



INTERTANKO

TWENTY
18

2020 Bunker Clauses

**INTERTANKO Bunker Compliance
Clause for Time Charterparties**

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2020 Bunker Clauses
INTERTANKO Bunker Compliance
Clause for Time Charterparties

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Contents

Overview	2
INTERTANKO Bunker Compliance Clause for Time Charterparties – Full Text	3
Commentary	6
INTERTANKO Bunker Compliance Clause for Time Charterparties	
General Provisions	6
Transitional Provisions for 2019/2020	7
Additional Provisions – For Vessels to be redelivered in 2019	7
Additional Provisions – For Vessels to be redelivered after 31 December 2019	8
In summary	8
Q&As on 2020 Bunker Issues	
<i>What are the general requirements for sulphur content of fuel oil under MARPOL Annex VI now and after 1 January 2020?</i>	10
<i>What happens between 1 January 2020 and the entry into force of the amendments to MARPOL Annex VI on 1 March 2020?</i>	10
<i>What are the sulphur limit requirements for trading in Emission Control Areas under MARPOL Annex VI now and after 1 January 2020?</i>	11
<i>What does MARPOL Annex VI Regulation 18.3 deal with?</i>	11
<i>What does SOLAS Chapter II-2 Regulation 4.2.1.1. say?</i>	12
<i>What about other local, regional and national laws?</i>	12
<i>What does ‘compatibility’ mean?</i>	12
<i>What about fuel testing?</i>	12
<i>What is the current ISO 8217 standard and does it cover the 0.50% Sulphur Cap?</i>	12
<i>What does MARPOL Annex VI say about Bunker Delivery Notes?</i>	13
<i>What does MARPOL Annex VI say about samples?</i>	14
<i>Why is there need for a ‘fit for purpose’ provision in a charterparty clause?</i>	14
<i>When (and where) will bunker suppliers be registered?</i>	14
<i>Why should Charterers indemnify Owners for supply of non-Compliant Bunkers?</i>	15
<i>How do Charterers protect themselves from the supply of non-Compliant Bunkers by their bunker supplier?</i>	15
<i>What will happen to fuel on board at the end of 2019?</i>	16
<i>How do I prepare my Vessel for the 0.50% Sulphur Cap?</i>	17
<i>The HSFO Carriage Ban will be implemented two months after the 0.50% Sulphur Cap – why?</i>	17
<i>Why are there separate clauses from INTERTANKO and BIMCO?</i>	18
<i>Is there a charterparty clause for scrubbers?</i>	18
Appendix I: MEPC.1/Circ.878 – Ship Implementation Plan for the Consistent Implementation of the 0.50% Sulphur Limit Under Marpol Annex VI	19
Appendix II: BIMCO 2020 Clauses	31

Overview

The introduction of a 'Global Sulphur Cap' of 0.50% m/m for fuel oil under MARPOL Annex VI has caused much debate, including concerns about the availability of compliant bunkers, compatibility, and problems with blending activity to produce fuels with the low sulphur limit required to be used by ships from 1 January 2020.

Owners are required to ensure they comply with the revised provisions of MARPOL Annex VI and any other local laws or regulations that likewise may deal with sulphur limits and bunkering. However, in a time charter, it is Charterers who supply the fuel. It is therefore essential that Owners insert a clause in their time charterparties to ensure that Charterers also comply with this revised regime.

The quality of bunkers is both a regulatory and commercial issue. Owners are faced not only with issues of compliance with regulations, including MARPOL Annex VI, where failure to do so can result in sanctions and fines, but also with quality issues where bunkers supplied may otherwise be 'off spec'. This can cause problems for Owners as evidenced by the recent spate of quality issues with bunkers emanating from the US Gulf and elsewhere.

INTERTANKO's Documentary Committee has revised the *INTERTANKO Bunker Emissions Clause*, published in 2005, to take account of changes in regulation, in particular the 2020 sulphur requirements of MARPOL Annex VI; but also to deal with bunker quality and best practice in bunkering for both Owners and Charterers. The revised Clause, the *INTERTANKO Bunker Compliance Clause for Time Charterparties*, is included in this Guidance. Charterers in turn need to ensure that their bunker suppliers meet the standards imposed by the revised Clause or they will find themselves in breach and potentially unable to pass on any liability under the terms of the bunker supply contract. The *INTERTANKO MARPOL Annex VI Clause for Bunker Supply Contracts* may assist in this regard.

This Guidance includes the *INTERTANKO Bunker Compliance Clause for Time Charterparties* together with a Commentary on how it can be used and adapted for use. It also provides background information and Q&As gathered during the drafting on some important aspects of the revised regime as it applies to chartering issues. The Appendix to the Guidance contains the *Guidance on the Development of a Ship Implementation Plan for the Consistent Implementation of the 0.50% Sulphur Limit under MARPOL Annex VI (MEPC.1/Circ.878)* which we recommend is used in order to inform Owners' decision making regarding the *Additional Provisions of the INTERTANKO Bunker Compliance Clause* for the transition to the 0.50% Sulphur Cap during 2019 and into 2020.

At the time of writing, BIMCO is finalising two clauses dealing solely with the 0.50% Sulphur Cap and transitional provisions for charterparties where redelivery will be after 1 January 2020 – *BIMCO 2020 Marine Fuel Sulphur Content Clause* and *BIMCO 2020 Fuel Transition Clause*. INTERTANKO has been party to their development, however INTERTANKO Members' specific needs were more detailed. The BIMCO clauses will be added to this Guidance in due course.

The full text of the *INTERTANKO Bunker Compliance Clause for Time Charterparties* and the *INTERTANKO MARPOL Annex VI Clause for Bunker Supply Contracts* are available to download at www.INTERTANKO.com/info-centre/model-clauses-library.

Further copies of this Guidance are available to download free of charge from www.INTERTANKO.com. The eBook will be updated as the 2020 bunker issues develop.

INTERTANKO Bunker Compliance Clause for Time Charterparties – Full Text

As with all INTERTANKO Clauses, the *INTERTANKO Bunker Compliance Clause for Time Charterparties* (hereafter referred to as the *INTERTANKO Bunker Compliance Clause*) is a 'model' Clause which can be negotiated and amended to meet the particular requirements of the charterparty or trade. For example, Members may use the Clause in full or may choose to use only the sections that deal with regulatory requirements and some or all of the best practice provisions.

The *INTERTANKO Bunker Compliance Clause* has 'bolt on' transitional provisions to deal with the run up and immediate aftermath of the implementation of the 2020 'Global Sulphur Cap' on 1 January 2020. These *Additional Provisions* are divided into two, with different responsibilities assigned to Owners and Charterers should the charterparty end late-2019 or continue into 2020.

This is a lengthy INTERTANKO Model Clause in comparison to most others, but the Documentary Committee considered it would be of benefit to spell out the obligations of the parties to reflect the importance and enormity of the task ahead for both Owners and Charterers. It is ready for **immediate use** by Owners ahead of the implementation of the 0.50% Sulphur Cap on 1 January 2020 including if your fixture ends during 2019, late-2019 or going forward into 2020 and beyond. If there is any uncertainty as to the redelivery date, we recommend Owners and Charterers use the Clause in full.

The full text of the *INTERTANKO Bunker Compliance Clause for Time Charterparties* can be found overleaf. It is also available to download at www.INTERTANKO.com/info-centre/model-clauses-library, where the text of all INTERTANKO Model Clauses can be found.

INTERTANKO BUNKER COMPLIANCE CLAUSE for Time Charterparties – General Provisions

1.1. Charterers warrant that they will supply bunkers (hereafter referred to as 'Compliant Bunkers'):

- a. of sufficient quantity and quality to enable the Vessel to:
 - i. comply with the global limits on sulphur content of bunkers under Regulation 14.1 of MARPOL Annex VI (as amended from time to time) ('MARPOL Annex VI'), including the maximum 0.50% m/m for bunkers used on board after 1 January 2020 ('0.50% Sulphur Cap')
 - ii. comply with the limit of 0.10% m/m on sulphur content of bunkers within designated Emission Control Areas under Regulation 14.3-4 of MARPOL Annex VI
 - iii. comply with Regulation 18.3 of MARPOL Annex VI regarding quality of fuel oil supplied to the Vessel
 - iv. comply with Regulation 4.2.1.1. of the International Convention for Safety of Life at Sea (SOLAS) Chapter II-2 regarding a minimum flashpoint for fuel oil of 60°C
 - v. comply with any other local, regional or national laws or regulations relating to the limits on sulphur content of fuel oils, bunker specification, and bunkering procedures in any areas the Vessel is ordered to and does proceed
 - vi. avoid non-compatibility with any fuel oil previously supplied under this charterparty.
- b. in accordance with the specifications in the latest version of ISO 8217 as at the time of supply and/or any other specifications and grades contained elsewhere in this charterparty.
- c. that are fit for purpose and suitable for burning in the main and auxiliary engines of the Vessel.

1.2. Charterers shall further ensure that their bunker suppliers shall provide:

- a. a bunker delivery note in accordance with and containing the minimum information specified in Appendix V of MARPOL Annex VI; and
- b. a representative sample of the bunkers delivered in accordance with Regulation 18.8.1 of MARPOL Annex VI and the guidelines set out in IMO Resolution MEPC.182(59) and any subsequent amendment thereto.

1.3. Where bunkers are supplied by Charterers in a place where MARPOL Annex VI is in force, Charterers warrant that any bunker suppliers shall be registered if required, and shall comply with Regulations 14 and 18 of MARPOL Annex VI, including the provisions relating to sampling and bunker delivery notes, above.

1.4. Charterers shall indemnify Owners for any loss, liability, damage, fines, delay, deviation, cost or expense arising from or connected to Charterers' failure to comply with the provisions of this Clause.

2.1. Owners warrant that provided always that Charterers have fulfilled their obligations under this Clause:

- a. the Vessel shall comply with the limits on sulphur content of fuel oil and the Emission Control Areas and other applicable requirements of Regulations 14 and 18 of MARPOL Annex VI and any other local, regional or national laws or regulations relating to the limits on sulphur content of bunkers and bunkering procedures applicable in any areas the Vessel is ordered to and does proceed
- b. the Vessel shall be able to consume Compliant Bunkers
- c. any bunkers supplied will be kept segregated and not commingled with any previous supply until a compatibility test has been carried out
- d. they participate in a recognised fuel testing programme.

2.2. Owners shall indemnify Charterers for any loss, liability, damage, fines, delay, cost or expense arising from or connected with Owners' failure to comply with the provisions of this Clause.

3. Any speed and performance undertaking in this Charterparty is based on use of Compliant Bunkers. Fuel changeover periods will be excluded from any speed and performance evaluation.

Additional provisions for Vessels to be redelivered in 2019

If the Vessel will be redelivered pursuant to this Charterparty between (insert date to give sufficient time for below to occur) and 31 December 2019 the following additional provisions will apply:

4.1. Charterers warrant that on redelivery:

- a. any fuel oil used or carried for use with a sulphur content in excess of 0.50% m/m ('High Sulphur Fuel Oil') remaining on board will not exceed [insert amount depends on ship type/date/trade etc] MT.
- b. there will be a minimum of [insert amount depends on ship type/date/trade] fuel oil with a sulphur content at or below 0.50% m/m MT ('Low Sulphur Fuel Oil') on board to safely reach the next bunkering port (if after 1 January 2020) at which Compliant Bunkers are available.

4.2. Charterers to allow Owners to prepare the Vessel to receive Compliant Bunkers at Owners' expense provided same does not interfere with Charterers' operations.

Additional provisions for Vessels to be redelivered after 31 December 2019

If the Vessel will be redelivered pursuant to this Charterparty on or after 31st December 2019, the following additional provisions shall apply:

5. By {1 October 2019/date in Ship Implementation Plan}, Owners and Charterers shall discuss in good faith the procedure for cleaning and/or flushing the tanks with gasoil in order to prepare the Vessel to receive Compliant Bunkers.

6. By {1 December 2019/date in Ship Implementation Plan}, Charterers shall make arrangements to Owners' satisfaction to supply sufficient Compliant Bunkers in accordance with Clause 1 above to enable the Vessel to reach the next bunkering port after 1 January 2020 at which Compliant Bunkers are available.

7. From {1 December 2019/date in Ship Implementation Plan} Owners may burn any Low Sulphur Fuel Oil or Marine Gas Oil on board (up to 0.50% m/m) in order to prepare the Vessel for the introduction of the 0.50% Sulphur Cap.

8. If Charterers have failed to advise Owners of their arrangements under Clause 6 above, Owners have the right to arrange an additional supply of Compliant Bunkers between {1 December 2019/date in Ship Implementation Plan} and 31 December 2019 at Charterers' expense provided same does not interfere with Charterers' operations and to take the steps outlined in sub-Clause 9.1 below.

9.1. Charterers shall:

- a. Prior to 1 January 2020 order preparation of bunker tanks, including cleaning or flushing with gasoil as necessary, to Owners' satisfaction in order to receive Compliant Bunkers;
and
- b. Prior to redelivery or 1 March 2020, whichever is earlier, remove all High Sulphur Fuel Oil and arrange disposal of the same and any residues ashore as necessary.

All costs relating to Clause 9.1 (save as provided in 9.2 below) shall be for Charterers' account. Vessel will remain on hire.

9.2. If tank cleaning is required in order to receive Compliant Bunkers, it shall be carried out at a time and place to be determined by Owners and all costs shall be for Owners' account. Vessel will be off-hire.

Commentary

INTERTANKO Bunker Compliance Clause for Time Charterparties

General Provisions

Clause 1.1. a. i-v – requires Charterers to supply bunkers that comply with the regulatory requirements under MARPOL Annex VI (sulphur and quality); SOLAS (flashpoint) and any other similar sulphur content and bunkering requirements under local, regional or national laws. Charterers are thereby required to warrant that they will comply with the same regulations that Owners will be held to account for by the local authorities, including Port State Control.

Clause 1.1. a. vi – requires Charterers to take some responsibility for compatibility of consecutive bunker supplies to the Vessel under a time charterparty. This would serve as an additional precaution to avoid issues with non-compatibility that are predicted once blended fuels are used. Charterers are not expected to avoid compatibility issues with bunkers already on board at the time of delivery.

Clause 1.1. b – requires Charterers to warrant compliance with the most current ISO 8217 standard (at the time of writing ISO 8217:2017) and any other specification or grades set out in the charterparty. In the event that ISO produces a revised standard for 2020 (ISO 8217:2020) the Clause is drafted to cover this. Note that earlier ISO 8217 standards commonly seen in charterparties will not meet the 0.50% Sulphur Cap once implemented.

Clause 1.1. c – requires Charterers to provide bunkers that are fit for purpose. Bunkers may meet all the requirements of Clause 1.1.a and b but may still cause issues for the Vessel if they contain other impurities or contaminants that have an adverse effect on the engine/auxiliaries. The Clause therefore contains a ‘back stop’ provision to cover this.

Owners may wish to add to this specific provisions e.g. the INTERTANKO Documentary Committee has seen examples of clauses where the 0.10% low sulphur marine gas oil excluded bunkering by Charterers of biofuel (DFA or equivalent) with a Fatty Acid Methyl Esters (FAME) content exceeding 1.50% by volume. These may be particular to certain Vessels or to Owners’ experiences with fuels with these characteristics. However, Owners need to bear in mind that imposing on Charterers very tight parameters on specification over and above the regulatory requirements could lead to issues with fuel availability.

Clause 1.2. – deals with further MARPOL Annex VI requirements on bunker suppliers with regard to Bunker Delivery Notes (BDNs) and sampling. Charterers, as the contractual party with the bunker supplier, should therefore ensure that these statutory requirements are met by the bunker supplier.

Clause 1.2. a – reflects the provisions of MARPOL Annex VI Regulation 14 and 18 which require certain minimum information about each consignment of bunkers to be recorded in a BDN that must be retained on board for inspection at any time by the authorities.

Clause 1.2. b – as above, this reflects the sampling requirements of MARPOL Annex VI that provide that each BDN must be accompanied by a representative MARPOL fuel sample. IMO Resolution MEPC.182 (59) (referred to in the Clause) provides best practice for sampling bunkers in order to determine compliance with MARPOL Annex VI.

Clause 1.3. – provides for Charterers to use bunker suppliers who are registered on the lists maintained by local authorities in accordance with Reg 18.9.1 of MARPOL Annex VI. A number of jurisdictions do this including Singapore and Fujairah. Parties may wish to add that the bunker supplier should be certified in accordance with an internationally recognised standard (ISO 9001 or equivalent) as a separate measure of a quality supplier.

Clause 1.4. – provides for Charterers to indemnify Owners for breach of the Clause as a whole i.e. provision of non-Compliant Bunkers as defined. The consequences of breach could include sanctions and fines for breach of MARPOL Annex VI or losses that arise from off-spec bunkers that do not meet the ISO 8217 standard or are otherwise unfit to burn. It is preferable for such terms to be explicit in the charterparty in the event of a dispute.

Clause 2. – details the warranties that will be provided by Owners to Charterers provided first that Charterers have supplied Compliant Bunkers.

Clause 2.1. a – mirrors the regulatory provisions of Clause 1.1. a. i-v, so that Owners and Charterers are held to the same mandatory standards.

Clause 2.1. b – provides that the Vessel will be able to consume Compliant Bunkers. If Charterers are to be held responsible for supply of Compliant Bunkers, Owners must be required to warrant that the Vessel can burn them. As such, the Vessel will be ‘fitted for the service’, as required under most charterparties.

Clause 2.1. c – Owners warrant they will provide segregation of fresh bunkers supplied from bunkers already on board unless a compatibility test is conducted. This is best practice and will apply even if the bunkers supplied are purportedly of the same grade and specification. This will be even more important post-2020 given the uncertainty that may exist over the compatibility of the blends of fuels that may be available to meet the 0.50% Sulphur Cap.

Clause 2.1. d – many Owners participate in fuel testing programmes. This is good practice albeit not obligatory. Owners may assume this obligation formally in the charterparty. If a particular testing programme is used, this could be specified in the Clause or a reference added, for example, to say fuel sample testing is carried out at ISO 17025-accredited laboratories, or equivalent.

Clause 2.2. – this indemnity will apply where Charterers have fulfilled their obligation and the fault lies with the Owners/Vessel which cannot burn the Compliant Bunkers i.e. it is not fit for service. Owners rightly then take responsibility once Compliant Bunkers are on board. Any remedial measures then required will fall to Owners e.g. difficulties that may arise from managing and segregating different fuel supplies on board.

Clause 3. – suspends speed and performance warranties unless Compliant Bunkers are being burned and when fuel changeover is taking place, at which time the Vessel may slow down. In either case there would be a false reading if these periods were to be included.

Transitional Provisions for 2019/2020

Clauses 4. to 9. – address the issues that will arise if a Vessel is to be redelivered close to or after 1 January 2020 when the 0.50% Sulphur Cap will be implemented under MARPOL Annex VI.

Members are advised to include **both** sets of **Additional Provisions** if the redelivery date is uncertain. For example, for a time charterparty that provides for ‘+/- 30/60 days’ and/or adds on any periods of off hire, redelivery could be in 2019 or fall into 2020. Again these provisions are ‘model’ and will need to be tailored for the charterparty and trade in question, in particular with reference to the Vessel’s implementation plan for 2020.

Additional Provisions – For Vessels to be redelivered in 2019

Clause 4. – will apply where a Vessel is delivered close to the end of 2019, to ensure that any High Sulphur Fuel Oil is depleted or consumed by redelivery. In addition, Charterers must ensure that the Vessel has sufficient Compliant Bunkers on board to take it into 2020 i.e. in short it is ‘compliant ready’. Without this provision, Charterers could be free to return the Vessel with the same types and specifications of bunkers on board at delivery, including more High Sulphur Fuel Oil than the Vessel can burn by 1 January 2020.

The amounts inserted must be filled in in accordance with the Fuel Management Plan. The Clause includes an option for Owners to bunker Compliant Bunkers for their own account if required.

Additional Provisions – For Vessels to be redelivered after 31 December 2019

Clause 5.-9. – will apply where redelivery will be on or after 1 January 2020, the implementation day of the 0.50% Sulphur Cap. Charterers will have a duty post-1 January 2020 to supply Compliant Bunkers or face liability under the indemnity provisions above. They therefore need to partner with Owners to continue the charterparty under Clauses 1.-3. above but under the revised regime.

Much of this involves advance planning by the parties with regard to preparation and fuel management and reference to the 2020 Ship Implementation Plan. This is a practical rather than contractual issue. Note that the IMO has now issued the *Guidance on the Development of a Ship Implementation Plan (SIP) for the Consistent Implementation of the 0.50% Sulphur Limit under MARPOL Annex VI* as **MEPC.1/Circ.878** based on the proposals submitted by industry associations, including INTERTANKO. Appendix 1 of MEPC.1/Circ.878, provides an indicative example of the SIP – see Appendix I.

Clause 5. – provides for Owners and Charterers to have an implementation plan. This could be based on MEPC.1/Circ.878. The Clause can be modelled thereafter based on the decisions made for implementation of the 0.50% Sulphur Cap.

Clause 6. – ensures that Charterers will make arrangements for the Vessel to be ‘compliant ready’ in advance of 1 January 2020.

Clause 7. – allows the Owner to burn low sulphur bunkers prior to 1 January 2020 as part of a transitional arrangement. This could be either 0.10% Marine Gas Oil (MGO), Ultra Low Sulphur Fuel Oil (ULSFO) (used in ECAs) or 0.50% low sulphur blends. Owners may wish to keep an option open to burn 0.10% MGO unless and until the position is clearer on the supply of 0.50% low sulphur blends. This is a straightforward route to achieving compliance with MARPOL Annex VI but will of course mean higher bunker costs for Charterers. Clause 7 provides for this and can be used or deleted as appropriate. It may be amended for example to say that this only applies once HSFO is exhausted (before 1 January 2020).

Clause 8. – allows Owners to take matters into their own hands at Charterers’ expense and bunker for their own account close to 1 January 2020 as well as to take practical steps that otherwise fall to Charterers under the Clause. Use of this provision will depend on how proactive Charterers are with regard to the implementation of the 0.50% Sulphur Cap. It can therefore be included or deleted as appropriate.

Clause 9. – provides for actions to be taken by Owners and Charterers in preparation for implementation of the 0.50% Sulphur Cap and the MARPOL Annex VI High Sulphur Fuel Oil (HSFO) Carriage Ban on 1 March 2020, should HSFO remain on board after 1 January 2020. This will include where redelivery takes place between 1 January 2020 and 1 March 2020.

In terms of preparation, it balances liabilities and responsibilities so that Charterers will bear the time and cost of removing any HSFO still being carried post 1 January 2020. Owners will pay for any tank cleaning necessary. This is in line with general time charter requirements whereby Owners would be responsible for necessary maintenance of the Vessel and is analogous to preparation and hold cleaning of cargo tanks as necessary to receive cargo. The practical aspects of this will again be covered by the implementation plan.

In summary

The **INTERTANKO Bunker Compliance Clause for Time Charterparties** provides Owners and Charterers with a complete code to prepare their fixtures starting now and up to 2020 and beyond. Given the enormous difference in Vessels, trades and approach to fuel management, it is impossible to provide a ‘one size fits all’ approach. As a model Clause however, it gives Owners and Charterers the flexibility to adapt its provisions to suit their purposes. Members who already have Vessels on time charter that may extend into 2019 and 2020 may wish to seek to negotiate an Addendum to those fixtures to ensure that their Vessels will be compliant ready for 1 January 2020.

The transitional **Additional Provisions** will fall away after 1 January 2020 and will be removed from circulation leaving Clauses 1.-3. in place to deal with supply of Compliant Bunkers going forward thereafter.

INTERTANKO's Documentary Committee will continue to monitor the 2020 chartering issues and will keep Members advised on how they impact on time charter provisions as discussions continue at the IMO and elsewhere.

Q&As on 2020 Bunker Issues

The Q&As below give some background information on the regulatory and other provisions used in the INTERTANKO Bunker Compliance Clause for Time Charterparties. They are not intended to give any detailed advice on how to store, handle, manage or use low sulphur fuels; such practical guidance can be found elsewhere. They have been written as an aid to those using the Clause to provide a better understanding of the 2020 issues as they apply to chartering practice.

MARPOL Annex VI Regulation 14 *INTERTANKO Bunker Compliance Clause 1.1. a-b and 2.1. a*

MARPOL Annex VI Regulation 14 deals with the general requirements for limits on sulphur content of fuel as well as the requirements within emission control areas (ECA). The sulphur content is measured in % m/m as it varies in direct proportion with the extent of sulphur oxide (SOx) produced during fuel combustion.

What are the general requirements for sulphur content of fuel oil under MARPOL Annex VI now and after 1 January 2020?

The current sulphur limit (in force since 1 January 2012) is 3.50% m/m. Prior to 2012, the limit was 4.50%. The sulphur content limit (outside ECAs) will be reduced to 0.50% m/m from 1 January 2020.

The amendments to MARPOL Annex VI which come into force 1 March 2020 remove the 4.50% and 3.50% provisions leaving just the 0.50% limit as a Global Sulphur Cap outside ECAs.

What happens between 1 January 2020 and the entry into force of the amendments to MARPOL Annex VI on 1 March 2020 (the 'Carriage Ban')?

The existing MARPOL Annex VI Reg. 14.1 will require vessels to burn 0.50% fuel oil from 1 January 2020 (save where Vessels are using 'equivalent' compliance mechanisms i.e. scrubbers). However, due to the amendments only coming into force on 1 March 2020, there will be a period of two months when a Vessel will still be able to **carry**, as bunkers, fuel oil with a sulphur content above 0.50% but the Vessel will not be able to use this fuel for propulsion. This has commonly been referred to as the 'Carriage Ban'.

Vessels will therefore be able to carry HSFO after 1 January 2020, for example if there has been insufficient opportunity to burn or discharge HSFO remaining on board prior to 1 January 2020, or to bring that fuel oil into compliance with the 0.50% limit. Between 1 January 2020 and 1 March 2020 a Vessel may have on board HSFO, but not use it. From 1 March 2020 there must be no HSFO on board, unless it is being carried as cargo and/or the Vessel is using a scrubber.

Current MARPOL Annex VI/Reg.14.1	Amendments to MARPOL Annex VI Reg 14.1 to enter into force 1 March 2020*
General Requirements	General Requirements
<p>1 The sulphur content of any fuel oil used on board ships shall not exceed the following limits:</p> <p>.1 4.50% m/m prior to 1 January 2012;</p> <p>.2 3.50% m/m on and after 1 January 2012; and</p> <p>.3 0.50% m/m on and after 1 January 2020.</p>	<p>1 The sulphur content of any fuel oil used or <i>carried for use</i> on board a ship shall not exceed 0.50% m/m</p> <p>* (approved at MEPC 73 October 2018)</p>

What are the sulphur limit requirements for trading in Emission Control Areas under MARPOL Annex VI now and after 1 January 2020?

MARPOL Annex VI Reg 14.3-4 mandates the sulphur content of fuel oils to be used within ECAs.

Reg. 14.3 defines the ECAs for the purposes of MARPOL Annex VI. These currently include (as defined in the regulation):

1. the Baltic Sea area and North Sea area
2. the North American area
3. the United States Caribbean Sea
4. any other sea area, including any port area, designated by the IMO

Vessels operating in ECAs (as defined) must respect the sulphur limits laid down by Reg 14.4.

The sulphur content limit for ECAs was reduced to 0.10% from 1 January 2015. The recent amendments to MARPOL Annex VI simply remove the obsolete limits that applied before 1 January 2015.

Current MARPOL Annex VI/Reg.14.4	Amendments to MARPOL Annex VI Reg 14.3 to enter into force 1 March 2020*
<p>Requirements within ECAs</p> <p>4. While ships are operating within an Emission Control Area, the sulphur content of fuel oil used on board ships shall not exceed the following limitations:</p> <p>.1 1.50% m/m prior to 1 July 2010;</p> <p>.2 1.00 m/m on and after 1 July 2010; and</p> <p>.3 0.10% m/m on and after 1 January 2015.</p>	<p>Requirements within ECAs</p> <p>4. While a ship is operating within an emission control area, the sulphur content of fuel oil used on board that ship shall not exceed 0.10%.</p> <p>* (approved at MEPC 73 October 2018)</p>

What does MARPOL Annex VI Regulation 18.3 deal with?

INTERTANKO Bunker Compliance Clause 1.1 a. iii and 2.1. a

Regulation 18 of MARPOL Annex VI deals with Fuel Oil Availability and Quality.

Reg 18.3 of MARPOL Annex VI deals with a range of minimum quality requirements for fuel oil delivered to and used by Vessels. This is separate to the sulphur requirements. These requirements are key to the Vessel's performance and safety, for example with regard to exclusion of any added substance or chemical waste that may jeopardise ship safety or adversely affect the performance of machinery; is harmful to personnel; or contributes overall to additional air pollution. Supply by Charterers of fuel oil that does not comply with this provision will put Owners in breach of the requirements of MARPOL Annex VI.

What does SOLAS Chapter II-2 Regulation 4.2.1.1. say?

INTERTANKO Bunker Compliance Clause 1.1 a. iv and 2.1. a

The International Convention for Safety of Life at Sea (SOLAS) Chapter II-2 Reg 4.2.1.1 provides that the flashpoint of any fuel oil used in machinery spaces must not be less than 60°C. The flashpoint temperature of fuel is the lowest temperature at which it can vapourise to form an ignitable mixture in air. A number of our Members and INTERTANKO Committees have raised this as a concern in recent years as it goes to the heart of the safety of the crew and the Vessel. Fuels with a flashpoint below 60°C can increase the risk of fire and explosion. This is an issue that is relevant both now and going forward post 1 January 2020.

It is therefore crucial that Charterers are able to warrant that the bunkers they supply will not present such a risk. This should be tested and verified if possible before the bunkers are put on board the vessel.

What about other local, regional and national laws?

INTERTANKO Bunker Compliance Clause 1.1 a. v and 2.1. a

There are currently 72 contracting States (Flag States and Port States) to MARPOL Annex VI. There are therefore areas of the world where Vessels trade that may have similar requirements to MARPOL Annex VI and/or other requirements concerning sulphur content and bunkering. Examples of local regimes exist for example in China, Hong Kong-China, California, Australia and Turkey. Vessels equally need to comply with these laws.

What does 'compatibility' mean?

INTERTANKO Bunker Compliance Clause 1.1 a.vi and 2.1. c

Compatibility deals with whether or not two different fuels can be mixed without any adverse consequences. The new blends produced to meet the MARPOL Annex VI sulphur requirements may carry a higher risk of incompatibility than more traditional fuels so this will become even more crucial after 1 January 2020.

Owners and Charterers need to ensure that any fresh supply of bunkers is compatible with what is already in the bunker tanks given that two fuels from different sources may not be capable of being mixed in the same bunker tank. There may well be some known compatibility issues between some of the new fuels that come onto the market to meet the 0.50% Sulphur Cap (and the ECA requirements) and both Owners and Charterers should make themselves aware of these to avoid any known compatibility issues which can be identified before bunkers are purchased.

What steps each party takes will depend on the circumstances. For example there may be less risk of incompatibility if fuel of the same specification and grade is frequently supplied by the same bunker supplier.

It is good practice to segregate fresh bunker supplies into a separate tank if possible until a compatibility test has been conducted. This can be done easily using a test kit on board a Vessel. Equally testing for compatibility may take place in a fuel testing laboratory although this will take longer.

What about fuel testing?

INTERTANKO Bunker Compliance Clause 2.1.d

Owners should always arrange for testing of representative samples of the fuel delivered to the Vessel prior to use. Such analysis can be turned around very quickly to identify any issues with the fuel that may cause problems with the Vessel's operation or issues of safety.

What is the current ISO 8217 standard and does it cover the 0.50% Sulphur Cap?

INTERTANKO Bunker Compliance Clause 1.1. b

At the time of writing (November 2018) the most up to date International Organization for Standardization (ISO) standard is the sixth edition, **ISO 8217:2017 'Petroleum products – Fuels (class F –Specifications of marine fuels'**. This ISO standard covers both marine distillate and marine residual fuels.

The ISO issued a statement in July 2018 to indicate that residual or distillate fuel categories in the Tables 1 and 2 of ISO 8217:2017 cover the 0.50% low sulphur fuels that will be required under MARPOL Annex VI from 1 January 2020 in the same way as they cover today's fuels. ISO have also advised that they will develop some guidance on how the 0.50% and 0.10% m/m sulphur content fuels can fit within the current existing standard.

Some chartering provisions use out of date ISO 8217 standards to be met by Charterers e.g. ISO 8217:2005 or ISO 8217:2010. Note that, since the 2010 edition, ISO has removed sulphur content from its standard for marine fuels. Therefore, due to the fact that the sulphur levels provided in ISO 8217:2005 are higher than those even currently required by MARPOL Annex VI or lack of such a limit in subsequent editions, reference to such editions should be avoided or the sulphur content clearly spelled out in the charterparty or bunker supply contract.

The only relevant standard to be agreed should be the most up to date one. In addition the whole of the current ISO 8217 standard must be incorporated. Some attempts were made by Charterers to exclude parts of the ISO 8217 standard in the light of the recent spate of bad bunkers. This should not be agreed by Owners as the ISO standard includes in Tables 1 and 2 crucial requirements for fuel characteristics as well as 'fit for purpose' provisions under clause 5.

What does MARPOL Annex VI say about Bunker Delivery Notes?

INTERTANKO Bunker Compliance Clause 1.2. a

MARPOL Annex VI Reg 14.5 provides that:

5. *The sulphur content of fuel oil referred to in paragraph 1 and paragraph 4 of this regulation shall be documented by its supplier as required by regulation 18 of this Annex.*

MARPOL Annex VI Reg 18.5 in turn requires that the details of each consignment of bunkers has its own Bunker Delivery Note (BDN) containing the minimum amount of information required by MARPOL Annex VI (Appendix V). This was introduced to address inconsistencies in data contained in BDNs. The minimum information must include:

- 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)

Further the BDN must include a declaration signed and certified by the fuel oil supplier's representative that the fuel oil supplied is in conformity with Reg 18.3 (fuel oil quality), and the Reg 14 sulphur requirements.

Reg 18.6 requires that the BDN is kept on board the Vessel and readily available for inspection at all reasonable times. It must be retained for a minimum of three years from the time of bunkering. This is therefore a statutory document. **Reg. 18.7** provides that a Port State inspector may request to review the BDN and/or take copies to verify its content so it is an essential part of Owners' compliance with MARPOL Annex VI.

Under a time charterparty, it will be for Charterers to obtain this document from the bunker supplier in order to assist Owners in demonstrating compliance with MARPOL Annex VI.

What does MARPOL Annex VI say about samples?

INTERTANKO Bunker Compliance Clause 1.2. b

MARPOL Annex VI Reg 18.8 goes on to provide that for each BDN there must be a representative fuel oil sample sealed and signed by the supplier's representative and the Master or officer in charge of bunkering on completion of bunkering. This is not the fuel oil sample to be used for normal analysis and commercial purposes but is retained on board for subsequent inspection by Port State Control only. This fuel oil sample (the MARPOL sample) must be retained on board for not less than 12 months. Again Charterers should assist Owners in this regard by ensuring the bunker supplier provides the MARPOL sample.

IMO Resolution MEPC.182(59) published in 2009 provides detailed *Guidelines for the Sampling of Fuel Oil for Determination of Compliance with the MARPOL Annex VI*. These guidelines are to be considered best practice for Owners and Charterers in sampling bunkers for the purposes of MARPOL Annex VI. They cover:

- Sampling methods
- Sampling and sample integrity
- Sampling location
- Retained sample handling
- Sealing of the retained sample
- Retained sample storage

Note that the MARPOL sample is used solely for determination of compliance with MARPOL Annex VI. Further samples will therefore be drawn from the primary sample to be distributed between Owners, Charterers and bunker suppliers for any routine fuel testing and in the event of a commercial dispute. As a matter of practice both the commercial and MARPOL Annex VI sample should be drawn from the same primary sample.

Why is there need for a 'fit for purpose' provision in a charterparty clause?

INTERTANKO Bunker Compliance Clause 1.1. c

Bunkers may meet all the regulatory requirements but may still cause issues for the Vessel if they contain impurities or contaminants that have an adverse effect on the engine/auxiliaries. The recent quality issues in the US Gulf and elsewhere that have affected a broad range of INTERTANKO Members are examples of the difficulties that can be faced even where bunkers supplied may meet both MARPOL Annex VI and ISO 8217 requirements but still cause problems with the Vessel's engines and operation. The addition of a 'fit for purpose' provision is designed to ensure there is a backstop for such cases so bunkers supplied are suitable and safe for the operation of the Vessel.

When (and where) will bunker suppliers be registered?

INTERTANKO Bunker Compliance Clause 1.3

MARPOL Annex VI Reg 18.7 provides that Parties '*undertake to ensure that appropriate authorities designated by them... maintain a register of local suppliers of fuel oil*'. This is not a full guarantee of quality but the list may at least show the qualifications for inclusion in the list.

There are also further licensing regimes operated by coastal States or local Port Authorities. Singapore, as an important major refining centre and bunkering hub, for example, has a registration and licensing system for bunker suppliers. This is an effective system as bunker suppliers who supply non-compliant bunkers risk de-merit points and ultimately having their licences suspended or withdrawn. It is therefore a good system of control from the Port Authorities' side and in line with the INTERTANKO view that all stakeholders need to play an active part in ensuring that only quality bunkers are delivered to Vessels. Similar schemes, albeit less comprehensive, currently exist in Gibraltar, Abu Dhabi, Fujairah and South Africa.

Why should Charterers indemnify Owners for supply of non-Compliant Bunkers?

INTERTANKO Bunker Compliance Clause 1.4

As between Owners and Charterers, Charterers have a general duty to provide bunkers that are of a reasonable quality and that are suitable for use by the Vessel's engines and auxiliaries. This is implicit in standard chartering provisions that may simply require Charterers to provide 'fuel' e.g. Shelltime 4 provides:

Clause 7. Charterers to provide

(a) Charterers shall provide and pay for all fuel....

There will also be additional terms that detail the agreed grade and specification of fuel to be supplied by Charterers but again, this may be as simple as to refer to '*bunkers of a suitable quality for burning in the engines and auxiliaries conforming to ISO 8217:2010/2012 or 2017.....*'. It is here that Owners may address any specific or unexpected requirements of the Vessel concerned. Charterers are then responsible for provision of fuel to the Vessel that complies with the agreed specification and grade.

Compliance with MARPOL Annex VI, from the local Port Authority's perspective, is 100% the responsibility of Owners. Owners, however, will have no control over who Charterers select to supply bunkers and no direct contract with the bunker supplier. Breach of Regulation 14 and/or 18 of MARPOL Annex VI could result in sanctions being imposed by local authorities/Port State Control. Most violations are likely to result in fines, but these are set individually by the State Parties to MARPOL Annex VI and may vary from jurisdiction to jurisdiction. We have seen significant fines already where, for example, an Owner has breached the ECA requirements of MARPOL Annex VI which were tightened in 2015. If Owners face such sanctions they need to be indemnified for this by Charterers who are at fault.

In addition, loss and damage resulting from 'off spec' bunkers that either do not meet the current ISO 8217 standard and/or are otherwise not fit for purpose arise directly from Charterers' actions. These consequences could be severe, resulting in extreme in breakdown or blackout of the Vessel. There may be delay and expense if the Vessel is required to deviate to de-bunker non-Compliant Bunkers or to stem fresh Compliant Bunkers.

Owners may take practical steps to minimise the risk of poor-quality bunkers. From a contractual point of view, the only way to seek recourse for supply of unsuitable fuel by Charterers is under the provisions of the charterparty. Charterers may in turn protect themselves by appropriate provisions in their bunker supply contract as only Charterers will have a contractual remedy against the bunker suppliers.

How do Charterers protect themselves from the supply of non-Compliant Bunkers by their bunker supplier?

INTERTANKO Bunker Compliance Clauses 1.4

Given Charterers will indemnify Owners for the consequences of supply of non-Compliant Bunkers, they need also to protect themselves against the bunker supplier. They can do this with appropriate indemnity provisions in their bunker supply contract.

Charterers may consider using the **INTERTANKO MARPOL ANNEX VI Clause for Bunker Supply Contracts** published in 2006 (or similar) in the event that their bunker supply terms do not refer to MARPOL Annex VI requirements for example. This could easily be adapted to match the requirements under the charterparty e.g. with relation to ISO 8217.

This Clause is set out overleaf and can also be downloaded from:
www.INTERTANKO.com/info-centre/model-clauses-library

INTERTANKO's MARPOL ANNEX VI Clause for Bunker Supply Contracts could similarly be used by Owners when contracting with bunker suppliers for their own account when the Vessel is on voyage charter.

INTERTANKO's MARPOL ANNEX VI Clause for Bunker Supply Contracts

1. *Notwithstanding any other provision in the bunker supply agreement, the suppliers hereby warrant the following:*
 - (i) *All bunkers supplied shall comply with the requirements of MARPOL Annex VI*
 - (ii) *The Vessel shall be provided with a bunker delivery note in accordance with and containing the minimum information required by MARPOL Annex VI*
 - (iii) *The Vessel will be provided with a representative sample of the bunker delivered in accordance with MARPOL Annex VI and the guidelines set out in MEPC182(59).*

Note also that IMO has published MEPC.1/Circ.875 *Guidance on Best Practice for Fuel Oil Purchasers/Users for assuring the Quality of Fuel Oil Used on Board Ships* which may be used by both Owners and Charterers.

What will happen to fuel on board at the end of 2019?

INTERTANKO Bunker Compliance Clause 4

Under the provisions of a time charter it is common to see a clause that provides for delivery and redelivery bunkers. This often provides that the Vessel will be redelivered with the same types and approximate quantities of fuel on board at delivery. Such provisions may not be appropriate in the context of the 0.50% Sulphur Cap as it risks a breach of MARPOL Annex VI if HSFO (above 0.50%*m/m*) remains on board post 1 January 2020. Owners and Charterers therefore need to provide for minimisation of HSFO, and supply of sufficient LSFO (0.50% *m/m* or less) to take the Vessel into 2020 and this cannot happen overnight. As such the charterparty needs also to provide for who is liable for the time and cost of making the Vessel 'compliant ready'.

High Sulphur Fuel Oil (above 0.50%*m/m*) (HSFO)

Owners fixing now for a redelivery towards the end of 2019 will not want a Vessel redelivered with a substantial amount of HSFO on board that will not meet the 1 January 2020 0.50% Sulphur Cap. Charterers on the other hand will have no interest in ensuring that the amount of HSFO on board is kept to a minimum and/or is removed. The charterparty therefore needs a provision to make sure that the Vessel is not redelivered, say on 1 November 2018, with a large amount of HSFO on board that cannot be used before 1 January 2020, but may still take up bunker space until it can be removed on or before the 1 March 2020 HSFO Carriage Ban.

How much may be left on board at the end of the fixture will be dependent on the Vessel type, trade and her next fixture so this will be a matter for fuel management and negotiation. Owners and Charterers need to plan in advance to deplete the HSFO towards the end of 2019 as appropriate.

It is not clear whether action may be taken to dilute the HSFO for use by blending to bring the sulphur content down or what the position is with a small amount of residue. Arguably residue should not be considered for 'use' under MARPOL Annex VI but a Vessel would still be carrying it. The safest course therefore should be no HSFO on board beyond 31 December 2019.

If the Vessel is redelivered with an amount of HSFO, Owners will be permitted to continue to carry that HSFO after 1 January 2020 but will need to have arrangements to discharge it before 1 March 2020 when the HSFO Carriage Ban begins under MARPOL Annex VI.

Marine Gas Oil (0.10% m/m or less) (MGO)

At the end of 2019, it will still of course be possible for Vessels to burn any 0.10% m/m Marine Gas Oil (MGO) remaining on board that is being used in ECAs. Nothing changes in this regard as **MARPOL Annex VI Reg 14.4** has required this within ECAs since 1 January 2015. The same MGO will also be below the 0.50% Sulphur Cap so can (and must) be used generally should the need arise.

There will be a price differential between the 0.50% and 0.10% fuels but in the short term some Owners have advised INTERTANKO that they may either choose, or be forced, to use MGO e.g. where there is no availability of the 0.50% sulphur blends. This will be a matter for negotiation between Owners and Charterers.

Low Sulphur Fuel Oil (0.50% m/m or less) (LSFO)

Owners will need to burn LSFO from 1 January 2020. As a result, there also needs to be a provision in a time charterparty that ends during 2019 that there will be a sufficient amount of LSFO on board on redelivery to enable the Vessel to prepare for the 0.50% Sulphur Cap/next fixture, at the very least to get the Vessel to the next bunkering port where LSFO is available.

Again the amount required will vary Vessel to Vessel and trade to trade so will need to be calculated. Alternatively parties may choose to burn 0.10% m/m Marine Gas Oil (see above).

Owners may wish to take additional precautions and bunker LSFO for their own account if this does not otherwise interfere with the Charterers' service.

How do I prepare my Vessel for the 0.50% Sulphur Cap?

INTERTANKO Bunker Compliance Clause 5-9 – Ship Implementation Plan

At its 73rd meeting in October 2018, the IMO Marine Environment Protection Committee (MEPC.73) finalised its *Guidance on the Development of a Ship Implementation Plan for the Consistent Implementation of the 0.50% Sulphur Limit under MARPOL Annex VI – MEPC.1/Circ.878*. Appendix 1 of MEPC.1/Circ.878, provides an indicative example of the SIP. This is included in **Appendix I**. The template covers issues concerning tank cleaning, procurement of LSFO and loading of LSFO on top of HSFO as part of dilution/flushing. This is a useful document that will guide Owners in making practical decisions in preparation for 1 January 2020. Administrations and Port State Control may take account into account the implementation plan when verifying compliance with the 0.50% Sulphur Cap.

Again, as it is Owners who must answer to Port and Flag States for MARPOL Annex VI compliance, as a protective measure, Owners may wish to reserve themselves the opportunity to take matters into their own hands and bunker for their own account close to 1 January 2020 and/or to provide for the use of Marine Gas Oil unless and until the position is clearer on the supply LSFO.

The HSFO Carriage Ban will be implemented two months after the 0.50% Sulphur Cap – why?

INTERTANKO Bunker Compliance Clause 9

The 1 January 2020 0.50% Sulphur Cap under MARPOL Annex VI Reg 14 was part of a package of amendments to MARPOL Annex VI proposed by MEPC 57 back in October 2008. It came into force by tacit acceptance 18 months thereafter. The amended Reg 14 contained a review provision requiring the IMO to complete a review of the availability of the 0.50% sulphur content fuel. Based on the results of such a review, the Parties to MARPOL Annex VI were to decide whether the 0.50% Sulphur Cap would be enforced from 1 January 2020. If not, the 0.50% Sulphur Cap would be enforced on 1 January 2025 without any additional review. The IMO's MEPC 70 (October 2016) decided that the 0.50% Sulphur Cap should apply from 1 January 2020.

The HSFO Carriage Ban is a further amendment to MARPOL Annex VI Reg 14 as follows:

*The sulphur content of any fuel oil used or **carried for use** on board a ship shall not exceed 0.50% m/m.*

It was introduced to level the playing field for operators so no HSFO can be carried by Vessels (unless fitted with scrubbers). This was only adopted at MEPC 73 in October 2018. Any amendment to MARPOL Annex VI can only enter into force after a minimum of 16 months after adoption. There was therefore insufficient time under treaty law to implement the Carriage Ban on 1 January 2020 to tie in with the implementation of the 0.50% Sulphur Cap so it will come into force on 1 March 2020.

The net effect of this is to give a 'window' for disposal (but not use) of any HSFO on board by 1 March 2020. It is however an accident of treaty law rather than a deliberate decision by IMO to provide Vessels with this opportunity.

Why are there separate clauses from INTERTANKO and BIMCO?

There are separate Clauses because the approaches used, and the links to other existing Clauses, are quite different. In consultation with the wider Membership, the **INTERTANKO Bunker Compliance Clause for Time Charterparties** takes a comprehensive approach to MARPOL Annex VI and other regulatory requirements, as well as quality issues and industry best practice. The INTERTANKO Clauses are made available with their associated guidance to provide the best possible support and information to all parties.

The BIMCO Clauses are just as valid for those who only need to address the sulphur requirements as part of a suite of other bunker provisions in their time charterparties. These Clauses will be added to the Guidance once they have been published by BIMCO.

Is there a charterparty clause for scrubbers?

INTERTANKO's Documentary Committee has identified a number of operational issues that may benefit from inclusion in a time charterparty clause, including restrictions on the use of an open loop system in some ports; planned and unplanned maintenance and off hire; supply of raw materials required for scrubber operation in addition to HSFO and disposal of residues.

At the time of writing (November 2018) INTERTANKO is in dialogue with BIMCO to assess the industry need for a Scrubbers Clause for Time Charterparties with a view to producing a joint industry standard model Scrubbers Clause, if appropriate. More information will be provided to Members as that dialogue progresses.

INTERTANKO – November 2018

Appendix I

MEPC.1/Circ.878 – Guidance on the Development of a Ship Implementation Plan for the Consistent Implementation of the 0.50% Sulphur Limit Under Marpol Annex VI



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MEPC.1/Circ.878
9 November 2018

GUIDANCE ON THE DEVELOPMENT OF A SHIP IMPLEMENTATION PLAN FOR THE CONSISTENT IMPLEMENTATION OF THE 0.50% SULPHUR LIMIT UNDER MARPOL ANNEX VI

1 The Marine Environment Protection Committee, at its seventy-third session (22 to 26 October 2018), approved the *Guidance on the development of a ship implementation plan for the consistent implementation of the 0.50% sulphur limit under MARPOL Annex VI*, as set out in the annex.

2 Member Governments are invited to bring the annexed Guidance to the attention of their Administration, industry, relevant shipping organizations, shipping companies and other stakeholders concerned.

ANNEX

GUIDANCE ON THE DEVELOPMENT OF A SHIP IMPLEMENTATION PLAN FOR THE CONSISTENT IMPLEMENTATION OF THE 0.50% SULPHUR LIMIT UNDER MARPOL ANNEX VI

Introduction

1 MEPC 70 agreed to "1 January 2020" as the effective date of implementation for ships to comply with global 0.50% m/m sulphur content of fuel oil requirement and adopted resolution MEPC.280(70) on the *Effective date of implementation of the fuel oil standard in regulation 14.1.3 of MARPOL Annex VI*¹.

2 In this context, MEPC 73 agreed that Administrations should encourage ships flying their flag to develop implementation plans, outlining how the ship may prepare in order to comply with the required sulphur content limit of 0.50% by 1 January 2020. The plan could be complemented with a record of actions taken by the ship in order to be compliant by the applicable date.

3 Regulation 18.2.3 of MARPOL Annex VI requires a Party to take into account all relevant circumstances and the evidence presented to determine the action to take, including not taking control measures. Administrations and port State control authorities may take into account the implementation plan when verifying compliance with the 0.50% sulphur limit requirement.

4 A ship implementation plan is not a mandatory requirement. A lack of a ship implementation plan or an incomplete ship implementation plan should not be considered as "clear grounds" for a more detailed inspection.

Ship implementation plan for the consistent implementation of 0.50% sulphur limit under MARPOL Annex VI

5 The ship implementation plan for 2020 could cover various items relevant for the specific ship, including, as appropriate, but not limited to:

- .1 risk assessment and mitigation plan (impact of new fuels);
- .2 fuel oil system modifications and tank cleaning (if needed);
- .3 fuel oil capacity and segregation capability;
- .4 procurement of compliant fuel;
- .5 fuel oil changeover plan (conventional residual fuel oils to 0.50% sulphur compliant fuel oil); and
- .6 documentation and reporting.

¹ Amendments to regulation 14.1.3 of MARPOL Annex VI were adopted by MEPC 73 (October 2018).

Issues relating to use of sulphur compliant fuel oil

6 All fuel oil supplied to a ship shall comply with regulation 18.3 of MARPOL Annex VI and chapter II/2 of SOLAS. Furthermore, ship operators could consider ordering fuel oil specified in accordance with the ISO 8217 marine fuel standard. The following potential fuel-related issues may need to be assessed and addressed by ships in preparation for and implementation of the 0.50% sulphur limit requirement:

- .1 technical capability of ships to handle different types of fuel (e.g. suitability of fuel pumps to handle both higher and lower viscosity fuels, restrictions on fuels suitable for use in a ship's boilers, particularly the use of distillate fuels in large marine boilers);
- .2 compatibility of different types of fuels e.g. when paraffinic and aromatic fuels containing asphaltenes are commingled in bunkering or fuel oil changeover;
- .3 handling sulphur non-compliant fuels in the event of non-availability of sulphur compliant fuels; and
- .4 crew preparedness including possible training with changeover procedures during fuel switching from residual fuel oil to 0.50% compliant fuel oils.

7 The ship implementation plan could be used as the appropriate tool to identify any specific safety risks related to sulphur compliant fuel oil, as may be relevant to the ship, and to develop an appropriate action plan for the Company to address and mitigate the concerns identified. Examples should include:

- .1 procedures to segregate different types of fuel and fuels from different sources;
- .2 detailed procedures for compatibility testing and segregating fuels from different sources until compatibility can be confirmed;
- .3 procedures to changeover from one type of fuel to another or a fuel oil that is known to be incompatible with another fuel oil;
- .4 plans to address any mechanical constraints with respect to handling specific fuels, including ensuring that minimum/maximum characteristics of fuel oil as identified in ISO 8217 can be safely handled on board the ship; and
- .5 procedures to verify machinery performance on fuel oil with characteristics with which the ship does not have prior experience.

8 A ship implementation plan for the consistent implementation of the 0.50% sulphur limit under MARPOL Annex VI is recommended to be developed based on the indicative example as set out in appendix 1.

9 The plan could take into account the issues identified in:

- .1 appendix 2: additional guidance on development of ship implementation plan (impact on machinery systems); and
- .2 appendix 3: additional guidance on development of ship implementation plan (tank cleaning).

APPENDIX 1

INDICATIVE EXAMPLE FOR SHIP IMPLEMENTATION PLAN FOR ACHIEVING COMPLIANCE WITH THE 0.50% SULPHUR LIMIT ENTERING INTO FORCE ON 1 JANUARY 2020 USING COMPLIANT FUEL OIL ONLY

Particulars of ship

1. Name of ship:
2. Distinctive number or letters:
3. IMO Number:

Planning and preparation (before 1 January 2020)

1 Risk assessment and mitigation plan

- 1.1 Risk assessment (impact of new fuels): YES/NO
- 1.2 Linked to onboard SMS YES/NO

2 Fuel oil system modifications and tank cleaning (if needed)

- 2.1 Schedule for meeting with manufacturers and/or classification societies:

- 2.2 Structural Modifications (installation of fuel oil systems/tankage) required: YES/NO/NOT APPLICABLE

If YES, then:

- 2.2.1 Fuel oil storage system:

Description of modification:

Details of yard booking (as applicable), time schedules etc.:

Estimated date of completion of modification:

2.2.2 Fuel transfer, filtration and delivery systems:

Description of modification:

Details of yard booking (as applicable), time schedules etc.:

Estimated date of completion of modification:

2.2.3 Combustion equipment:

Description of modification:

Details of yard booking (as applicable), time schedules etc.:

Estimated date of completion of modification:

2.3 Tank cleaning required: YES/NO/NOT APPLICABLE

If YES, then:

Details of cleaning schedule (including, yard booking, time schedules etc., if applicable):

Estimated date of completion of cleaning:

3 Fuel oil capacity and segregation capability:

Following any required modifications as per Section 2:

3.1 Expected number of bunker tanks designated to store 0.50% sulphur compliant fuel oil:

3.2 Expected total storage capacity (m³) for 0.50% sulphur compliant fuel oil:

3.3 Expected number of bunker tanks designated to store 0.10% sulphur compliant fuel oil:

3.4 Expected total storage capacity (m³) for 0.10% sulphur compliant fuel oil:

3.5 Approximate total fuel oil content (m³) in the fuel oil transfer, purification and delivery systems:

4 Procurement of compliant fuel oil

4.1 Details of fuel purchasing procedure to source compliant fuels, including procedures in cases where compliant fuel oil is not readily available:

4.2 Estimated date for bunkering compliant fuel oil, not later than 24:00hrs 31 December 2019:

4.3 If fuel arranged by charterer, is there an intention to accept charter party contracts that do not have a specified obligation to provide compliant fuel oil after 1 June 2019 or other date to be identified: YES/NO

If YES, then:

Details of alternate steps taken to ensure that the charter party provides timely delivery of compliant fuel:

4.4 Is there confirmation from bunker supplier(s) to provide compliant fuel oil on the specified date: YES/NO

If NO, then:

Details of alternate steps taken to ensure timely availability of compliant fuel oil:

4.5 Details of arrangements (if any planned) to dispose of any remaining non-compliant fuel oil:

5 Fuel oil changeover plan

5.1 Consider whether a ship-specific fuel changeover plan is to be made available. The plan should include measures to offload or consume any remaining non-compliant fuel oil. The plan should also demonstrate how the ship intends to ensure that all its combustion units will be using compliant fuel oil no later than 1 January 2020.

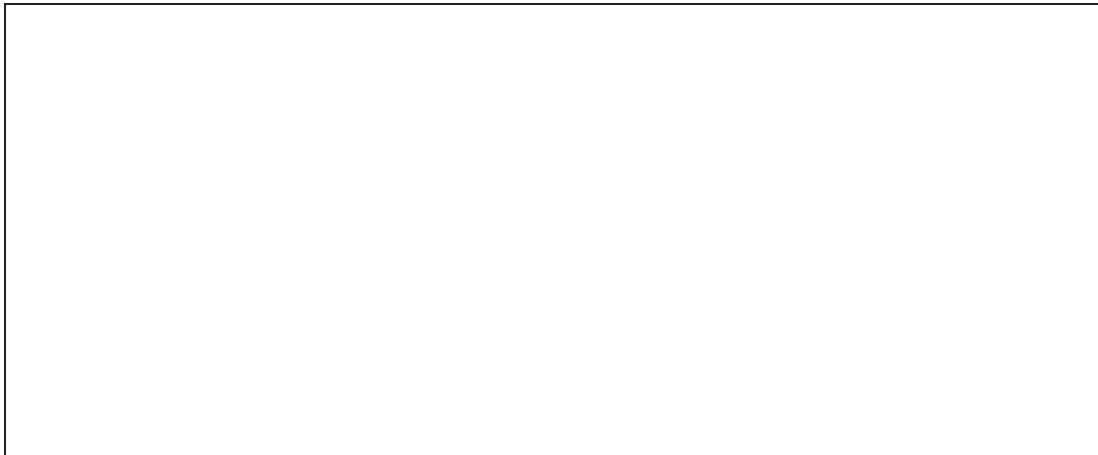
5.2 As per the ship-specific fuel changeover plan, the maximum time period required to changeover the ship's fuel oil system to use compliant fuel oil at all combustion units:

5.3 Expected date and approximate time of completion of the above-mentioned changeover procedure:

5.4 Consider availability of adequately trained officers and crew familiar with the ship's fuel system and fuel changeover procedures to carry out the fuel oil changeover procedure. If this cannot be confirmed, then consider whether there is a sufficient amount of time dedicated for ship-specific familiarization and training of new officers and crew.

6 Documentation and reporting

- 6.1 If there are modifications planned as per section 2, related documents including the shipboard fuel oil tank management plans and stability and trim booklets should be consequently updated.
- 6.2 The implementation plan could be kept on board and updated as applicable.
- 6.3 If when following the implementation plan the ship has to bunker and use non-compliant fuel oil due to unavailability of compliant fuel oil safe for use on board the ship, steps to limit the impact of using non-compliant fuel oil could be:



- 6.4 The ship should have a procedure for Fuel Oil Non-Availability Reporting (FONAR). The master and chief engineer should be conversant about when and how FONAR should be used and who it should be reported to.

APPENDIX 2

ADDITIONAL GUIDANCE FOR DEVELOPMENT OF THE SHIP IMPLEMENTATION PLAN (IMPACT ON MACHINERY SYSTEMS)

1 Ships are advised to assess potential impact on machinery systems with the use of distillates and fuel oil blends and prepare ships in consultation with chief engineers, equipment manufacturers and suppliers.

2 The ship tank configuration and fuel system may require adjustments. A fully segregated fuel system for distillate fuels and blended fuels is recommended because they may require special attention. Ship tank configuration and segregated fuel system will also allow for better management of potentially incompatible fuels.

Distillates

3 If distillates have been chosen as the option for compliance the following may be considered:

- .1 a decrease in fuel oil viscosity may cause an increase in fuel oil leakage between the fuel pump plunger and barrel of diesel engines. Internal leakages in the fuel injection system may result in reduced fuel pressure to the engine, which may have consequences for the engine performance (e.g. starting of the engine). Equipment makers' recommendations should be consulted, and adequate testing, maintenance and possible installation of coolers etc. may be performed;
- .2 shipowners may also consider installing fuel pumps and injection nozzles, suitable to fuel oil with low viscosity. Fuel oil with too low viscosity may lead to increased wear or seizure of fuel oil pumps. Engine and boiler makers should be consulted to ensure its safe and efficient operation. Implications for validity of NO_x certification (EIAPP Certificate) should be considered;
- .3 while some compliant fuels may not require heating, others, including some distillates, will require heating. It would therefore be prudent to review heating arrangements for distillate fuels on board and, where appropriate, maintain the existing heating arrangements; and
- .4 in some locations, bunker suppliers may only be able to offer automotive diesel fuel containing biodiesel (FAME) in accordance with the ISO 8217-2017 Standard which provides a marine biodiesel specification (DFA/DFB) with up to 7.0% by volume of FAME. CIMAC has provided a "Guideline for Ship Owners and Operators on Managing Distillate Fuels up to 7.0 % v/v Fame (Biodiesel)".²

4 In view of paragraph 3.3 manufacturers of engines and equipment such as oily water separators, overboard discharge monitors, filters and coalescers, etc. need to be consulted to confirm ability to handle biodiesel blends up to 7% v/v.

5 Also, some parts of the fuel oil supply system, i.e. fuel pumps, pipefittings and gaskets may need to be overhauled to ensure integrity.

² https://www.cimac.com/cms/upload/workinggroups/WG7/CIMAC_WG7_Guideline_for_Ship_Owners_and_Operators_on_Managing_Distillate_Fuels_May_2013.pdf

Blended residual fuels

6 New blended 0.50% sulphur fuel oil as and when offered could provide an alternative to conventional distillate fuel such as Marine Distillate Fuel.

7 When using such new blended sulphur fuel oils, the technical specification of such fuels are (a) either within the limits specified by ISO 8217 or are (b) issued with formal documentation indicating no objection to its use by the engine/boiler makers.

8 Before purchasing a new fuel oil product, operators should carefully consider the specific technical and operational challenges that this type of fuel oil may have and, where necessary, contact the fuel oil supplier or Original Equipment Manufacturer (OEM) for the considerations to be made to ensure safe operation.

9 Densities of these fuel oils are in general lower than conventional residual fuel oils. This may require adjustment of centrifuges to ensure adequate cleaning of the fuel oil.

Cold flow

10 Since most distillate fuels do not require heating (in fact, typically, heating is not recommended due to the low viscosity of these products), the fuel's cold flow properties become a potential handling/storage challenge, especially when operating in colder regions.

11 It is however possible to successfully manage cold flow properties through good fuel management, from procurement to technical operation, by considering the following:

- .1 where the ship will be operating;
- .2 where the risk is higher of getting fuels with poor cold flow properties;
- .3 can the required cold flow properties be specified in the fuel contract;
- .4 what is the actual low-temperature flow properties of the bunkered fuel; and
- .5 which actions have to be taken in order to safely consume the bunkered fuel (e.g. tank and filter heating).

APPENDIX 3

ADDITIONAL GUIDANCE FOR DEVELOPMENT OF THE SHIP IMPLEMENTATION PLAN (TANK CLEANING)

Introduction

1 Most ships will have been using high viscosity high sulphur fuel oil (HSFO) based primarily on residual fuel oils. Such fuels tend to adhere to the inside of fuel tanks forming layers of semi-solid substances containing sediments and asphaltenic sludge; such residues will also typically have solidified and settled in various parts of the fuel oil service system including pipelines, settling and service tanks.

2 The ship operator may choose to clean the fuel oil tanks of these residues before loading compliant fuel prior to 1 January 2020 based on the following considerations.

3 Some of the fuels complying with the 0.50% sulphur limit are expected to be very paraffinic due to crude sources of blending components and also a high content of distillate components. If such fuels are loaded into HSFO fuel tanks that have not been cleaned, there is a possibility that they could dissolve and dislodge sediments and asphaltenic sludge in storage tanks, settling tanks and pipelines, potentially leading to purifier and filter operational issues and in extreme cases fuel starvation resulting in loss of power.

4 Alternatively, ships have been using ship specific changeover procedures to effectively and safely load on top of existing fuel oil and gradually flushing through the fuel system until the sulphur content in the fuel oil is at a compliant level.

5 Should the ship operator determine it is appropriate to clean the ship's fuel oil tanks and system, the following considerations may need to be taken into account when making arrangements for tank cleaning.

Options for tank cleaning, approximate timelines and considerations

6 Fuel oil tanks are normally cleaned on a regular basis on ships to remove built-up sediments and sludge, usually during dry docking and whenever inspections of the fuel tanks are due. However, leading up to 1 January 2020, it would not be practicable for the majority of the global fleet that has been running on HSFO and decided to opt for tank cleaning to undergo dry docking during a very short period. Hence, other options for cleaning tanks and fuel oil systems during service may need to be considered.

7 The time and work involved in cleaning HSFO tanks cannot be defined precisely, as it will vary depending on how long it has been since the last time the tanks were cleaned, the condition of the tank coating and the effectiveness of the cleaning process itself. The estimates in this document may err on the side of caution as it is almost impossible to pinpoint at what stage the ship's fuel oil system is sufficiently clean to guarantee compliance.

Manual cleaning during dry docking

8 Time required varies; it can be done in 2 to 4 days per tank. In addition to cleaning tanks, all of the pipework in the fuel oil service system needs to be flushed through. Overall, it may take 1 to 2 weeks.

9 A ship that has had all its fuel oil tanks and fuel system cleaned can start loading compliant fuels and expect to be fully compliant right away.

10 However, if only the tanks have been cleaned in dry dock, it could take 2 to 5 days to flush through the pipework in the fuel oil service system to ensure full compliance with the 0.50% sulphur limit.

Manual cleaning during service

11 If tanks are to be cleaned manually during service, risk assessment and safety measures are paramount; refer to IMO resolution A.1050(27) on *Revised recommendations for entering enclosed spaces aboard ships*.

12 Time required will vary depending on tank size and the number of tanks, how long it has been since the last tank cleaning and the number of crew available to perform safe and complete tank cleaning operations. Tank cleaning can be performed by the ship's crew and/or by employing a riding crew for this purpose. It is always good practice to inspect the tank once cleaned to check its condition and to inspect heating coils, conduct pressure tests and undertake repairs as necessary.

13 If the cleaning is done by the ship's existing crew, it would likely take a minimum of 4 days per tank. For an average tank, a week should be allowed. If employing a riding crew to clean the tanks, if working in shifts, it would likely take a minimum of 2 days to clean a tank, but 4 days per tank should be allowed.

14 Tanks need to be empty before they can be cleaned, hence the time needed to drain tanks needs to be taken into account when estimating the overall time required.

15 In addition to cleaning tanks, all of the pipework in the fuel oil service system needs to be flushed. Flushing the remaining pipework and fuel oil service system after all tanks have been cleaned could take another 1 to 2 days.

16 The residues from tank cleaning should be retained on board until they can be disposed of correctly or disposed to shore reception facilities.

Cleaning tanks in service with specialized additives

17 As an alternative to manual cleaning, consideration can be given to gradually cleaning the sediments and asphaltenic sludge from HSFO tanks and fuel systems by dosing additives. There are successful examples of this approach for ships that needed to reallocate HSFO tanks to fuels complying with the 0.10% sulphur limit that took effect in ECAs in 2015.

Appendix II: BIMCO 2020 Clauses

BIMCO 2020 Marine Fuel Sulphur Content Clause and BIMCO 2020 Fuel Transition Clause

These Clauses will be added to the Guidance once they have been published by BIMCO.

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