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Marine Environment Protection Committee's 55th Session (9 – 13 October 2006)

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

The 55th session of the Marine Environment Protection Committee met in London from 9 to 13 October 2006 under the Chairmanship of Mr. A. Chrysostomou of Cyprus. The following provides a summary of progress made during the 55th session.

BALLAST WATER MANAGEMENT

Review of the BWM Convention Regulations

Under the provisions of the Ballast Water Management (BWM) Resolution 4, the MEPC continued its review of the BWM Convention's regulations to determine if there were any impediments to the entry into force provisions of to the application of the biological standard contained in regulation D2 applicable to ships with a ballast capacity < 5000 m^3 that are constructed in 2009 and later. This review was to have been completed at this session of the MEPC so that at least a three year period would be available to industry to prepare for the fitting of BW treatment equipment/systems for ships to be constructed in 2009.

The most significant impediment, by far, has been the lack of availability of BW treatment systems which are tested and type approved in accordance with the G8 Guidelines contained in resolution MEPC.140(54). This state of affairs is somewhat understandable in that the extremely robust G10 Guidelines were only adopted only 6 months ago. Specific difficulties that were noted included:

- Achieving the biological efficacy required under regulation D2 of the BWM Convention;
- Producing the requisite test water (*biological soup*) to type approve the systems under the G8 Guidelines; and
- Whether or not by-products created by the treatment systems, including those that may occur naturally, need to be treated as active substances and therefore reviewed under the G9 Guidelines contained in resolution MEPC.126(53).

Although the Committee concluded that BW treatment systems would probably be available for installation on vessels prior to 2009, this conclusion was unacceptable to many and in particular to the shipowner associations who made the plea that certainty needs to be established now and not at the next session of MEPC (July 2007) when the time available to modify ships already contracted for construction would incur excessive cost and/or delivery delays in order to retrofit treatment systems, should they become available, to ships to be built in 2009.

Several Delegations also considered that the current unavailability of treatment technologies may be the impediment for ratification of the Convention by Governments.

In light of the above, discussion proceeded on how the first set of vessels could be pardoned from compliance. Three options were mentioned, but because the Convention has not entered into force, the first two options present legal difficulties:

1. Issuance of exemption certificates;
2. Development of an instrument postponing the compliance for ships built in 2009;
3. Governments that ratify the Convention may declare a reservation on regulation B-3(3).

Overview of Current Technologies

Table 1, below, provides an overview of the treatment technologies that were submitted to MEPC 55:

Treatment Method (* Active Substance)	US$/m3 of BW	Footprint m2 @ Capacity (m2/hr)
Hydro-cavitation	n/a	Fit in pipeline
Filtration *	0.40	5.8 @ 250
Cavitation/Ozone generator *	0.15	nominal
Filter/Electrolytic Chlorination	n/a	70 @ 800
Magnetic filtration *	n/a	20 @ 50
Filter/Electrolysis *	n/a	6 @ 500
Hydro-cyclone/Oxidizer *	0.30	17 @ 1000
Filtration / Disinfectant *	0.02	5 @ 300
Hydro-cyclone / UV	n/a	n/a
Electrolysis	n/a	9.5 @ 200
Cavitation/Ozone generator *	n/a	10 @ 1000
Cavitation/N_2 saturation	n/a	3m pipeline insert
Filtration / UV	n/a	2.6 @ 500
Filtration/Oxidation	0.06	22 @ 1200
+ US$ 1 million for installation		n/a – not available

Table 1 – Overview of Treatment Technologies

An update of these and new treatment technologies is scheduled to be reported to MEPC 56 in July 2007.

Alternative BW Management Methods

Descriptions of two alternative BW management concepts were received and found to show some promise to the extent that they might be considered suitable for approval in principle by the Committee.

Although the BWM Convention allows for such alternative methods, provided that such methods ensure at least the same level of protection to the environment, human health, property or resources, and are approved in principle by the Committee, the Committee did not take any action at this session.

A brief overview of these two alternatives is provided below:

Flow-through System Concept

This patented technology, developed by Vela International Marine Limited, utilizes a central pipeline at the bow which, when underway, allows water to enter the pipeline at the bow at a pressure sufficient enough to overflow the ballast in tanks through the tank's outer shell openings located at or near the ballast water line. See Figure 1, below.

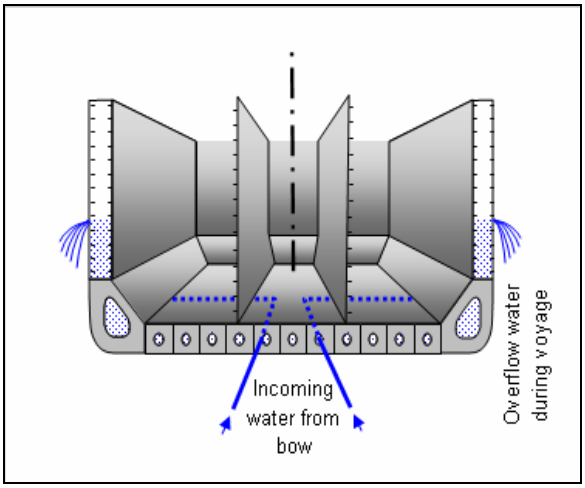

Figure 1 – Overflow Concept

Sufficient flow is claimed to be produced to ensure that the entire contents of the ship's ballast spaces are changed by three times the volume (as required by the BWM Convention) in 36 hours assuming a speed of 14 kts. The cost to retrofit a VLCC is estimated to be in the order of $US 500,000.

NOBS Concept

The Non Ballast Water Ship (NOBS) concept, introduced by the Shipbuilding Research Center of Japan, circumvents the need for ballast to maintain a sufficient draft to preclude bow slamming and propeller emergence in the light condition by providing a transversely raked hull bottom. This design is reported to afford a sufficiently deep enough transit draft without ballast water when the ship is light, carrying cargo. The decreased displacement and reduced deadweight is compensated for by widening the ship's breadth. A comparative illustration is indicated in Figure 2 below.

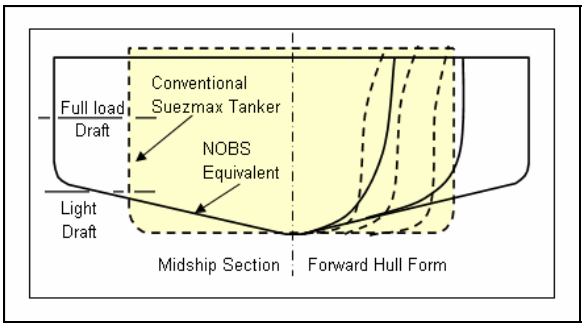

Figure 2 – NOBS vs Convention Suezmax

Table 2 compares the principal characteristics between a NOBS and conventional Suezmax tanker. Hull weight increase is reported to be in the order of 4500 tons using mild steel.

Principal Characteristics	Coventional Ship	NOBS Ship
LBP (m)	265	267
LWL (m)	271	271
Beam (m)	43	56
Bottom Rake (deg)	0	15
Full Load Draft (m)	16	16
Full Load Displ.(mt)	160,000	162,500
Light Draft - AP (m)	8.8	7.9
Light Draft - FP (m)	5.8	3
Light Displ. (mt)	68,650	28,100
Light Water Bst (m)	43,000	0

Table 2 – "NOBS" vs Conventional Suezmax

Assessment of Treatment Systems

The evaluation, carried out by a Review Group, included an assessment of safety considerations, environment acceptability, practicability, cost effectiveness, biological effectiveness, and the socio-economic effects specifically in relation to the developmental needs of developing countries. The following provides an overview of the assessment:

- Safety – the hazards were considered be nothing outside that which is normally expected onboard commercial ships.
- Environment Acceptability – there is some concern on whether the waste water needs to be retained or can be discharged other than at the point of origin.

- Practicability – Modular systems are envisaged in order to reduce the footprint and to accommodate increased ballast pump capacities. The range of consumables and spare parts were considered to be comparable with other shipboard equipment. There is concern about system reliability and durability as there has not yet been any G10-type approved system that has proven itself to date. It was estimated that 8 months would be needed to test treatment systems in parallel (on land and onboard ship) as per the G8 Guidelines.
- Cost – Referring to Table 1, above, initial installation costs can be substantial.
- Biological Effectiveness – Although most systems were found to meet some aspects of the D2 standard, there has not been any system to date that has been approved under the G8 Guidelines.
- Socio-economic Effects – A reduction of economic costs and environmental damages is expected, but it was recognized that the cost of implementing treatment systems is absorbed by the ship owner and passed on to consumers in the form of higher transportation costs.

Design Recommendations for BWEx and Sediment Control

The Committee adopted new resolutions containing two more sets of guidelines for the implementation of the BWM Convention.

The Guidelines for ballast water exchange design and construction standards (G11) provide general recommendations to consider when designing ships that employ ballast water exchange (BWEx) under regulation D-1. Remote data management, monitoring and/or recording systems for all ballast water operations and treatment processes are recommended to be fitted. Excessive torsional stress is to be avoided when the sequential BWEx method is used. Ships using the flow through method should be designed to avoid water overflowing directly on to deck and over pressurization of ballast tanks. Where the dilution BWEx method (simultaneous filling/emptying of the tank) is to be used, provisions should be made to avoid the risk of over pressurization of ballast tank.

The Guidelines on design and construction to facilitate sediment control on ships (G12) were developed to minimize the uptake and undesirable entrapment of sediments, facilitate removal of sediments, and provide safe access to allow for sediment removal and sampling and thereby, reduce the possibility of introducing harmful aquatic organisms and pathogens. Included are recommendations for structural members to minimize sediment accumulation and to provide effective flushing.

AMENDMENTS/INTERPRETATIONS

Ship Access to Shore-side PC Capabilities

MARPOL regulation I/37.4 requires all oil tankers $\geq$ 5000 dwt to have prompt access to computerized shore-based damage stability and residual structural strength calculation programs by 1 January 2007. The Committee agreed with the IACS proposal such that the extent of verification needed to be carried out is:

- verify that a contract exists onboard linking the ship with a shore-based service provider with access to an up to date computer model of the ship and that a copy is kept on board;
- acquire a statement from the shore-based service provider indicating that proven computer hardware and software with trained personnel are available and capable of providing computer calculation capabilities as per the above-mentioned regulation; and
- verify that the master has means to accessing to the shore-based firm at any time.

MARPOL IV, Sewage Discharge Restrictions

MARPOL IV requires that untreated sewage, which may be discharged at more than 12 nautical miles from the nearest land, should not be discharged instantaneously but at a *moderate rate* when the ship is en route and proceeding at a speed not less than 4 knots. The MEPC adopted a new resolution containing recommendations which define a *moderate rate* of discharge on untreated sewage to be $0.00926(V_*D_*B)$, in m^3/hr, where V is ship's average speed (knots) over the period, D is draft (m) and B is breadth (m).

MARPOL IV, Sewage Treatment Arrangement

The Committee adopted a new MARPOL Unified Interpretation which incorporates the IACS submission. In effect, all ships subject to MARPOL IV (this includes non-self propelled ships), irrespective of size and whether or not a sewage treatment plant or sewage holding tank is fitted, shall be provided with a pipeline and the relevant shore connection flange for discharging sewage to port reception facilities. The Committee agreed that such a connection may be needed when a sewage treatment plant is not available (due to malfunction or maintenance); where the discharge of sewage into the sea is prohibited by local law; where a holding tank needs to be emptied for tank cleaning and/or inspection purposes; or in the event of a prolonged stay in port where the capacity of the holding tank is exceeded.

Revised LHNS Guidelines

The Committee adopted a new resolution which amends the Guidelines for Transporting and Handling Limited Amounts of NLS in Bulk on Offshore Support Vessels, A.673(16), the LHNS Guidelines. In addition to the use of permanently attached deck-tanks, the amendments allow properly located and secured portable tanks meeting the requirements of the International Maritime Dangerous Goods (IMDG) Code for cargoes permitted to be loaded under these Guidelines. The list of cargoes permitted to be carried onboard has been expanded and includes oil-based and water-based drilling mud as well as drilling brines.

MARPOL Annex I - CAS Amendments

A new resolution was adopted which, upon entry into force in March 2008, will implement greater control on the proceedings and necessary exchange of information between parties where there is a change of flag, ownership or recognized organization affecting an oil tanker holding a valid Statement of Compliance, or a change of flag occurring during a survey being carried out under Condition Assessment Scheme (CAS).

MARPOL Annex I - Oily Mixture Discharges

MARPOL Annex I prohibits any discharge into the sea of oil or oily mixtures from ships except when a number of conditions are satisfied, one of which includes that the ship must be proceeding *en route*. Annex I does not contain a definition of *en route* and, as a consequence, it could be interpreted so as to allow discharges at any point where the ship is underway, without a minimum distance requirement from the nearest land which had previously been 12 nm in the original version of MARPOL Annex I.

Consistent with the intent of MARPOL, the Committee agreed to interpret *en route* to mean that the ship is underway at sea on a course or courses, including deviation from the shortest direct route, which as far as practicable for navigation purposes, will cause any discharge to be spread over as great an area of the sea as is reasonable and practicable. This is consistent with the definition in MARPOL Annex II for noxious liquid substances.

MARPOL Annex III (Harmful Substances)

The MEPC adopted a new resolution which extends the jurisdiction of a port State control officer to ships in offshore terminals of that port State (previously it had been limited to ports of that State) under the provisions of MARPOL Annex III for the prevention of pollution by harmful substances. This is scheduled to enter into force on 1 January 2010. Also, based on reassessments carried out under the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS), the amendments contain new criteria for the identification of harmful substances, in packaged form, which contain fish, crustacean or algae or other aquatic plants.

IBC Code – Revised List of NLS

The Committee approved a revised list of substances that have been classified or re-classified under the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS) since the December 2004 adoption of the amended International Bulk Chemical (IBC) Code. These substances are to be included in MEPC.2/Circular 12 which is scheduled to be published 31 December 2006 and will apply to substances lifted on/after 1 January 2007. A complete listing of the classified and re-classified substances as well as a detailed overview of the revisions of MARPOL Annex II concerning the carriage of NLS is available at www.eagle.org/regulatory/newsroom.html#abs.

MISCELLANEOUS

Ship Recycling Convention Update

Except for the agreement that regulations should take on the form of a new Convention (as opposed to a new Annex to MARPOL) applicable to ships of 500gt and above, little agreement on proposed revisions to the draft convention was achieved at this session. The convention aims to regulate ship recycling by covering the design, construction and operation of ships so that the ship can be prepared in a safe and environmentally acceptable manner for recycling. Ship recycling facilities would also be regulated to ensure safe and environmentally sound recycling. The Committee agreed that the intersessional working group should meet again between MEPC sessions in light of the Committee's formal request to IMO's Council to schedule a diplomatic conference in the 2008-2009 biennium.

There are numerous issues that remain unresolved, including:

- The relationship and extent of jurisdiction of the International Labor Organization and the impact of the Basel Convention on ship recycling facilities.
- The extent to which the regulations should be implemented to existing ships insofar as the development of accurate inventories of hazardous construction material that may have been used and safety issues of personnel involved in the development of such inventories.
- The extent to which IMO should monitor (audit) implementation of the convention.
- The extent to which detected violations for past non-compliance of ships should be accounted.

World-wide Sulphur Monitoring

Based on information received from the Netherlands, under a projected funded by several EU States on sulphur monitoring, the Committee noted that the average sulphur content of residual fuel being measured for 2003, 2004 and 2005 is 2.70% and that this presents the fifth consecutive rolling average calculated since measurements began in 1999.

The Guidelines for sulphur monitoring contained in MEPC.42(83) require the MEPC to consider the need for further measures to reduce SOx emissions from ships state if in any given year the three year rolling average exceeds the reference value by 0.2%.

As can be seen from Table 3 this has not occurred so the Committee agreed that no further measures should be taken at that stage.

Year Tested	Average Sulphur Content Annual	3-Year	Samples Tested	Corresponding FO (million mt)
1999	2.70	-	53000	47.0
2000	2.70	-	54000	49.0
2001	2.70	2.70	62000	56.0
2002	2.60	2.67	63000	59.0
2003	2.70	2.67	66958	67.4
2004	2.70	2.67	66312	74.4
2005	2.70	2.70	79592	82.4

Table 3 – Average FO Sulphur Content

Note - For further information concerning the above information, please contact ABS Regulatory Affairs at :
tel 201-226-5320 | fax 201-226-5314 | email: gshark@eagle.org