil Record Book II (Cargo/Ballast Operation).

Entries in the Oil Record Book should be:

- ✓ Accurate
- ✓ Completed and signed by the Officer in charge who performed the operation
- ✓ Inserted without delay
- ✓ Checked and signed on each page by the Master of the vessel
- ✓ Readily available for inspection at all times

Deficiency examples:

- Retention of oily water not properly recorded in the Oil record book
- Delay of insert of remaining Crude oil

- Collection of oil residues not recorded at regular weekly interval in Oil record book

- Bunkering details not properly recorded on Oil Record Book, training to be arranged

- Oil record book with wrong entry in weekly tank statements and difficult to read the entries

Deficiencies related to Seafarer's Employment Agreement

Seafarer's employment agreement must contain:

- Your full name, date of birth/age and place of birth.
- Shipowner's name and address.
- Place and date when the agreement was signed.
- Your position on board.
- The amount of your wages and how they are calculated.
- The amount of paid annual leave.
- Conditions for terminating the contract, including notice period where applicable.
- Expiry date if the contract is for a fixed term.
- Port of destination – and how long after arrival you will be discharged, if the contract is for a specific voyage.
- Health and social security benefits provided by the shipowner.
- Your entitlement to repatriation.
- Reference to the CBA, if applicable

Deficiency examples:

- A Copy of the Collective Bargaining Agreement which forms a part of the employment agreement shall be available on board the vessel.
  There is an objective evidence that complete CBA is not available on board.
- All seafarers shall be paid for their work regularly and in full in accordance with the employment agreements.

There is objective evidence to show that above is not complied with. Monthly salary for the month of Nov 2013 of OS was not paid as per agreement. Salary slip reflects more deduction.

Deficiencies related to Cleanliness of engine room

PSC Inspector checks the general appearance and cleanliness of the ship. He can randomly check the garbage bins to get an idea weather garbage management plan is being followed onboard or not. There have been instances where fine was imposed on the ship when PSC inspector found oily rag in a paper bin.

Deficiency examples:

- Excessive oil in bilges and throughout the engine room
- Oil on stairs so thar it becomes hazardous for someone to slip and fall

Deficiencies related to Lights, shapes and sound signals

The International Regulations for Preventing Collisions at Sea (COLREGs) not only prescribe the actions of each vessel in all states of visibility, they also stipulate the lights that should be fitted to a vessel, the shapes that should be available and the sound signals and signalling equipment necessary, to allow a vessel to make its status clear at all times.

Deficiency examples:

- Red light showing the status of the ship not operational
- Round day shape missing
- Automatic sound signal not operational

Deficiencies related to Auxiliary Engines

The engines used to drive the generators/alternators are the vessels primary source of power. This must always be taken into account in establishing priorities with regard to the operation, maintenance, and ordering of spares.

It is essential that the manufacturer's instructions are closely followed with regard to maintenance and overhaul of critical components such as connecting rods, bottom end bolts, shell bearings, pistons. All maintenance, overhauls and repairs must be fully and accurately recorded. Any accidental over speed, overheating, blackout or major failure must be notified to the relevant Management office. During "Standby" for manoeuvring periods, a minimum of two generators/alternators are to be on load.

The instructions given for main machinery are also applicable to auxiliary engines, generally the routine inspections must be carried out at much more frequent periods. The crankcase inspection is most important and must be carried out after a machine is shut down following a long run. Maintenance completed on the diesel generators is to be recorded on the "Maintenance Report Diesel Generators" .

The minimum number of auxiliary engines should be run to maintain the electrical requirements. The Chief Officer should be consulted regarding the deck requirements in port. The reduction in the number of auxiliary engines will not only result in fuel saving but primarily a reduction in auxiliary maintenance and will allow better engine performance. It must be stressed that in emergency situations, the possibility of a blackout must not delay the decision to shut down dangerous machinery.

When the vessel is in confined waters the above should not apply as enough auxiliary engines should be run to provide an ample supply of power to cope with any such emergency.

Deficiency examples:

- Not as required: Some leakages from diesel generators
- Inadequate: Cooling system not appropriate. Spray of water over electric systems
- Severe amount of water leaking on auxiliary engines

Propulsion Main Engine related deficiencies

Main Engine

Marine propulsion is the mechanism or system used to generate thrust to move a ship or boat across water. While paddles and sails are still used on some smaller boats, most modern ships are propelled by mechanical systems consisting of an electric motor or engine turning a propeller, or less frequently, in pump-jets, an impeller. Marine engineering is the discipline concerned with the engineering design process of marine propulsion systems.

Most modern ships use a reciprocating diesel engine as their prime mover, due to their operating simplicity, robustness and fuel economy compared to most other prime mover mechanisms. The rotating crankshaft can be directly coupled to the propeller with slow speed engines, via a reduction gearbox for medium and high speed engines, or via an alternator and electric motor in diesel-electric vessels. The rotation of the crankshaft is connected to the camshaft or a hydraulic pump on an intelligent diesel.

Propulsion

Marine propellers are also known as "screws". There are many variations of marine screw systems, including twin, contra-rotating, controllable-pitch, and nozzle-style screws. While smaller vessels tend to have a single screw, even very large ships such as tankers, container ships and bulk carriers may have single screws for reasons of fuel efficiency. Other vessels may have twin, triple or quadruple screws. Power is transmitted from the engine to the screw by way of a propeller shaft, which may or may not be connected to a gearbox.

Deficiency examples:

- On STBD main engine fuel leakage. Can not be defined where the leakage problem occurred
- Propulsion main engine – Not as required: Some of fuel oil and lubricating oil leakages on main engine
- Main and auxiliary machinery were defective, e.g. water leakage from main engine cylinder head, fuel oil leakage from diesel generator engine cylinder head, etc.
- Main engine high pressure jacketed fuel oil pipes are defective, e.g. holed or broken

On Board Training and Instructions related deficiencies

Training

Before being assigned to shipboard duties, all persons employed or engaged on a seagoing ship other than passengers, shall receive appropriate familiarisation training in compliance with Reg VI/1 of the STCW95 Convention. This training is in addition

to other shore based training required under the STCW95 Convention.

Crew members allocated specific key tasks for the preparation, launching and handling of lifeboats, rescue boats, liferafts and marine evacuation systems should be trained in these specific tasks. Such training should also be given to a sufficient number of crew members to provide substitutes for the crew members allocated these key tasks in the muster list.

Training given on board is primarily concerned with the particular life-saving equipment carried and is supplementary to shore based training given on personal survival techniques, on proficiency in survival craft and rescue boat, and training-courses organised by individual owners. The training should include ship specific practices such as the normal sequence for preparing and safely deploying evacuation systems, launching lifeboats and liferafts, and all other factors which determine rate of evacuation, and may also cover alternatives to the normal sequence of deployment.

Instructions

Where on-board training cannot be given in the use of certain items of life-saving equipment because of practical considerations, on-board instructions in the use of such equipment is required to be given at the same intervals as the drills.

The programme of instructions must be so arranged that every subject to be covered, including all parts of the ship's life-saving systems can be treated within a two month period. In order to carry out this programme in cargo ships, the frequency of holding drills may have to be increased beyond that necessary to ensure that every crew member participates in an abandon ship and fire drill every month. Frequent short periods of instruction dealing with a limited number of items will be more effective than long sessions dealing with a considerable amount of subject matter and held say at monthly intervals.

In ships with significant numbers of nonEnglish speaking crew members, copies of the full training manual or relevant sections should be provided in the appropriate language or languages.

Deficiency examples:

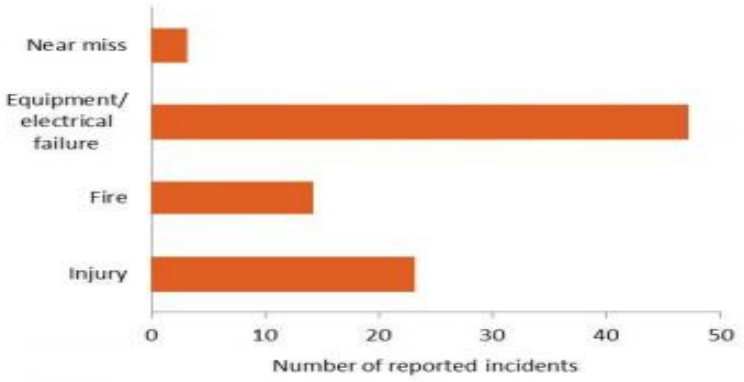
- Absense of training manual in messroom and recreation room
- Inadequate actions of personnel in fire-fighting drill
- Inadequate knowledge of personnel about their duties in emergency situation
- Muster list not filled properly

Deficiencies related to Electrical equipment

The possible effects of electrical failure:

- Electrical hazards can lead to deaths and injuries such as shocks and burns.
- They can also lead to shipboard fires, explosions and the disabling (through blackouts) of essential equipment and services on board which can compromise safety.

A study reveals that, between 2011 and 2015, a total of 87 electrical related incidents were reported. The basic cause of these incidents are categorised into injuries (23), fires (14), equipment/electrical failures (47) and near misses (3).



Primary outcomes of electrical related incidents reported, 2011-15 (source: AMSA)

Control Measures at the technical level

- Equipment design (ensuring safe design)
- Appropriate warning signs are in place including proper labelling for tag/lockouts
- Appropriate use of surge protective devices
- Ensure electrical systems are properly isolated when required
- Carry out regular insulation testing
- Ensure there are clear and concise manuals for use of electrical equipment

Deficiency examples:

- Open electrical boxes or panels exposing wires
- Out of date or no hot work permit
- Items blocking electrical disconnects or circuit breaker boxes
- Use of unapproved extension cords

Deficiencies related to Records of seafarers' daily hours of work or rest

A record must be kept of the seafarers daily hours of rest, the principal purpose for the record being to allow monitoring and provide documentary evidence of compliance with the minimum hours of rest requirements, and to record any deviations from the requirements.

The Isle of Man Ship Registry has developed a standard format for the record of daily hours of rest, based on ILO Guidelines, and is provided under Annex II, Record of Hours of Rest. As with the table of shipboard working arrangements, shipowners are free to develop their own company forms provided that such records maintain the required information.

Any breaches or deviations of the hours of rest must be shown and also any compensatory rest periods given in lieu or in advance of any unavoidable minor deviations.

The records of daily hours of rest shall be maintained in English to comply with having them available for inspection by Isle of Man Ship Registry inspectors and port state control officers. Each seafarer shall receive a copy of the records, generally monthly, pertaining to him or her, which shall be endorsed by the Master, or a person authorised by the Master, and by the seafarer.

Deficiency examples:

- Hours of rest of 2 A/B seafarers don't match the hours of the conducted Enclosed Space Entry drill
- 76 hours of work in a seven-day period (max 72hrs)
- 8 hours of rest in a 24-hour period

Deficiencies related to Emergency lighting, batteries and switches

The emergency sources of electrical power shall supply to emergency lighting; for a period of 18 hours to the following:

1) Accommodation, alleyways, stairs, exits, lifts and lifts trunks.

2) In machinery spaces and main generating stations

3) ECR, CCR, main and emergency switchboards

4) Fire control stations, at S/G, at fire pumps, sprinkler pumps, etc.

5) Cargo pump rooms

Where the emergency source of electrical power is accumulator battery, it shall be capable of:

- The emergency switchboard shall be installed as near as is practicable to the emergency source of electrical power.
- The emergency switchboard shall be supplied during normal operation from the main switchboard by an interconnector feeder which is to be adequately protected at main switchboard against overload and shot circuit and which is to be disconnected automatically at the emergency switchboard upon failure of main source of electrical power.
- If the system is arranged for feedback operation, the interconnector feeder is also to be protected at the emergency switchboard at least again short circuit.
- There shall be a provision made for periodic testing of the computer emergency system and shall include the testing of automatic starting arrangements.
- The emergency generator and its primary move/ any emergency accumulator battery shall be so designed to operate at full rated power when the ship is up righted & when inclined at any angle of list up to 22.5° or when inclined up to 10° either in fore & aft direction or is in any combination of angle within those limits.

Emergency Switchboard
Emergency switchboard is a switchboard which, in the event of failure of the main system of electrical power supply, is directly supplied by the emergency source of electrical power and/or the transitional source of emergency power and is intended to distribute electrical energy to the emergency services.

Deficiencies related to Fire detection and Alarm system

Fire detection systems are a vital part of the firefighting systems on most vessels.

Fire detectors are designed to provide a visible and audible alarm on the vessel to indicate the location of a fire. The detectors throughout the ship are wired to a fire control panel that provides visual and auditory alerts and possibly alarms in other parts of the vessel as well.

When tripped, detectors send a signal to the fire control panel in a location manned around the clock, usually on the bridge. There may also be fire alarm panels in other manned spaces, such as the engine room or the gangway, which may be the only manned spaces at times when the vessel is in port.

Depending on the type of fire control system, the alarm signal may generate an automatic activation of the fire suppression system, but most often the alarm will be investigated before the crew activates the suppression devices.

There are only five U.S. Coast Guard-approved shipboard fire detection systems. Of these, four are automatic alarms, smoke detectors, manual alarm boxes only and manual/automatic systems. The fifth type is the crew on watch who can raise an alarm using the manual pull boxes or by other means.

Deficiency examples:

- 3 fire detectors of a fire detecting section are defective
- Whistle for emergency fire alarm non-fuctional

Freeboard Marks related deficiencies

The fundamental purpose of a Load Line is to allot a maximum legal limit upto which a ship can be loaded. By prescribing such limits, the risk of having the vessel sailing with inadequate freeboard and buoyancy can be limited. A vessel should be having sufficient freeboard at all times, any exceptions made will result in insufficient stability and excessive stress on the ship's hull. This is where load lines play an important role, as it makes the task of detecting whether the vessel is over-loaded and it's freeboard tremendously easy and effortless.

However, since the buoyancy and immersion of the vessel largely depends on the type of water and it's density, it is not practical to define a standard freeboard limit for the ship at all times. For this reason, the convention has put regulations which divides the world into different geographical zones each having different prescribed load line.

For example, a vessel sailing in Winter on North Atlantic Ocean will have a greater freeboard than on a voyage in Tropical Zones and Fresh waters.

S – Summer :- It is the basic freeboard line at the same level as the Plimsol Line. Other load lines are marked based on this Summer freeboard line.

T – Tropical :- It is $1/48^{th}$ of summer draft marked above the Summer load line.

W – Winter :- It is $1/48^{th}$ of summer draft marked below the Summer load line.

WNA – Winter North Atlantic :- It is marked 50mm below the Winter load line. It applies to voyages in North Atlantic (above 36 degrees of latitude) during winter months.

F – Fresh Water :- It is the summer fresh water load line. The distance between S and F is the Fresh Water Allowance (FWA).

TF – Tropical Fresh Water :- It is the fresh water load line in Tropical. It is marked above the T at an amount equal to FWA.

Certification

Every ship that has been surveyed and marked in accordance with the present Load line convention are issued by the authorized administration, an International Load Line Certificate. The certificate will have a validity of not more than 5 years and will contain all vital information that includes the assigned freeboard and fresh water allowance.

Deficiency examples:

- W- Winter and WNA- Winter North Atlantic load linemarks not clearly visible
- Forward Stbd and Aft Stbd drafts missing some digits

Continuous Synopsis Record related deficiencies

The continuous synopsis record provides an onboard record of the history of the ship with respect to the information recorded therein.
Continuous synopsis record (CSR) is issued by the administration of the ship, which would fly its flag.

Following details should be present in the continuous synopsis record (CSR)

- Name of the ship
- The port at which the ship is registered
- Ship’s identification number
- Date on which ship was registered with the state

- Name of the state whose flag the ship is flying
- Name of registered owner and the registered address
- Name of registered bareboat charterers and their registered addresses
- Name of the classification society with which the ship is classed
- Name of the company, its registered address and the address from where safety management activities are carried out
- Name of the administration or the contracting government or the recognized organization which has issued the document of compliance, specified in the ISM code, to the company operating the ship.
- Name of the body which has carried out the audit to issue the document of compliance
- Name of the administration or the contracting government or the recognized organization which has issued the safety management certificate (SMC) to the ship and the name of the body which has issued the document
- Name of the administration or the contracting government or the recognized organization which has issued the international ship security certificate, specified in the ISPS code, to the ship and the name of the body which has carried out the verification on the basis of which the certificate was issued
- The date of expiry of the ship's registration with the state

Any changes made related to the above mentioned points should be mentioned in the continuous synopsis record. Officially, the record should be in English, Spanish, or French language; however, a translation in the language of the administration may be provided.

The continuous synopsis record shall always be kept on board ship and shall be available for inspection all the time.

The Continuous Synopsis Record (CSR) is mentioned in SOLAS –Chapter XI-1.

Deficiency examples:

- Difference in company names or addresses between the continuous synopsis record and the document of compliance
- Difference in the information between the continuous synopsis record and the international safety management certificate issued under the international safety management code

Deficiencies related to Lifebuoys incl. provision and disposition

SOLAS Regulations For Lifebuoys:

- Not less than one half of the total number of lifebuoys shall be provided with lifebuoy self-igniting lights;
- not less than two shall also be provided with lifebuoy self-activating smoke signals and be capable of quick release from the navigation bridge;
- lifebuoys with lights and those with lights and smoke signals shall be equally distributed on both sides of the ship;
- SIZE: Inner diameter should not be less than 400 mm or 16 inch Outer diameter should not be more than 800 mm or 32 inch
- WEIGHT: total mass must not be less than 2.5 kg not be more than 6 kg
- MADE: Inherently buoyant material
- COLOUR: internationally ORANGE in color, highly visible.
- ACCESSORIES:

    i. Retro reflective tape (Retro-reflective tape reflects the light in the opposite direction when a beam of light is directed on it from any angle)

    ii. Grab line:

        - Its diameter must not be less than 9.5 mm and length of line not be less than 4 times the outer diameter of body in length.
        - It must be secured at 4 equidistant points around the life buoys.

    iii. Self igniting light:

-be such that they cannot be extinguished by water, White in colour -Capable of burning continues & its luminous intensity not be less than 2 cd (candela) having min 50 and max 70 flashes per minute for a period of 2 hour, operated battery type.

iv. Buoyant life line:

- Non-kinking type
- Diameter not be less than 8 mm
- Breaking strength not be less than 5 KN

v. Self igniting light:.

- -Smoke colour is ORANGE. Highly visible
- -Capable of quick release from the height of 30 m or lightest seagoing condition.
- -not ignite explosively or emit any flame.
- -Burning period is atleast 15 minute.

- It is capable of supporting not less than 14.5 kg of iron in fresh water for a period of 24 hour.
- It shall not sustain burning or continues melting after being totally enveloped in a fire for a period of 2 sec.
- be constructed to withstand a drop into the water from the height at which it is stowed above the waterline in the lightest seagoing condition or 30 m, whichever is the greater, without impairing either its operating capability or that of its attached components.
- Markings "PORT OF REGISTRY" of ship.

Deficiency examples:

- Man over board (MOB) lifebuoy smoke signal expired
- Lifebuoys found with damaged or total luck of reflective tape
- Lifebuoys found with not clear marking of port of registry

Other (fire safety) related deficiencies

During the period 2006-2008, 1216 people were reported killed or missing as a result of 465 incidents of fire and explosions on board merchant seagoing ships of 100gt and above. 988 of these deaths were from a single incident. It is essential that crew are appropriately trained to inspect, maintain and operate equipment and

that the equipment ready for use at all times.
Being prepared can mean the difference between lives lost or lives saved.

Below is a checklist of things to be checked in order to avoid safety or fire related accidents and vessel's detention by PSC:

1. ❑ **Fire dampers and ventilators**
   - clearly marked open/close, easy to operate and seal effectively
   - locking pins can be easily removed
   - handles and wire are in good condition
   - machinery flaps and ventilators close correctly
   - skylights close from local and remote positions
   - ventilator flame screens are in good condition

2. ❑ **Means of escape**
   - clearly marked
   - ladders and hatches are in good condition
   - trunks, alleyways and stairways are unobstructed
   - emergency lighting operates correctly
   - exits are capable of being opened quickly from inside and outside

3. ❑ **Fire fighting equipment and appliances**
   - all fire appliances are located in compliance with the fire control plan
   - all fire hoses are of non-perishable material, are in good condition with no leaks and are pressure tested regularly
   - fire mains and hydrants and piping for fixed systems are maintained in good condition with no leaks
   - all nozzles are operable and, where required for tankers, are of dual purpose type (i.e. spray/jet type), incorporating a shut-off
   - hoses, nozzles and tools are all correctly stowed and fire boxes are in good condition
   - where installed, sand boxes are full and scoops are in place

4. ❑ **Personal equipment**
   - SCBA and EEBD are readily available and fully charged
   - fire fighters' outfits are complete and readily available

5. ❑ **Fire doors**
   - free of obstructions
   - self-closing and free from non-approved hold open methods such as tie-backs, hooks, wedges, or other such arrangements

6. ❑ **Fire detection**
   - detection systems are operable on emergency power
   - test detectors regularly
   - ensure spare heads are available
   - control panels function correctly

7. ❑ **Fire alarm**
   - audible and visual indications function correctly

8. ❑ **Fixed fire extinguishing systems and installation**
   - clearly marked, readily accessible control stations
   - gas release alarm, including time delay for the extinguishing medium, is operating satisfactorily
   - clear instructions for operation are posted and in a language understood by the crew
   - pipework is in good condition and nozzles, hoses and valves (depending on systems) operate correctly

Deficiency examples:

- 2 Portable fire extinguishers were not inspected as they should and the indicator shows no pressure
- Fire dampers not maintained well, very hard to open/close them manually
- Luck of "No-smoking" signs in areas where smoking is not permitted

Conclusion

The whole idea of the port state control is to give no operating space to the sub-standard ships.

The only way to eradicate the sub-standard ships is to inspect the ships. But no port state can have so many resources to inspect each ship that call their ports.

Having regional cooperation between different port states (PSC MoUs) eliminated the need for inspecting each ship.

Port state controls under the same MoU shared the ship inspections results with a common database.

Assigning a risk factor to each ship set the priority for inspection of a ship. With this, the ships with higher risk profile were given a priority for inspection over the ships with lower risk profile.

The main purpose of the PSC is not to find deficiencies and detain a vessel, but to make ships a safe and secure working and living environment by encouraging seafarers to follow regulations that are beneficial for them and for the environment!

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