



# CHALLENGES IN THE COLLECTION AND TREATMENT OF “NEW” TYPES OF WASTE

Piraeus, 28<sup>th</sup> March 2014

ECO PORTS WORKSHOP



# CONTENT

- WHAT IS “EUROSHORE”?
- GOALS
- RECEPTION STORAGE AND TREATMENT
  - SCRUBBERS
  - BALLAST WATER
  - CARGO RESIDUES
- CONCLUSIONS



# ABOUT EUROSHORE

- EUROSHORE IS AN ASSOCIATION COMPRISING OF TWO TYPES OF MEMBERS:
  - NATIONAL ASSOCIATIONS ( BELGIUM, ITALY, THE NETHERLANDS)
  - INDIVIDUAL COMPANIES: BELGIUM, ESTONIA, FRANCE, GERMANY, GIBRALTAR, GREECE, ITALY, NIGERIA, POLAND, ROMANIA, SPAIN, THE NETHERLANDS, TURKEY, UK....)
- EUROSHORE IS ALSO PRESENT VIA THE BRANCHES OF ITS MEMBERS IN THE USA, LATIN AMERICA AND THE MIDDLE EAST.
- EUROSHORE REPRESENTS CA 70% OF THE EUROPEAN MARKET.



# GOALS

- Perform the service needed within a given timeframe (within 24 hours)
- Use adequate and qualified equipment and personnel to carry out the service (ISO certification)
- Be transparent in procedures and invoicing
- Establish a good partnership between the ship/agent and the service provider
- Respect all laws applicable on our activities
- Take into account the life cycle of products in order to maximize re-use and recycling



# AIR POLLUTION-SCRUBBERS





# SULPHUR LIMITS

Table 1: Fuel Oil Sulfur Limits

	GLOBAL	ECA
Initial limits	4.5%	1.5%
1 July 2010	4.5%	1.0%
1 Jan. 2012	3.5%	1.0%
1 Jan. 2015	3.5%	0.1%
1 Jan. 2020	0.5%	0.1%



# SULPHUR LIMITS

-SCRUBBERS CAN BE USED IN COMBINATION WITH HIGH SULPHUR FUELS WHICH ARE CHEAPER

-	IFO380	MGO 0,1%
PIRAEUS	595\$	910\$
R'DAM	572\$	865\$

SOURCE: Hellenic Shipping News 17th March 2014



# SCRUBBERS

- SCRUBBERS REMOVE > 97% OF THE SULPHUR OUT OF THE EXHAUST GAS. SHIPS THAT ARE EQUIPPED WITH A SCRUBBER ON THE MAIN ENGINE CAN MEET THE 0,1% LIMIT IF THEY BURN HFO OF 3% SULPHUR
- THERE ARE TWO TYPES OF SCRUBBERS: A DRY AND A WET SCRUBBER.
- THE WET SCRUBBERS CAN OPERATE IN 'OPEN LOOP' OR 'CLOSED LOOP' OR AS AN HYBRID SYSTEM
- TECHNOLOGY IS STILL UNDER DEVELOPMENT
- THE NUMBER OF SCRUBBERS INSTALLED IS LIMITED





# SPECIAL AREAS IN THE EU



Figure 1: Baltic and North Sea/English Channel SACs



# SPECIAL AREAS WORLDWIDE





# SCRUBBERS



Picture courtesy of Maersk Line and Breen Technologies



# EXHAUST GAS CLEANING APPROVAL

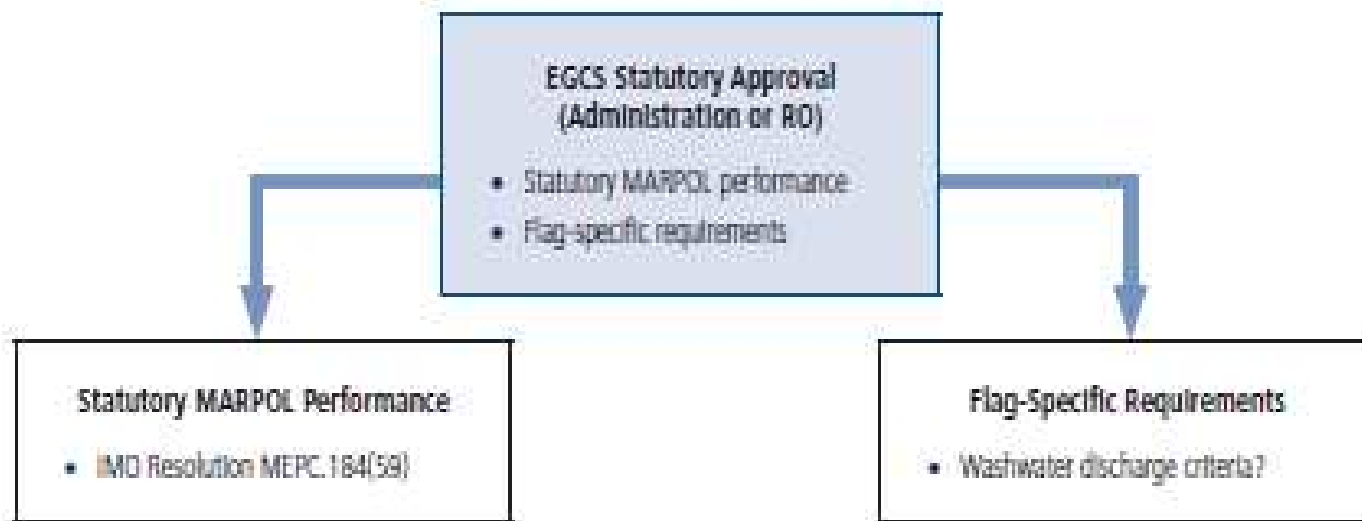


Figure 7: EGCS Statutory Approval



# EXAMPLE OF A SCRUBBER





## CONCLUSION ON SCRUBBERS

- SCRUBBER TECHNOLOGY IS STILL UNDER DEVELOPMENT
- A WET/ HYBRID SCRUBBER GENERATES:
  - slurry that can be stored in a sludge tank
  - bleed off water can be stored in a sludge tank
  - water that is discharged in the surface water
- The waste generated by a scrubber contains heavy metals....Full details on the generated waste are not yet available and depending on the quality of the HFO.
- The 'automatic discharge' can be in conflict with port regulations that forbid the dump of waste water or with the water quality standards.



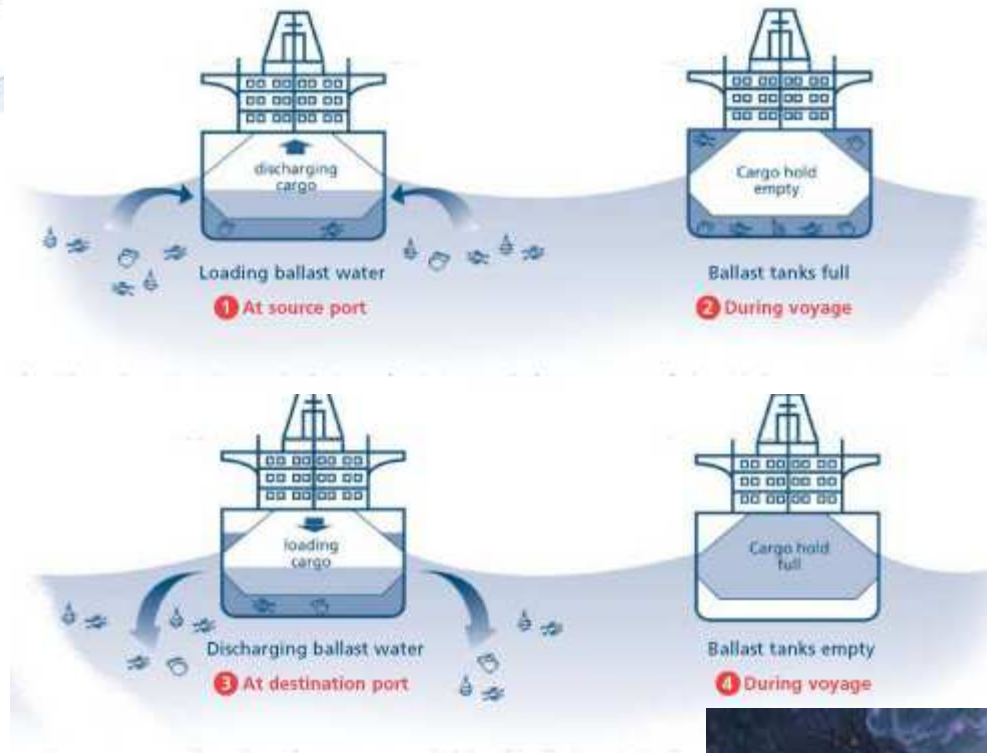
# BALLASTWATER

- INTERNATIONAL CONVENTION FOR THE CONTROL AND MANAGEMENT OF SHIPS' BALLAST WATER AND SEDIMENTS
- ADOPTION: 13 FEBRUARY 2004. ENTRY INTO FORCE: 12 MONTHS AFTER RATIFICATION BY 30 STATES, REPRESENTING 35% OF WORLD MERCHANT SHIPPING TONNAGE
- SITUATION 01.01.2014: 38 COUNTRIES REPRESENTING 30,38% OF WORLD FLEET
- REGIONAL IMPLEMENTATION (SOMTIMES WITH MORE STRINGHENT PARAMETERS) ALREADY IN PLACE IN USA-CANADA-AUSTRALIA-MEDITERANNEAN SEA....
- CRITERIA FOR SEDIMENTS ARE RATHER VAGUE AND DEPENDING ON NATIONAL LEGISLATION.





# Ballastwater







# AN EXAMPLE OF AN INVASIVE SPECIE



A Chinese Mitten Crab, one of many invasive species thought to have been introduced in ships' ballast water



# 65,000 SHIPS NEED RETROFITTING

Ballast capacity	Year of ship construction			
	Before 2009*	2009+	2009-2011	2012+
< 1,500 m <sup>3</sup>	BWE or BWT until 2016; BWT only from 2016	BWT only		
1,500 – 5,000 m <sup>3</sup>	BWE or BWT until 2014; BWT only from 2014	BWT only		
> 5,000 m <sup>3</sup>	BWE or BWT until 2016 BWT only from 2016		BWE or BWT until 2016; BWT only from 2016	BWT only

\*These ships need to comply at the first intermediate or renewal survey after the anniversary of the date of delivery in the year of compliance.

BWE – ballast water exchange  
BWT – ballast water treatment



# BALLAST WATER DISCHARGE



Ballast Water Discharge



## Removal of Mud / Sediment



- **Dangerous Confined Space**
- **Impractical / Unsafe**
- **Not allowed at many terminals**





# CONCLUSION BALLASTWATER

- IMPLEMENTATION OF THE CONVENTION WILL BE SUBJECT TO NATIONAL LEGISLATION
- STANDARDS CAN DIFFER WITHIN THE EU-COUNTRIES
- AT PRESENT THERE ARE NO QUALITY STANDARDS FOR BALLASTWATER SEDIMENTS
- AT THIS MOMENT IT IS UNCLEAR IF PRF'S ARE NEEDED, SHIPS CAN BE EXEMPTED TO USE THEM IF THE BWT SYSTEM FAILS
- WE SEE THAT PRF'S ARE OFFERING BALLAST WATER TREATMENT FACILITIES SOMETIMES BY USING A BARGE OR PONTOON.



# CARGO RESIDUES

-CARGO RESIDUES ARE DEFINED AS: THE REMNANTS OF CARGO REMAINING ON DECK OR IN HOLDS FOLLOWING LOADING AND UNLOADING, INCLUDING:

-SPILLAGE

-WET AND DRY CARGO RESIDUES

-RESIDUES ENTRAINED IN WASH WATER

-THE DELIVERY TO A PORT RECEPTION FACILITY DEPENDS ON THE TOXICITY OF THE PRODUCT OR CLEANING AGENT USED FOR THE CLEANING OF TANKS OR HOLDS. SINCE 01.01.2013 THE MARPOL RULES BECAME MORE STRICT.





# CARGO RESIDUES





# CARGO RESIDUES







# CARGO RESIDUES





# CARGO RESIDUES





# CARGO RESIDUES

-ACTUAL PRACTICES





# CARGO RESIDUES





# CARGO RESIDUES







## HOLD WASHDOWN

- by crew members at sea

Stromme



Stromme



UK P&I Club



Standard P&I

**Hold bilge suction  
cannot handle  
heavy solids –  
residue is filtered  
through strum box**



# VAPOUR RECOVERY UNIT





# MOBILE VAPOUR RECOVERY UNIT







# CONCLUSION CARGO RESIDUES

-REVISED MARPOL ANNEX V:

-ANY CARGO RESIDUE OR HOLD WATER HARMFUL TO THE MARINE ENVIRONMENT

-CANNOT BE DISCHARGED IN THE SEA

-MUST BE DISCHARGED INTO A PORT RECEPTION FACILITY

-MEMBER STATES SHOULD ENSURE (ADEQUATE) GARBAGE RECEPTION FACILITIES WITHOUT CAUSING UNDUE DELAY.

-IF NO RECEPTION FACILITIES ARE PROVIDED IN THE PORT OF UNLOADING AND PORT OF DESTINATION, THE DISCHARGE IN SEA CAN BE PERMITTED.



# Thank You

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