

Guidelines for PSCOs on the Inspection Campaign on MARPOL ANNEX VI

Introduction

General

- Air pollution from ships contributes to overall air quality problems in many areas and affects the natural environment. Pollution by sulphur and nitrogen oxides in fuel contributes to acid rain, increased eutrophication and reduced air quality.
- Following international cooperation in the combat against acid rain and ozone-depleting substances, the IMO, through the MEPC, included the issue of air pollution in its work programme. As a result of the work, through the Protocol of 1997, Annex VI has been included in the MARPOL Convention.
- MARPOL Annex VI sets limits on sulphur- and nitrogen oxide emissions from ship exhausts and prohibits deliberate emissions of ozone-depleting substances and volatile organic compounds.
- Furthermore, a new set of requirements stipulated in Annex VI of MARPOL (2008), with a strict limit on the sulphur content of marine fuels, entered into force on 1 January 2015 in SECAs. The requirement reduced the maximum sulphur content by 90 per cent in the area. The price of cleaner fuel is currently significantly higher than that of conventional fuel, which means that non-compliance would give ship owners a considerable competitive advantage and consequently reduce the environmental impact of the regulation.
- Effective and uniform enforcement is a prerequisite for ensuring cleaner air and the full environmental impact of the regulation. In practice, this requires a high priority on enforcement and strong and effective cooperation between national port State control authorities.

Purpose

The purpose of the campaign on MARPOL Annex VI is:

- to establish the level of compliance with the requirements of MARPOL Annex VI within the shipping industry;
- to create awareness amongst ship crews and ship owners with regards to the importance of compliance with the provisions of MARPOL Annex VI and the prevention of air pollution;
- to send a signal to the industry that prevention of air pollution and enforcement of compliance with applicable requirements is high on the agenda of the PMoU member States;
- to underline the responsibility of the Port State Control regime with regards to harmonised enforcement of compliance with the requirements of MARPOL Annex VI, thus improving the level of compliance and ensuring a level playing field.

References

- MARPOL Annex VI, as amended.
- Paris MoU PSCC Instruction – Guidelines for Port State Control Inspections for Compliance with Annex VI of MARPOL Regulations for the Prevention of Air Pollution from Ships.

Inspection

The inspection must be performed in accordance with the PMoU procedures. The campaign does not affect the type of inspection to be conducted in accordance with the procedures. The campaign consists of a list of questions to be answered in addition to the regular inspection. The CiC does not limit the PSCO in the course of the regular inspection to check further compliance with MARPOL. Where additional information is to be sought or consulted, the PSCO is guided by the following guidance.

In arriving at a "YES" or "NO" answer to each of the questions of the questionnaire, the following should be considered:

- Should a question be answered "NO", a deficiency using the appropriate deficiency code listed in the guidance to the question must be used on the report of inspection Form "B".
- A "NO" answer in the questionnaire should not automatically lead to detention of the ship. In this case, the PSCO should use his/her professional judgment to determine whether the vessel should be considered for detention.
- The column "N/A" is to be used only if the question is not applicable to the vessel and consequently the question cannot be answered.

Questionnaire guidance

Q 1 – Are bunker delivery notes, with details of fuel oil for combustion purposes, kept available on board for the required period of 3 years?

On ships of 400 gross tonnage and above, and on fixed or floating drilling rigs and other platforms, bunker delivery notes for fuel used for combustion purposes shall be kept on board.

The PSCO should check:

- That a representative selection of bunker delivery notes from the past three years has been correctly filled in and is below the limit (MARPOL Annex VI, regulation 18.7.1).
- In case the bunker delivery note as required by regulation VI/18 presented to the ship is not in compliance with the relevant requirements regarding the Sulphur content and the declaration of fuel conformity, the master or officer in charge of the bunker operation should have documented this through a notification to the ship's flag Administration with copies to the port authority under whose jurisdiction the ship did not receive the required documentation pursuant to the bunkering operation and to the bunker deliverer. A copy should be retained on board the ship, together with any available commercial documentation, for subsequent scrutiny in connection with port State control (MARPOL Annex VI, regulation 18.2.4).

Requirements:

The sulphur content of any fuel oil used on board ships must not exceed 3.50% m/m. For ships operating within an emission control area, the sulphur content of fuel oil used on board ships must not exceed 0.10% m/m.

A ship must notify its Administration and the competent authority of the relevant port of destination when it cannot purchase compliant fuel oil. The ship must be able to provide evidence that it attempted to purchase compliant fuel oil in accordance with its voyage plan and, if it was not made available where planned, that attempts were made to locate alternative sources for fuel oil and that, despite best efforts to obtain compliant fuel oil, no such fuel oil was made available for purchase.

Details of fuel oil for combustion purposes delivered to and used on board must be recorded by means of a bunker delivery note that must include the following:

- Name and IMO number of receiving ship.
- Port.
- Date of commencement of delivery.
- Name, address and telephone number of marine fuel oil supplier.
- Product name(s).
- Quantity in metric tonnes.
- Density at 15°C, kg/m³
- Sulphur content (% m/m).
- A declaration signed and certified by the fuel oil supplier's representative that the fuel oil supplied is in conformity with the applicable paragraph of regulation 14.1 or 14.4 and regulation 18.3 of MARPOL Annex VI.

The bunker delivery note must be kept on board the ship for a period of three years after the fuel oil has been delivered on board.

The PSCO may make a copy of bunker delivery notes and may require the master to certify that each copy is a true copy of such bunker delivery note. The PSCO may also verify the content of

each note through consultations with the port where the note was issued.

If inspecting ships not using fuel oil for combustion purposes e.g. LNG or battery powered ships the question should be answered with N/A.

Convention reference: Annex VI, regulation 18.5/18.6.

Deficiency code: 14604 – Bunker delivery notes.

Nature of defect: Missing, Not as required, Not familiar.

Suggested action taken: 17.

Q 2 – Do bunker delivery notes indicate that fuel oils delivered and used on board is not exceeding the maximum allowed sulphur content, as appropriate?

The PSCO should check:

- Whether the quality of fuel oil used on board the ship has a sulphur content of or below 3.50% m/m (MARPOL Annex VI, regulation 14.1.2) or 0.10 % depending on the sailing area.
- Correspondence between the bunker delivery notes and the ship's Oil Record Book in accordance with MARPOL Annex I (MARPOL Annex I, regulations 17.2.5 and 17.4).

Requirements:

The sulphur content of any fuel oil used on board ships must not exceed 3.50% m/m. For ships operating within an emission control area, the sulphur content of fuel oil used on board ships must not exceed 0.10% m/m.

Bunkering of fuel oil must be recorded in the Oil Record Book Part I. Each completed operation must be signed by the officer(s) in charge of the operations concerned and each completed page must be signed by the master of the ship.

The PSCO may make a copy of any entry in the Oil Record Book Part I and may require the master to certify that the copy is a true copy of such entry.

Convention reference: Annex VI, regulations 14.1.2 and 14.4.3.

Deficiency code: 14617 – Sulphur content of fuel used.

Nature of defect: Not as required.

Suggested action taken: 17, Ground for detention (tick box).

Q 3 – Do ships which are using separate fuel oils to comply with the maximum sulphur content of 0.10% m/m in fuel oil while operating in SO_x emission control areas, have a written procedure showing how fuel oil change-over is to be done for achieving compliance with the above requirements when entering SO_x emission control areas?

In case the ship never enters an ECA use the N/A tick box.

The PSCO should check:

- That a written procedure is readily available on board.

Requirements:

All ships when entering or leaving in an Emission Control Area, and using separate fuel oils to comply with the sulphur limits of fuel oil in an ECA, must have a written procedure showing how the fuel change-over is to be done.

Regulation 14.6 of the MARPOL Annex VI does not require that the written procedure must be in English. Thus, the shown procedure might be in a language that the PSCO cannot read. However, it is not the purpose of the question to assess the written procedure. The intention with the question is to assure that a written procedure is on board.

Convention reference: Annex VI, regulation 14.6.

Deficiency code: 14615 – Fuel change-over procedure.

Nature of defect: missing.

Suggested action taken: If the vessel is in the ECA or will enter the ECA within 14 days – 17, 16.
If the vessel is outside the ECA and will not enter the ECA within 14 days
– 16

Q 4 – Are alternative arrangements, (e.g. scrubbers) installed on board according to regulation 4.1 approved by the flag State?

The PSCO should check:

- If the ship's Administration has allowed an alternative arrangement that may be equivalent to the standards in MARPOL Annex VI, regulations 13 and 14 (MARPOL Annex VI, regulation 4.1).
- If such an alternative arrangement has been communicated to the Organization/IMO (MARPOL Annex VI, regulation 4.2).

Requirements:

The Administration of a Party may allow any fitting, material, appliance or apparatus to be fitted in a ship, or other procedures, alternative fuel oils, or compliance methods used as an alternative to that required by MARPOL Annex VI if such fitting, material, appliance or apparatus, or other procedures, alternative fuel oils, or compliance methods are at least as effective in terms of emission reductions as that required by MARPOL Annex VI, including any of the standards set forth in regulations 13 and 14.

The Administration that allows a fitting, material, appliance or apparatus or other procedures, alternative fuel oils, or compliance methods used as an alternative to that required by MARPOL Annex VI must communicate this to the Organization for circulation to the Parties for their information.

An equivalent arrangement approved by the Administration must be recorded in 2.3.1.2 and/or 2.3.2.2 of the *Record of construction and equipment* to the *International Air Pollution Prevention Certificate* (IAPP Certificate).

Any fitting, material, appliance or apparatus to be fitted in a ship or other procedures, alternative fuel oils, or compliance methods used as an alternative to that required by MARPOL Annex VI must be recorded in 2.6 of the *Record of construction and equipment* to the *International Air Pollution Prevention Certificate* (IAPP Certificate).

Convention reference: Annex VI, regulation 4.1.

Deficiency code: 14699 – Other (MARPOL Annex VI).

Nature of defect: Other.

Suggested action taken: 17, 16, Ground for detention (tick box).

Q 5 – Do ships which are using separate fuel oils to comply with the maximum sulphur content of 0.1% m/m in fuel oil and entering or leaving SOx emission control areas, record detailed information showing that the ship has completed/initiated the change-over in the logbook prescribed by the Administration?

In case the ship never enters an ECA use the N/A tick box.

The PSCO should check:

- that the recorded information related to the change-over of fuel is complete;
- that the recorded dates, times and ship's positions match the information to be found in the deck- and/or engine room logbooks;

- that the volumes of low sulphur fuel oils recorded at entering and exiting the ECA match the consumption figures of fuel oil as recorded in the engine room logbooks or other relevant documents (i.e. does the recorded amount of fuel in the tanks at exit of the ECA or at arrival at the port minus the recorded amount of fuel in the tanks at entry of the ECA match the (estimated) fuel consumption of the vessel).

Requirements:

Ships using separate fuel oils to comply with the sulphur limits in an ECA must have fully changed over to ECA compliant fuel before entering the ECA, and must not change over from ECA compliant fuel until after exiting the ECA.

When entering or exiting an ECA, the following information must be recorded in a logbook as prescribed by the ship's flag Administration or, in the absence of specific requirements from the flag State, in an appropriate logbook (e.g. in the oil record book or the engine room logbook):

- Date
- Time
- Position of the ship
- Volume of low sulphur fuel oils in each tank

The information must be recorded at the time of completion of the change-over when entering an ECA and at the time of commencement of the change-over when exiting an ECA.

When the vessel makes use of an alternative arrangement instead of separate fuel oils to comply with the sulphur limits in ECAs, the question should be answered with N/A.

Convention reference: Annex VI, regulation 14.6.

Deficiency code: 14612 – SOx records recording.

Nature of defect: not as required, entries missing.

Suggested action taken: 99 - Master instructed to assure compliance from date of inspection.

Q 6 – Do ships which have rechargeable systems containing ozone-depleting substances (refer to the supplement to the IAPP Certificate, item 2.1), have the ozone-depleting substances record book maintained?

The PSCO should check that:

- the ship has an ozone-depleting substances record book (MARPOL Annex VI, regulation VI/12.6);
- there are effectively implemented maintenance procedures for the equipment containing ozone-depleting substances;
- the master or crew is familiar with the procedures to prevent emissions of ozone-depleting substances; and
- there are no deliberate emissions of ozone-depleting substances.

Requirements:

Installations containing ozone-depleting substances, other than hydro-chlorofluorocarbons, have been prohibited since 19 May 2005. All ships fitted with rechargeable systems containing ozone-depleting substances are required to maintain an ozone-depleting substances record book.

Each ship subject to regulation 6.1 which has rechargeable systems containing ozone-depleting substances must maintain an ozone-depleting substances record book. This record book may form part of an existing log-book or electronic recording system as approved by the Administration.

Entries in the ozone-depleting substances record book are to be recorded in terms of mass (kg) of substance and must be completed without delay on each occasion, in respect of the following:

- .1 recharge, full or partial, of equipment containing ozone-depleting substances;
- .2 repair or maintenance of equipment containing ozone-depleting substances;
- .3 discharge of ozone-depleting substances to the atmosphere:
 - .3.1 deliberate; and

- .3.2 non-deliberate;
- .4 discharge of ozone-depleting substances to land-based reception facilities; and
- .5 supply of ozone-depleting substances to the ship.

Convention reference: Annex VI, regulation 12.6.

Deficiency code: 14611.

Nature of defect: Not as required; Documentation missing; Not familiar; Not properly maintained; Damaged; Inoperative.

Suggested action taken: 17, 99.

Q 7 – Where an Approved Method in accordance with Annex VI, regulations 13.7.1-13.7.5 (refer to the supplement to the IAPP Certificate, item 2.2.1) is installed, has such an installation been confirmed by a survey using the verification procedure specified in the Approved Method File, including appropriate notation on the ship’s International Air Pollution Prevention Certificate of the presence of the Approved Method?

The PSCO should check that:

- examination if diesel engines, with a power output of more than 5,000 kW and a per cylinder displacement at or above 90 litres are installed on a ship constructed on or after 1 January 1990 but prior to 1 January 2000 and an Approved Method for that engine has been certified by an Administration and was commercially available,
- a diesel engine, with a power output of more than 5,000 kW and a per cylinder displacement at or above 90 litres, which is installed on board a ship constructed on or after 1 January 1990 but prior to 1 January 2000, and an Approved Method for that engine has been certified by an Administration and was commercially available, for which an Approved Method is not installed after the first renewal survey specified in regulation VI/13.7.2,
- the Approved Method File (regulation VI/13.7),
- the master or crew is familiar with the proper operation and maintenance of the diesel engines, in accordance with their T Approved Method file, as applicable, with due regard being paid to NOx Emission Control Areas.

Requirement:

Marine diesel engines installed on a ship constructed prior to 1 January 2000.

A marine diesel engine with a power output of more than 5,000 kW and a per cylinder displacement at or above 90 litres installed on a ship constructed on or after 1 January 1990 but prior to 1 January 2000 must comply with the emission limits set forth in MARPOL Annex VI, regulation 13, subparagraph 7.4, provided that an Approved Method for that engine has been certified by an Administration of a Party and notification of such certification has been submitted to the Organization by the certifying Administration. Compliance with this paragraph must be demonstrated through one of the following:

- .1 installation of the certified Approved Method, as confirmed by a survey using the verification procedure specified in the Approved Method File, including appropriate notation on the ship’s International Air Pollution Prevention Certificate of the presence of the Approved Method; or
- .2 certification of the engine confirming that it operates within the limits set forth in MARPOL Annex VI, regulation 13, paragraph 3, 4, or 5.1.1 and an appropriate notation of the engine certification on the ship’s International Air Pollution Prevention Certificate.

Convention reference: Annex VI, regulation 13.7.1.1.

Deficiency code: 14613.

Nature of defect: Not as required, Missing.

Suggested action taken: 17, 16

Q 8 – For ships equipped with a shipboard incinerator or thermal waste treatment device installed as an alternative arrangement, is the ship’s crew responsible for the operation of the equipment familiar with, properly trained in, and capable of implementing the guidance provided in the manufacturer’s operating manual?

The PSCO should check:

- if the crew responsible for the operation of the incinerator is familiar with the guidance and instructions given by the manufacturer.

Requirements:

Personnel responsible for the operation of a shipboard incinerator installed on or after 1 January 2000 must be trained to implement the guidance provided in the manufacturer's operating manual.

The PSCO should identify the responsible crew and determine how the crew is trained. The PSCO should inquire the identified responsible crew about the process of operating the equipment, the operational requirements outlined in the operation manual, the parameters to be controlled during operation and verify familiarity with the limitations on the substances allowed to be incinerated. The PSCO should use his professional judgment when assessing the information received from the crew against the information found in the manual to determine whether the crew is trained, familiar and capable.

If a manufacturer's operating manual is not available the answer to question 8 should be NO.

Care should be taken to not have an incinerator in operation where this is prohibited by local regulations.

Convention reference: Annex VI, regulations 16.8.

Deficiency code: 14608 – Incinerator incl. operations and operating manual.

Nature of defect: not familiar.

Suggested action taken: 17.

Q 9 – Are the master and crew familiar with essential shipboard procedures in the approved VOC Management Plan relating to the prevention of air pollution from ships?

The PSCO should check:

- If the master and the crew are familiar with essential shipboard procedures in the approved VOC Management Plan.

Requirements:

A tanker carrying crude oil is required to have implemented a VOC Management Plan.

The VOC Management Plan should contain ship specific procedures, which are optimized to minimise the release of VOC emissions. These procedures are related to the loading, carriage and discharge of cargo and crude oil washing. The plan should also identify, and describe the use of, VOC reduction devices or equipment, if applicable.

Procedures should be available for the operation of the ship during loading of the cargo, during transit, during discharge of the cargo and during COW operations. The person responsible for the VOC management onboard, and the implementation of the plan, should be fully conversant with the content of the plan. Other crewmembers responsible for cargo operations or COW operations should be familiar with the procedures in the plan.

If no approved VOC Management Plan available, the answer to question 9 should be NO.

Convention reference: Annex VI, regulation 15.6.

Deficiency code: 14609 – Volatile Organic Compounds in tankers.

Nature of defect: not as required, missing.

Suggested action taken: 17, Ground for detention (tick box).

Q 10 – Does the ship keep on board a Ship Energy Efficiency Management Plan (SEEMP)?

Regulation 22 requires that each ship of 400 gross tonnage and above shall keep on board a ship specific Ship Energy Efficiency Management Plan (SEEMP). This may form part of the ship's Safety Management System (SMS).

The PSCO should control the general availability of the SEEMP.

Within the scope of the CiC the PSCO is not supposed to check the content of the plan. The SEEMP might be in a language not understood by the PSCO.

Convention Reference: Annex VI, regulation 22 paragraph 1,
Deficiency code: 01328 - Ship Energy Efficiency Management plan
Nature of defect: Missing.
Suggested action taken: 17.

Q 11 – Has the ship been detained as a result of the Inspection Campaign?

Regarding the questionnaire, if the box “No” is ticked off for questions marked with an “**”, the deficiency found should be considered a serious breach of the MARPOL Annex VI requirements and the ship may be considered for detention.

If a ship is detained as a result of deficiencies found among the items listed in the questionnaire, PSCOs should answer “Yes” to question 11.