

Sustainable technology –
Why Europe has to be the leader ?

Mare Forum Marseille Maritime 2007

Bernard ANNE



Europe : a pioneer for maritime technology

The gas transport

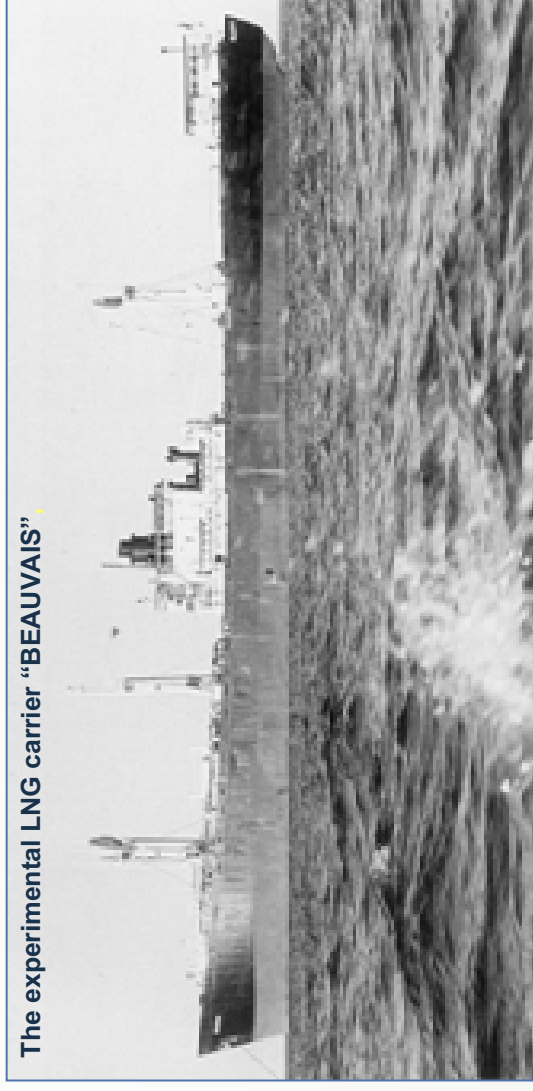


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The 25,000 cu m3 LNG ship "Jules Verne"

The experimental LNG carrier "BEAUVAIS"



- ▶ 1953 : First pressurised LPG carrier built in Europe the m/s *Kosan Gas*
- ▶ 1960 : delivery of the first semi-pressurised LPG carrier the m/s *Descartes*
- ▶ 1962 : delivery of the first LNG carrier, the m/s *Beauvais*
- ▶ 1965 : First commercial voyage of the m/s *Jules Verne*

Europe : the world's leading centre of technology

France has built the first 3 LNG carriers fitted with dual fuel diesel electric propulsion



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Europe : a pioneer for maritime technology

The gas transport



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LNG carrier Excelsior (138,000 cu m) for Exmar
1st ship with regasification plant and turret
for offshore unloading



Europe and the phasing-out of single hull tankers

Modern double hull tankers are equipped with diesel engines, always more powerful and efficient, reducing fuel consumption and designed by European Engine Manufacturers



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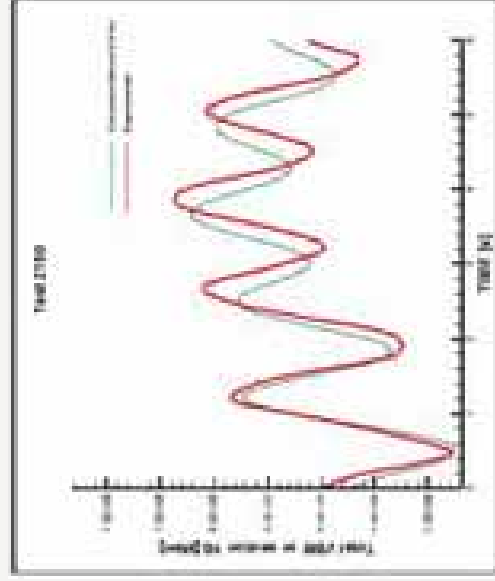


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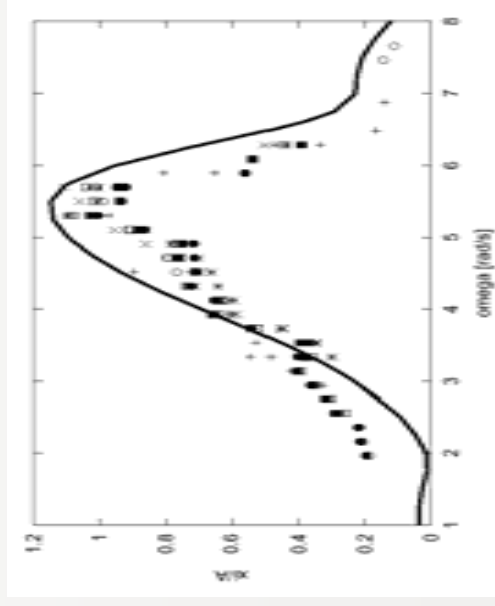


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Whipping model test and computation



Springing model test and computation



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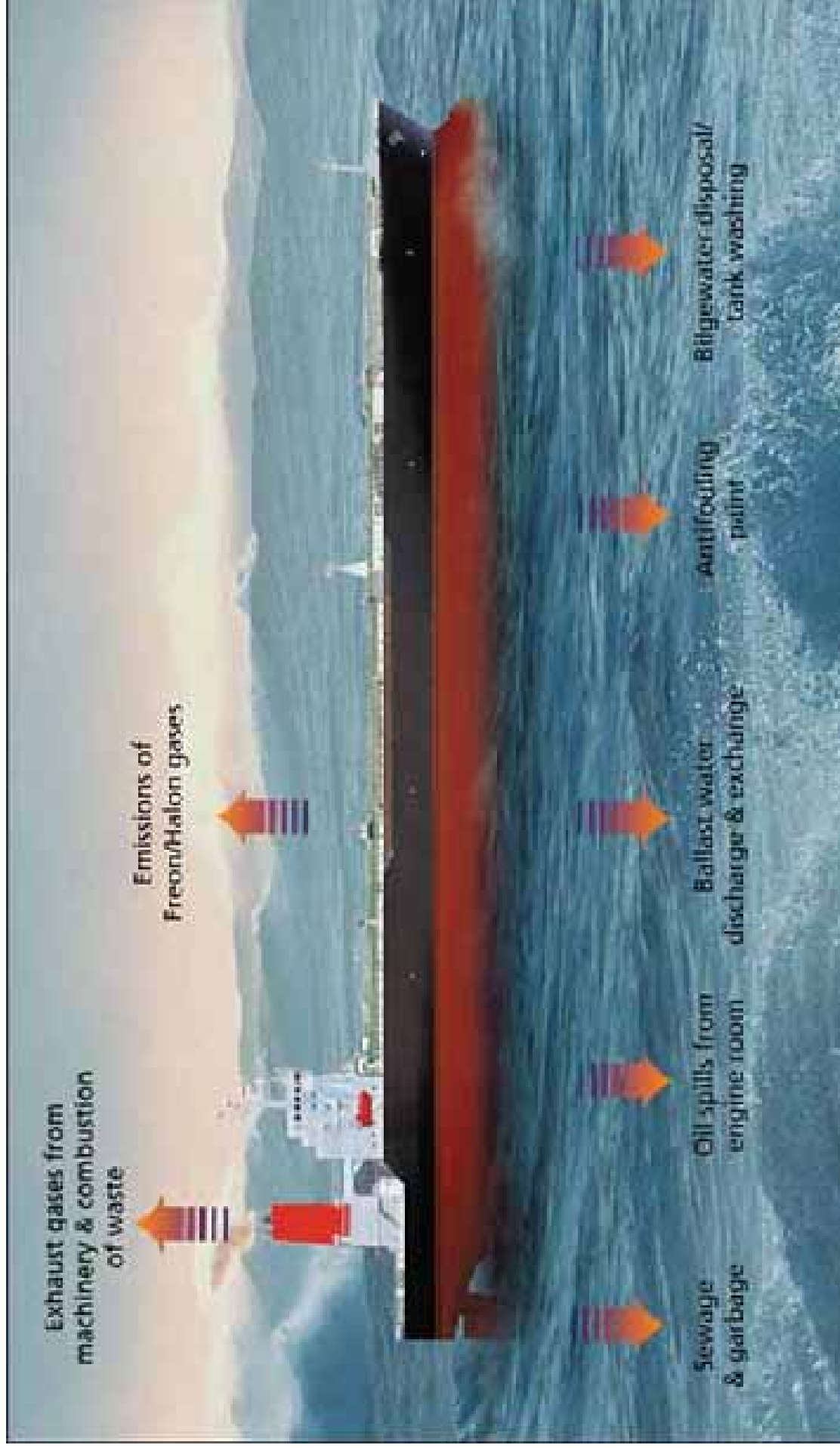
The Msc Musica is classed with the VeriStar Cleansea notations

- ◇ Defined waste streams generation
- ◇ Advanced Wastewater Treatment (US National Selfish Sanitation Program) – Sludge treated on board
- ◇ Collected sewage, gray water and galley gray water collected separately
- ◇ Sewage and gray water management & discharge control plan
- ◇ Computation of No Discharge period
- ◇ Periodical tests and measurements

Shipping is perceived by public opinion as a polluter



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Sustainable technology to reduce emissions issues



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R&D on hydrodynamics and efficiency
of propellers and engines



Design of hull forms and use of
coating to reduce fuel consumption

Role of class : safer ships for cleaner seas



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Issuance of CSR Rules for bulk carriers and oil tankers on January 2006



CSR for Bulk Carriers

- Complete set of Structural Rules for SSS and DSS Bulk Carriers
- Length greater than or equal to 90m



CSR for Double Hull Oil Tankers

- Complete Set of Structural Rules for Double Hull Oil Tankers
- Length greater than or equal to 150m

Sustainable technologies will revolutionise shipping



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Move Forward with Confidence