International Regulation News Update

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Marine Environment Protection Committee's 68th Session

(11 to 15 May 2015)

(All Ships includes all marine craft including barges, drill rigs, submersibles, and floating platforms)

The 68th session of the Marine Environment Protection Committee met in London from 11 to 15 May 2015. Amendments to MARPOL Annexes I, II, IV and V were adopted with respect to the Polar Code and revisions for sludge and oily water arrangements under Regulation 12 of MARPOL Annex I were also adopted at this session. Discussions also moved forward on possible further measures for operational energy efficiency standards, fuel oil quality and availability of low-sulphur fuel oil for operation in SOx ECAs. Measures to facilitate the implementation of the Ballast Water Management Convention were also progressed.

BALLAST WATER MANAGEMENT

Ratification Status

With the recent ratification by Georgia in January, 2015, the Ballast Water Management Convention has now been ratified by a total of 44 States having 32.86% GT of the world fleet. Conditions for entry into force have been met for the threshold of 30 States, but an additional 2.14% tonnage is still needed to meet the 35% GT of the world fleet threshold.

BW Management Convention Implementation

Anticipating the eventual entry into force of the BWM Convention, and taking into account work underway to revise the G8 Guidelines, the Committee agreed to develop measures to facilitate the implementation of the Convention using an agreed "Roadmap" which includes:

Development of guidance on contingency measures, such as tank stripping and sediment management and consideration of the role of the ballast water management plan.

Expanded trial period associated with the Guidance on ballast water sampling and analysis (BWM.2/Circ.42) so as to provide for an experience-building period to collect information on type-approved treatment systems that have, subsequent to approval, not been found to meet the D-2 standard, the exceedance amount and reasons for the exceedance.

Non-Penalization of ships fitted with treatment systems type approved under the current G8 Guidelines (MEPC.174(58)) – the so-called *early movers*. Specifically:

- systems approved in accordance with the current G8 Guidelines should not be required to be replaced when the revision of the G8 Guidelines occurs or due to occasional lack of efficacy for reasons beyond the control of the shipowner; and
- *early movers* operating ships with properly installed, maintained and operated systems that are approved in accordance with the current G8 Guidelines should not be penalized (sanctioned, warned, detained or excluded) solely due to an occasional exceedance of the D-2 standard on the condition that the self-monitoring system indicates that the treatment process is working properly.

It is noted, however, that the rather reasonable approach described above does not govern over the control actions that remain available to port States. The Committee invited submissions to MEPC 69 (April 2016) for further consideration of any outstanding issues identified in the Roadmap, with a view to finalizing any further guidance by MEPC 70 (October 2016).

Trial Sampling/Analysis Circular

The Committee approved Circular BWM.2/Circ.42/Rev.1 containing revisions to the general recommendations on methodologies and approaches to sampling and analysis to test for compliance with standards D-1 (ballast water exchange) and D-2 (biological standard for treatment systems) of the Convention.

Testing for compliance is performed in two steps using representative samples of the whole discharge of the ballast water from any single tank or any combination of tanks being discharged:

- an indicative analysis - a relatively quick indirect or direct measurement of parameters (e.g. dissolved oxygen levels and residual chlorine levels) that are comparable to that used to assess compliance with the D-2 standard; and
- a detailed analysis - a more complex compliance test that directly measures the concentration of viable organisms of a representative ballast water sample.

Type Approval Guidelines (G8)

Pursuant to the initiative to revise the G8 Guidelines so as to be more robust so that equipment approved under the Guidelines provides treated water that complies with the D2 standard and with greater reliability, the Committee agreed to request IMO Member States and observers to submit information on 10 specific issues on the performance of type-approved ballast water treatment systems.

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These issues include:

- the effect of temperature in cold and tropical waters on treatment efficacy
- use of standard organisms and validated methods for testing BWM systems
- differences between type approval protocols,
- incorporation of control and monitoring equipment,
- enhanced information that could be included in type approval test reports (e.g., documentation related to scaling)
- verification of minimum storage times for ballast water, and any other issues deemed relevant.

The Committee agreed to re-establish the Correspondence Group that will discuss a number of issues including:

- increased transparency of treatment system's operating parameters in the Type Approval Certificate (e.g., salinity and temperature ranges).
- levels of suspended solids to be used in testing.
- enhanced reporting of operational parameters (e.g., power consumption, mechanical reliability and replacement of components and consumables).
- standardization of protocols for testing facility validation.
- identifying bypass arrangements and circumstances when treatment bypass may occur.
- modification of specifications for monitoring of hazards and the safe operation of treatment systems.

Due to concerns raised that many Administrations are not allowing the discharge of treated ballast water from ships during the shipboard testing period under the G8 Guidelines, the Committee will consider developing an MEPC resolution which urges Administrations to allow such discharges.

Draft Amendments of BWM Convention

In preparation for the entry into force of the Convention, the Committee noted, but did not conclude on draft amendments to regulation B-3 of the BWM Convention, which reflect the recommended relaxation of the B-3 implementation scheme adopted by the Assembly in resolution A.1088(28).

These will be further considered at MEPC 69. Additionally, an alternative, slightly simplified version of the amended regulation was developed.

The Committee noted that the intended five year period for D-2 compliance (associated with the distribution of current IOPP certificate expiration dates) might reduce to as little as one year if there was a move to renew IOPP certificates prematurely which could present significant implementation problems with respect to treatment system and yard availability for retrofit. In this regard, the Committee also noted that referring to the IOPP certificate in the draft amendments to regulation B-3 was not consistent with correct treaty practice since it is a certificate of a different convention. This issue will be discussed at MEPC 69 in March 2016.

Final Approvals Granted

It was reported that a total of 57 ballast water management systems have been type approved to comply with the Convention's D-2 biological standard. Final approval was granted by the Committee at this session to one system.

Ecomarine-EC BWMS

Submitted by Japan (MEPC 68/2/5 – Fig 1), this system consists of filtration (50 μm), disinfection by in situ electrolysis, followed by neutralization with sodium thiosulfate to not more than 0.2 mg/L (as Cl_2).

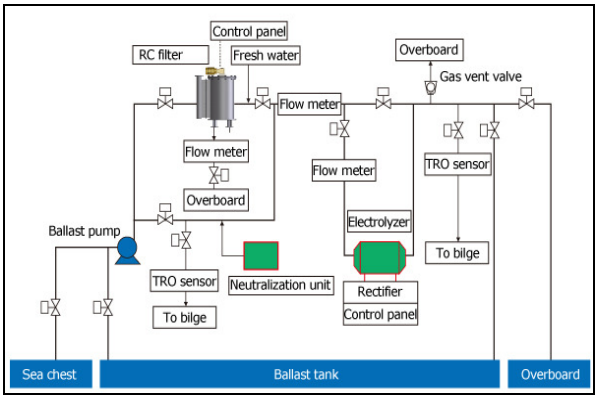

Fig 1 – Ecomarine-EC BWMS

The Active Substance, sodium hypochlorite, is produced where water temperature and the salinity are 5 to 35℃ and above 1 PSU, respectively. The maximum concentration of sodium hypochlorite after being dosed into the main line is controlled at 2 mg/L TRO as Cl_2.

Basic Approvals Granted

Basic Approval was granted by the Committee for five systems:

ECS-HYCHEM™ System

Submitted by Republic of Korea (MEPC 68/2/2 – Fig 2), this system employs a backwash filter unit mounted directly in the main ballast pipeline to eliminate the organisms and suspended matter larger than 40 µm. Auto-back-flushing occurs when the difference between inlet and outlet pressure of the filter exceeds 0.5 bar.

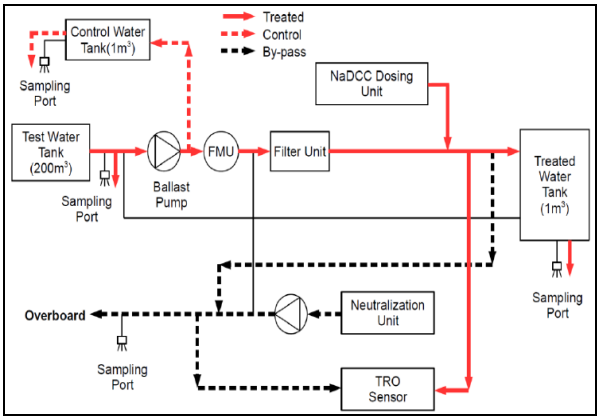

Fig 2 – ECS-HYCHEM™ Ballasting Overview

The system's Active Substance, sodium dichloroisocyanurate, is dissolved with water to generate hypochlorite and sodium isocyanuric acid. Its concentration is maintained at not more than 18 mg/L as Cl_2 during treatment. It is neutralized with sodium thiosulfate so that the total residual oxidant (TRO) concentration prior to discharge of treated water is not more than 0.2 mg/L as Cl_2.

NK-Cl BlueBallast System

Submitted by the Republic of Korea (MEPC 68/2 – Fig 3), this system treats seawater, brackish water and fresh water without using filtration. A storage device is used to dissolve the Active Substance (sodium dichloroisocyanurate) with water to create hypochlorous acid, hypochlorite ion and isocyanuric acid. This is injected into the ballast water to be treated using an injection pump, injector and pipeline static mixer. Its concentration is maintained at not more than 15 mg/L as Cl_2 during treatment.

Prior to discharge (Fig 3), the treated water is automatically neutralized with sodium thiosulfate so that total residual oxidant (TRO) concentration is not more than of 0.2 mg/L as Cl_2.

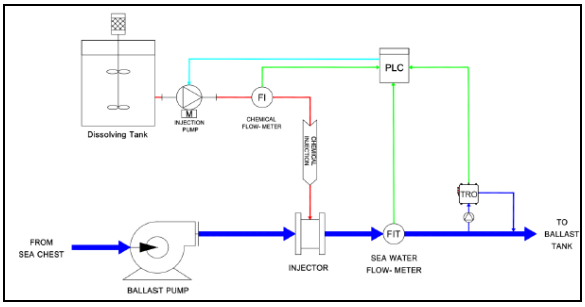

Fig 3 - NK-Cl BlueBallast Deballasting Process

ECS-HYCHLOR™ System

Submitted by the Republic of Korea (MEPC 68/2/1 – Fig 4), this system employs a backwash filter unit mounted directly in the main ballast pipeline to eliminate the organisms and suspended matter larger than 40 µm. Auto-back-flushing occurs when the difference between inlet and outlet pressure of the filter exceeds 0.5 bar.

After filtration, an Active Substance (sodium hypochlorite generated by an electrochlorination unit), is injected into the ballast water at a concentration of not more than 15 mg/L as Cl2 during treatment.

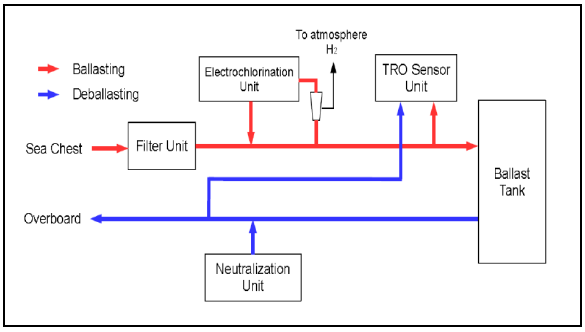

Fig 4 – ECS-HYCHLOR™ Schematic

Prior to discharge, treated water is neutralized with sodium thiosulfate so that the concentration is not more than of 0.2 mg/L as Cl_2

ECS-HYBRID™ System

Submitted by Republic of Korea (MEPC 68/2/3 – Fig 5), this system employs a backwash filter unit mounted directly in the main ballast pipeline to eliminate the organisms and suspended matter larger than 40 µm. Auto-back-flushing occurs when the difference between inlet and outlet pressure of the filter exceeds 0.5 bar.

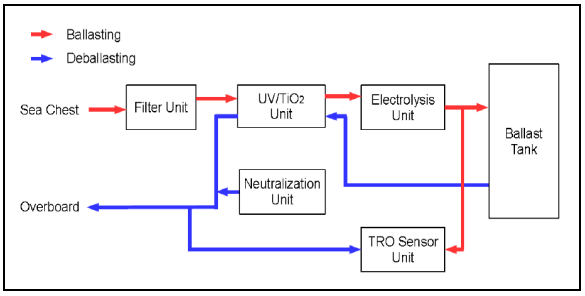

Fig 5 – ECS-HYBRID™ Schematic

After filtration by the filter unit, the remaining organisms are disinfected by UV radiation, which is automatically adjusted to maintain constant intensity. After UV, the electrolysis unit disinfects the remaining organisms by generating hypochlorous acid and hypobromous acid with a maximum concentration of TRO of 15 mg/L TRO as Cl_2. Before discharging overboard, the treated water is passed through the UV unit again and then neutralized by using sodium thiosulfate. The maximum allowable discharge concentration is 0.2mg/L TRO as Cl_2

VARUNA BWT System

Submitted by Singapore (MEPC 68/2/6 – Fig 6), which combines filtration (a 40µm self-cleaning backwash), electrochemical treatment and neutralization processes that are monitored by a control unit to optimize the treatment of ballast water. Primary and secondary treatment is performed during ballast intake and tertiary treatment is carried out during deballasting.

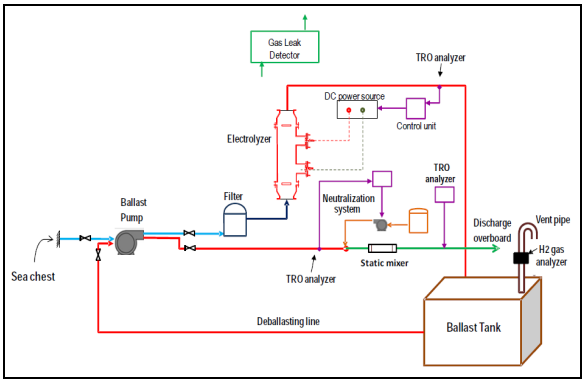

Fig 6 – VARUNA BWT System

AIR POLLUTION AND ENERGY EFFICIENCY

Operational efficiency standards

In considering further technical and operational measures for enhancing energy efficiency standards for new and existing ships, the Committee continued its work towards developing a data collection system for fuel consumption. Although the Committee has not yet decided if the system would be mandatory or voluntary, it was agreed that the following information should be reported by the registered owner for their ships of 5000 GT and above on international voyages:

- Total annual fuel consumption, by fuel type (e.g., HFO, MGO and MDO), in metric tons,
- IMO number,
- Ship type,
- Gross and Net Tonnage,
- Deadweight,
- Total installed power (main and auxiliary engine [kW]),
- EEDI (if applicable), and
- Ice class (if applicable).

If the collection of data becomes mandatory, it has been proposed that relevant sections of the Ship Energy Efficiency Management Plan, SEEMP, should be revised and submitted for review to determine that it includes a methodology for the collection and reporting of fuel consumption data. While there was some support for the development of guidelines to facilitate consistency, quality and robustness of the reported data, it was ultimately agreed that the responsibility rests with the flag Administration to verify the data submitted and to decide on how this verification is to be accomplished. Reported data would not be included in or appended to the International Energy Efficiency Certificate. Rather, a Statement of Compliance would be issued to the ship after complying with the provisions of the system for a given year as evidence for PSC verification.

Further discussions are required on data other than fuel consumption to be reported under the system. Aside from the determination of whether data collection will be mandatory or voluntary, the inclusion of transport work (distance travelled x amount of cargo carried) and/or other proxies for transport work remains to be decided. There is a general view for consideration of distance travelled and service hours as potential proxies that may facilitate a reasonable calculation of vessel efficiency. Expanding the discussion to cargo weight/volume would afford more precise efficiency calculations, but this comes at a significant cost in terms of complexity and burden.

Additionally, this raises issues on data that is considered to be commercially sensitive. It was agreed that confidentiality of data reported and subsequently extracted from the data base requires further consideration.

An intersessional working group further progressed this initiative in September 2015 and agreed that the method to determine the annual fuel consumed would be at the discretion of the owner and that distance of the goods transported is from berth-to-berth. Reporting the amount of goods transported (e.g., deadweight, gross tonnage, volume) and whether it needs to be according to ship type was not agreed.

EEDI Guidelines

The Committee adopted amendments to the 2013 Interim Guidelines for determining minimum propulsion power to maintain the maneuverability of ships in adverse conditions. The amendments to resolution MEPC.232(65) are contained in resolution MEPC.255(67) and revise the Level-1 minimum power assessment criteria for bulk carriers including combination carriers (now divided into two sizes – above and below 145k dwt) and oil and chemical carriers to make them significantly more stringent. However, since the Level-2 assessment criteria remain unaltered, the impact of the new, more stringent Level-1 assessment criteria are thought to be minimal. If the Level-1 assessment test fails, the option to use the unaltered Level-2 assessment criteria is still available.

When meeting the required EEDI, a ship is also required to be arranged with minimum propulsion power in order to assure that the ship can safely maneuver under adverse weather conditions. Bulk carriers and oil and chemical carriers are subject to the 2013 Interim Guidelines because they are equipped with smaller engines, compared to other types (container ships and gas carriers), and it was considered that reducing propulsion power to meet the required EEDI might result in the ships being underpowered thereby endangering their ability to maneuver in adverse weather conditions.

The installed power is assessed using either Level-1 criteria or Level-2 criteria. The Level-1 criteria are based solely on installed engine horsepower, which is thought to be sufficient from an historical perspective.

The Level-2 criteria is based on ships' maneuverability characteristics under adverse weather conditions.

A consolidated text of the Interim guidelines, as amended, was issued by the IMO as MEPC.1/Circ.850/Rev.1, which also takes into account the need for a six-month phase-in period for the application of the amendments under resolution MEPC.262(68).

Amendments to the 2014 Guidelines on survey and certification of the Energy Efficiency Design Index (EEDI) (resolution MEPC.254(67)) were adopted by resolution MEPC.261(68). The amendments refer to updates of both the ITTC Recommended Procedure and ISO 15016:2015 standard. Since the ISO standard has been harmonized with the latest version of the ITTC Recommended Procedure, they are now referenced as having equally preferred status. The effect on EEDI values calculated with either of these standards is considered minimal. These Guidelines recommend application to ships for which the sea trial is conducted on or after 1 September 2015.

Lastly, the Committee adopted resolution MEPC.263(68) which sets forth amendments to the 2014 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships (resolution MEPC.245(66)). The amendments correct an internal inconsistency concerning the reference speed, capacity and power of the main and auxiliary engines used for determining the attained EEDI for LNG carriers.

Engine Certification

The Committee approved amendments to the NOx Technical Code (NTC), with a view to adoption at MEPC 69, for certifying dual fuel and gas-fuel engines. It takes into account resolution MEPC.258(67) which revises the definition of "marine diesel engines" in MARPOL VI to include gas-fueled engines installed on ships constructed on/after 1 March 2016.

These amendments build on previous amendments to the NTC that enabled certification of dual fuel and gas-fuel engines and in particular clarify the manner in which certain provisions of the NTC are applied to "gas only" engines. The amendments are particularly relevant for the utilization of dual fuel and gas-fuel engines as a compliance strategy for the Tier III NOx emission standards.

Amendments to MARPOL VI, Regulation 13.5 were also approved, with a view to adoption at MEPC 69, and address record keeping for the operational status of engines that are:

- certified to Tier II and to both the Tier II and Tier III standards; and
- installed onboard ships constructed on/after 1 January 2016 which operate within NOx ECAs.

This record keeping is to be entered in a logbook "as prescribed by the Administration" in a manner that is consistent with the recording of fuel sulphur changeover required by Regulation 14.6. The record shall be made at entry into and exit from the NOx ECA, or when the on/off status changes within such an area, together with the date, time and position of the ship. The NTC should detail how the tier change-over is to be carried out.

Lastly, the Committee approved new circular (MEPC.1/Circ.854) on Guidance on the application of Tier III NOx requirements for dual fuel and gas-fuel engines. The Guidance includes "gas only" engines where ignition is initiated by a spark and dual fuel engines which use gas fuel in a pre-mix combustion process with liquid fuel as the pilot ignition source when in gas mode. Additionally, the Guidelines recognize that the coast/port State has governance over ships that are fitted with these engines which use boil-off gas from cargo tanks when proceeding through an ECA to/from a dry dock or on delivery from a ship yard where gas is not available due to the lack of cargo. The Guidelines also recommend that auxiliary control devices (used, for example, during low load operation or during maneuvering when liquid fuel exceeds the maximum amount used during the certification cycles) should be denoted in the engine's Technical File and recognizes that such devices are part of the framework limiting dual fuel engine operation in gas mode.

FUEL OIL ISSUES

Availability of 0.50% Sulphur Limit Fuel

Under the provisions of MARPOL VI, Regulation 14, a review to determine the availability of fuel oil to meet the global 0.5% sulphur limit in 2020 is to be completed by 2018. Parties to MARPOL Annex VI may then decide if it will be possible for ships to comply with the 2020 date (despite Europe having already done so by the EU Sulphur Directive 2012/33/EU, which EU Member States are obligated to include in their national requirements) based on the results of the review, or if the global 0.5% sulphur limit should be postponed until 2025.

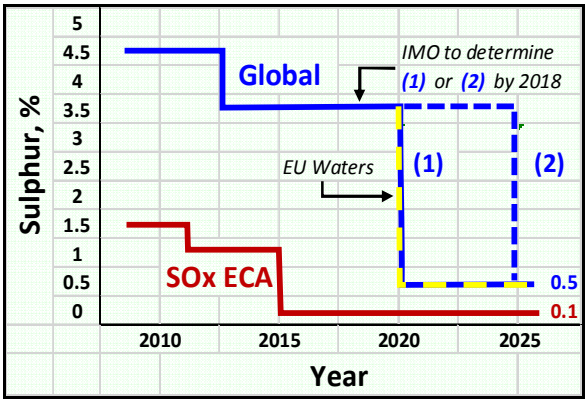

Fig 7 – SOx Emission Limits

MEPC 68 requested the IMO Secretariat to establish a Steering Committee (regionally represented by Member States) to begin the review by 1 September 2015 under agreed terms of reference, with a view to submission of a report to MEPC 70 in October 2016. The demand for compliant fuel oil is to be determined based on bottom-up modeling (fuel consumption and emissions from individual ship movements) and the supply of compliant fuel oil will include geographical fuel availability based on current and projected refinery capacity.

Although proposals for new SOx ECAs likely to be implemented before 2020 remain uncertain, SOx ECA's for Mexico and Hong Kong, noted as possibilities, would have additional impact on the availability models for 0.5% sulphur fuel oil. As of 1 January 2015, 0.10% fuel is required when operating in any of the four SOx ECAs (Baltic, North Sea, USA/Canada and USA/Caribbean).

Additional information on this is available at http://ww2.eagle.org/content/dam/eagle/publications/2015/ABS-Trends_January2015.pdf.

Fuel Oil Quality Control

The Committee considered the report of an intersessional correspondence group tasked by MEPC 67 with developing draft non-mandatory guidelines for Governments to apply to enhance the quality control of marine fuel oil suppliers within their jurisdiction and to consider challenges under current legal frameworks which may limit some Governments' ability to implement such controls.

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The draft guidelines under development by the correspondence group proposed application of a three-level approach to determine the quality of the supplier. However, this was met with significant objection by ship owner/operator organizations and several Member States which proposed that a best practice needs to be developed and that further review of the adequacy of the MARPOL Annex VI legal framework needs to be undertaken with respect to implementing and enforcing the requirements and obligations of fuel oil suppliers.

The majority of those who spoke were of the view that the regulatory framework is not adequate and needs revision. The intersessional correspondence group has been reestablished to further consider these issues, as well as the illegal blending of chemical waste in bunker fuel oil, and submit a report to MEPC 69.

Worldwide Average Sulphur Content of Fuel

In accordance with regulation 14.2 of MARPOL Annex VI, the Committee continues to monitor the average sulphur content of fuel oils used by the marine industry.

For 2014, the average sulphur content of the tested residual fuels increased slightly from 2.43% to 2.46%. Whereas, the three-year rolling average of the sulphur content for residual fuel for 2014 (calculated based on the yearly average of sulphur content from 2012 to 2014) decreased to 2.47% from 2.53% in 2013.

Figure 8 shows the distribution of sulphur content in residual fuel tested for 2014.

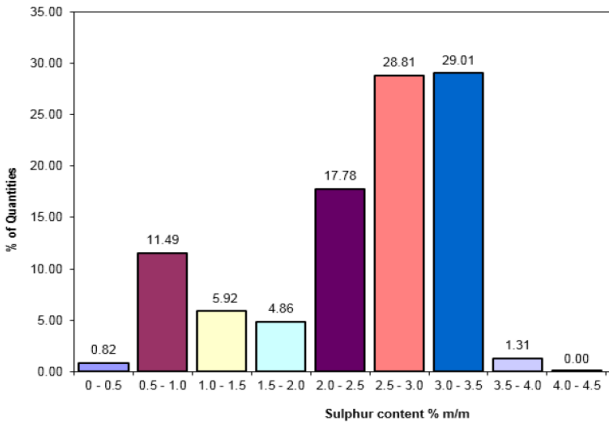

Fig 8–Sulphur % of Residual Fuel Tested, 2014

Fuel Oil Sampling Guidelines

Although in-situ sampling of fuel oil being used is not required or addressed under MARPOL Annex VI, the Committee recognized that some port State Control regimes are carrying out such sampling according to their unique procedures to verify compliance with fuel oil sulphur limit requirements. There has been an increased focus on compliance following the 0.10% sulphur limit that took effect in ECAs on 1 January 2015.

Therefore, the Committee agreed to proceed with the development of IMO guidelines to facilitate a consistent and safe approach when sampling fuel oil being used on board ships during inspections. However, amendments to MARPOL Annex VI for inclusion of requirements for standardization of sampling points requires further proposals for justification.

MISCELLANEOUS

MARPOL Annex I Amendments

The Committee adopted resolution MEPC.266(68) which contains amendments to MARPOL Annex I, Regulation 12, addressing oil residue (sludge) arrangements. The regulation has been substantially restructured and simplified to incorporate existing Unified Interpretations relating to means of disposal, interconnections and tank cleaning arrangements. However, the revision no longer allows for existing arrangements where an oil residue (sludge) tank may have discharge connections to oily bilge water holding tank(s), tank top or oily water separators, as could be allowed under MEPC.1/Circ.753/Rev.1. Any modifications that may be required for ships constructed before 1 January 2017 with arrangements that are not compliant with the revised Regulation 12 requirements are to be completed no later than the first renewal survey carried out on or after 1 January 2017.

Polar Code

The Committee adopted the environment-related provisions contained in the Introduction and parts II-A and II-B of the new International Code for Ships Operating in Polar Waters (Polar Code) by resolution MEPC.264(68). Associated amendments to MARPOL Annexes I, II, IV and V which will mandate compliance with the Polar Code were also adopted by the Committee under resolution MEPC.265(68).

These provisions are scheduled to enter into force on 1 January 2017. New ships constructed on/after 1 January 2017 will need to comply on their delivery. Existing ships, constructed before 1 January 2017, will need to comply with relevant requirements by the first intermediate or renewal survey of the Safety Construction Certificate, whichever comes first, after 1 January 2018

In connection with the adoption of resolutions MEPC.264(68) and MEPC.265(68), the Committee approved a new MEPC Circular (MEPC.1/Circ.856) on Guidance for issuing revised certificates, manuals and record books under Annexes I, II and V of MARPOL for compliance with the environment-related provisions of the Polar Code.

A summary of the new Code is provided in ABS' International Regulatory News Update, Feb 2015, available at:

http://ww2.eagle.org/content/dam/eagle/regulatory-news/2015/MEPC67_Update_r1.pdf.

EGCS Guidelines

The Committee adopted resolution MEPC.259(68) on the 2015 Guidelines for exhaust gas cleaning systems, which amends the 2009 EGCS guidelines (MEPC.184(59)). The amendments include a calculation-based/flow modelling methodology (computational fluid dynamics or other equally scientifically established empirical formulae) for verification of the washwater discharge criteria for pH as an alternative to physical pH measurements at 4m from the overboard discharge. The methodology is to be approved by the flag Administration, subject to certain conditions that are to be documented in the EGCS Technical Manual.

Type Approval for oil content meters

The Committee approved a new circular (MEPC.1/Circ.858) on Guidance for issuing a revised Certificate of Type Approval for oil content meters intended for monitoring the discharge of oil-contaminated water from the cargo tank areas of oil tankers.

This circular refers to the 2013 Amendments to the Revised guidelines and specifications for oil discharge monitoring and control systems for oil tankers (resolution MEPC.240(65)), and clarifies that when an Oil Content Meter (OCM) is tested and submitted for approval on or after 17 May 2013, the form of the Type Approval Certificate shall be in accordance with resolution MEPC.240(65), regardless of whether the OCM is intended for monitoring biofuel blends.

IHM Guidelines

Amendments to the Guidelines for the development of the Inventory of Hazardous Materials were adopted by resolution MEPC.269(68). The 2015 Guidelines for the development of the Inventory of Hazardous Materials supersedes the previous guidelines set forth under resolution MEPC.197(62).

Among other revisions, a threshold value of 0.1% for Asbestos was agreed with the inclusion of an alternate provision whereby a 1% value may be applied provided it is recorded in the Inventory of Hazardous Materials and applied no later than 5 years after the entry into force of the Hong Kong (Ship Recycling) Convention, 2009.

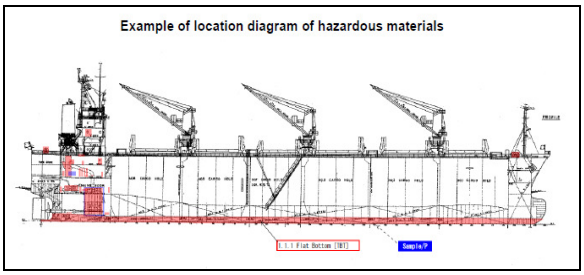

Fig 9 – Example of Hazardous Material Location Diagram