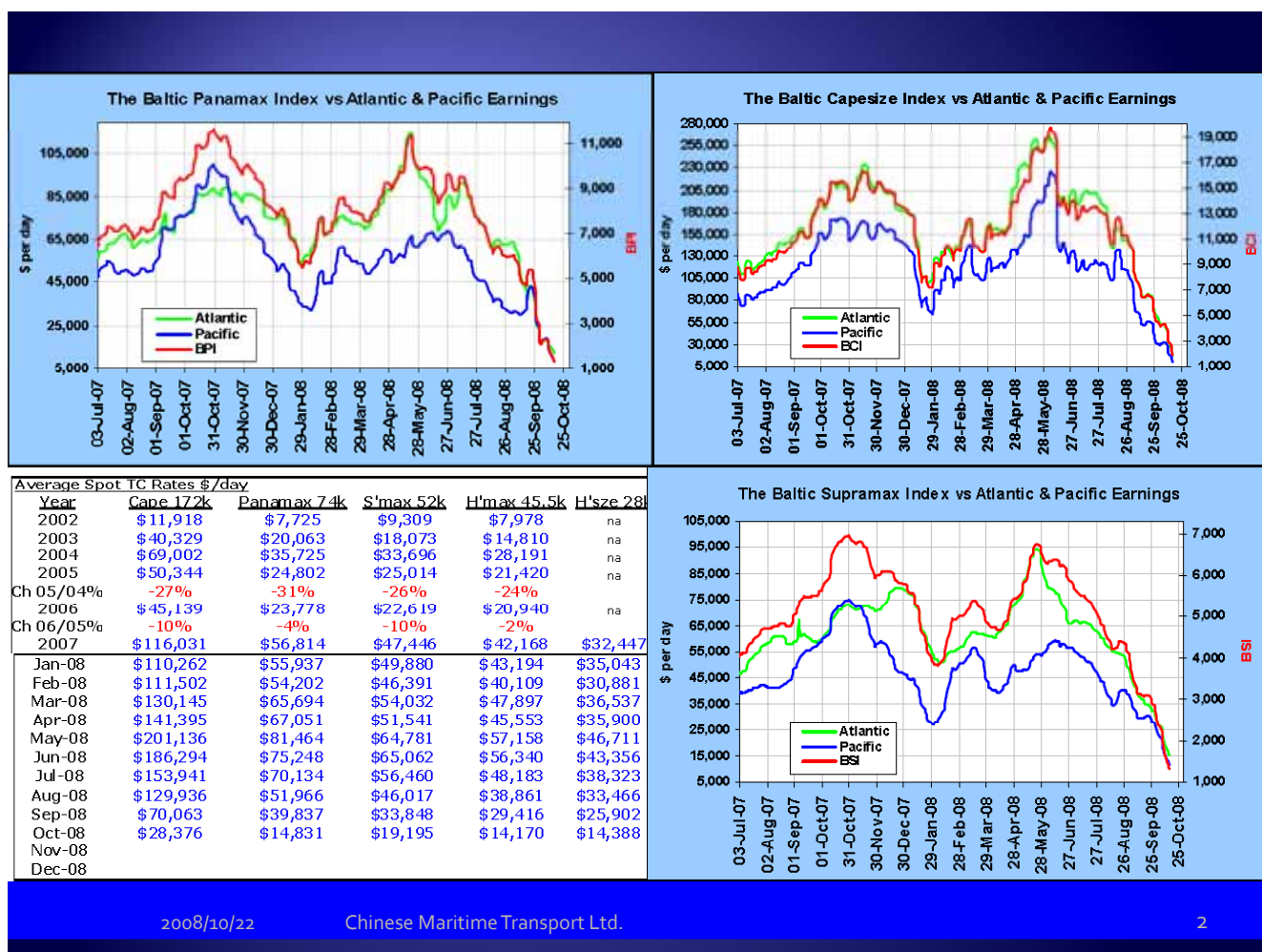
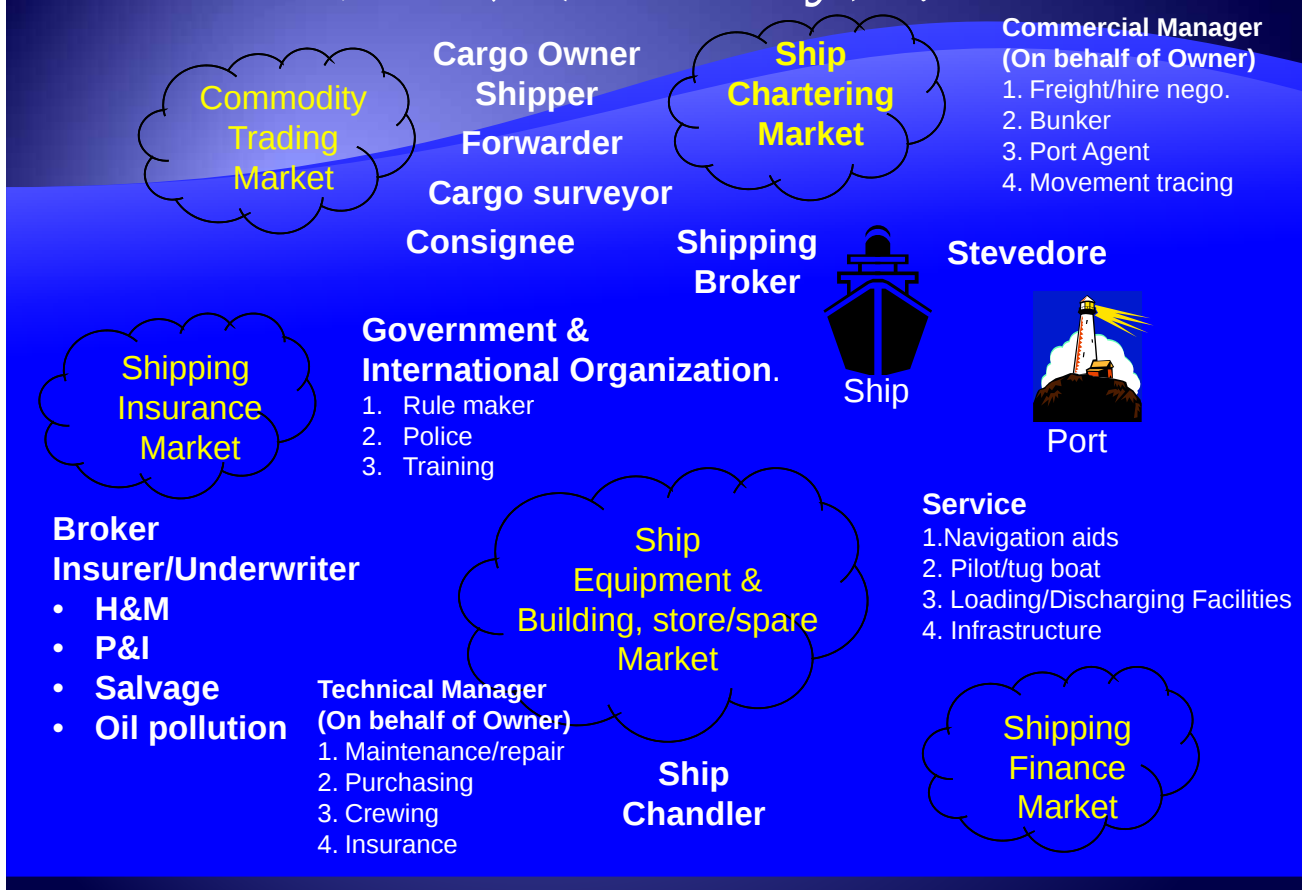




BDI(Baltic Dry Index)

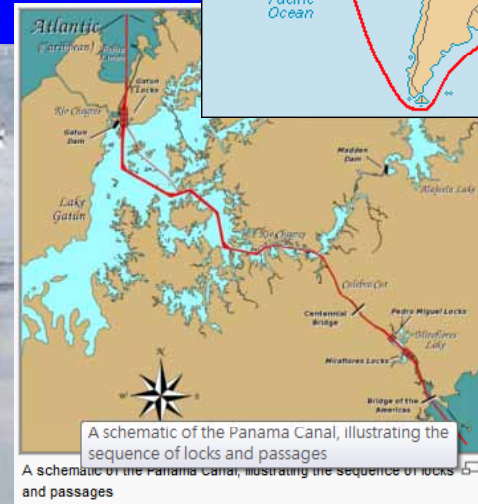
- ◆ 波羅的海散裝船指數
- ◆ (BDI為海岬型(Capesize)、巴拿馬型(Panamax)及輕便型(Handysize) 各佔權重三分之一的綜合指數)
- ◆ 而海艙型、巴拿馬型及輕便型散裝輪及散裝輪的運價指數分別由BCI(Baltic Capesize Index)、BPI(Baltic Panamax Index)及BHI(Baltic Handy Index)列示。

海運業(Industry)家族



Factors Influence Dry Bulk Carrier

- ◆ Demand - Trading Route
- ◆ Supply - Tonne Mile increased
- ◆ Design - Casualty Consequence
- ◆ Operation - Port Facilities



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Vessel

- ◆ Vessel is a carrier transport cargoes across water
- ◆ Vessel is a System Engineering
 - ◆ Hull structure
 - ◆ Navigation and Communication
 - ◆ Maneuver and Mooring
 - ◆ Cargo system
 - ◆ Propulsion and Resources Center
 - ◆ Safety and Life Saving
 - ◆ Living Quarter

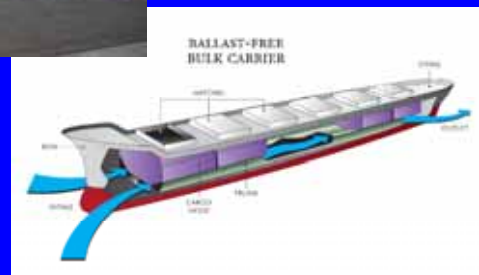
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Cargo system – Dry Bulk Carrier

- ◆ Cargo Hold Structure
- ◆ Hatch Cover
- ◆ Ballast System
- ◆ Cargo Gear



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Size of Dry Bulk Carrier

◆ 輕便型(HANDYSIZE)

- ◆ 載重5萬噸以下
- ◆ 承載近洋貨物，如穀物、鋼材、紙漿、水泥

◆ 巴拿馬極限型(PANAMAX)

- ◆ 載重5-8萬噸
- ◆ 承載遠洋貨物，如穀物、煤炭、礦砂

◆ 海岬型(CAPESIZE)

- ◆ 載重12-18萬噸以上
- ◆ 承載鐵礦砂、煤炭等基本工業原料

◆ SUPRAMAX

- ◆ 載重5-7萬噸
- ◆ 承載近洋貨物，如穀物、鋼材、紙漿、水泥

◆ MINICAP

- ◆ 載重8-13萬噸
- ◆ 承載鐵礦砂、煤炭等基本工業原料

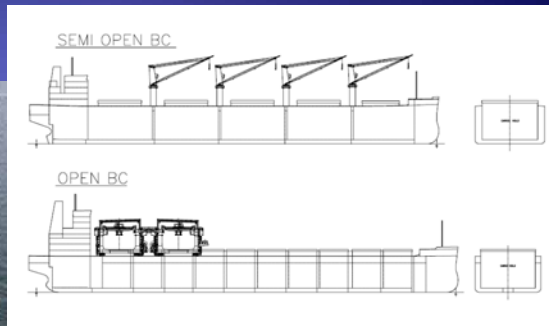
◆ VLOO

- ◆ 載重20萬噸以上
- ◆ 承載鐵礦砂、煤炭等基本工業原料

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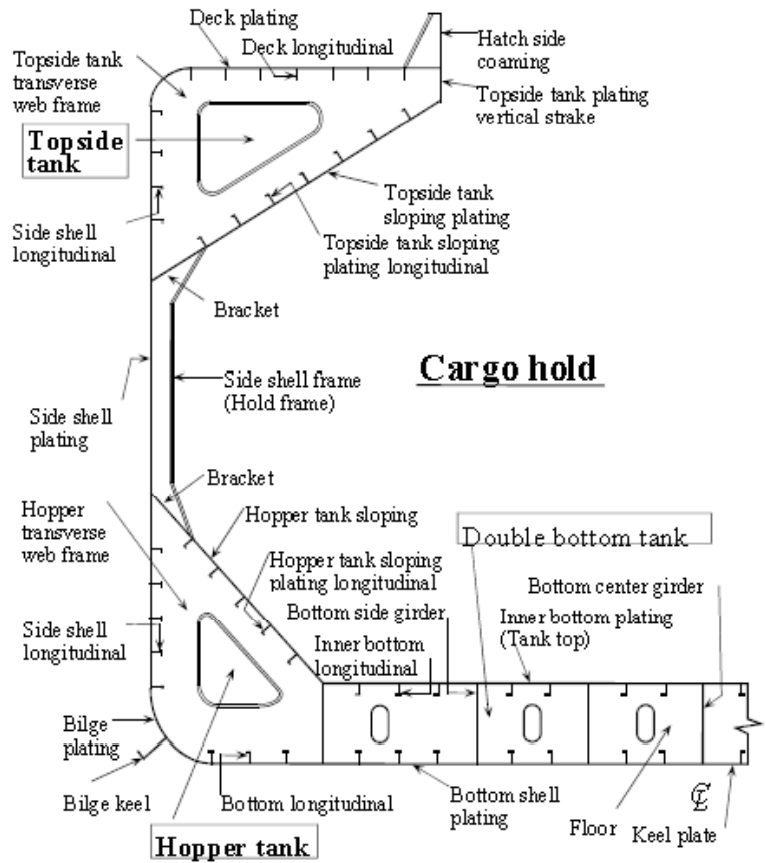
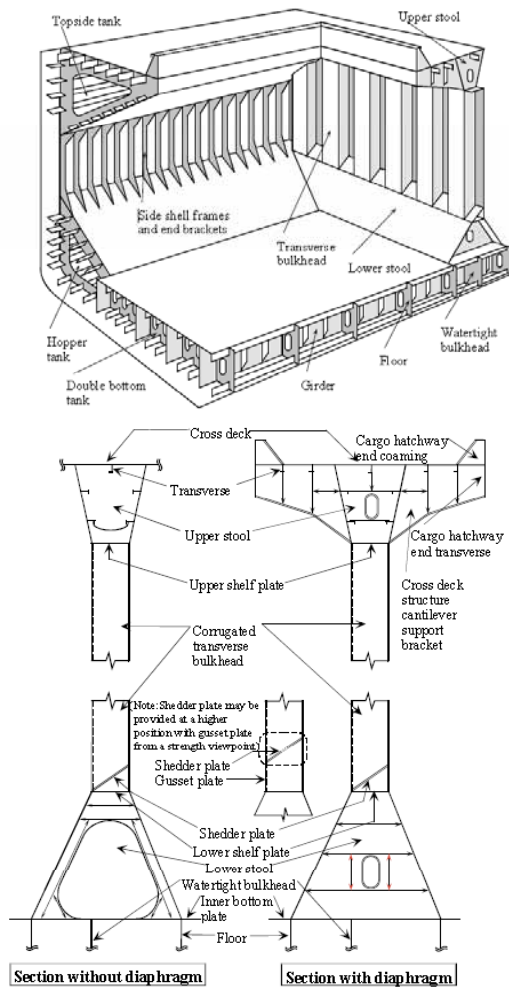


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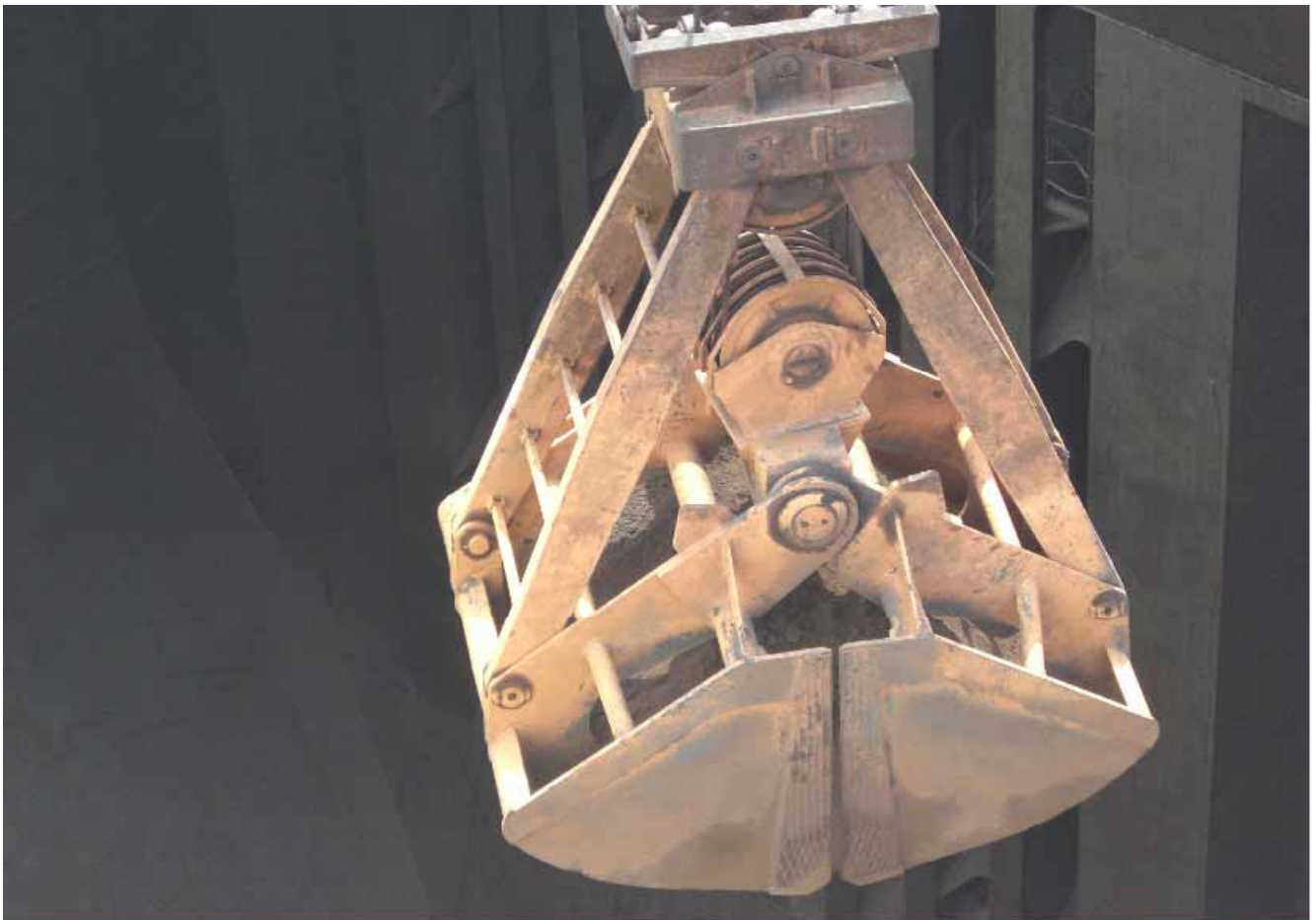
Typical Structure Cargo Hold



Cargo Hold – Single Hull







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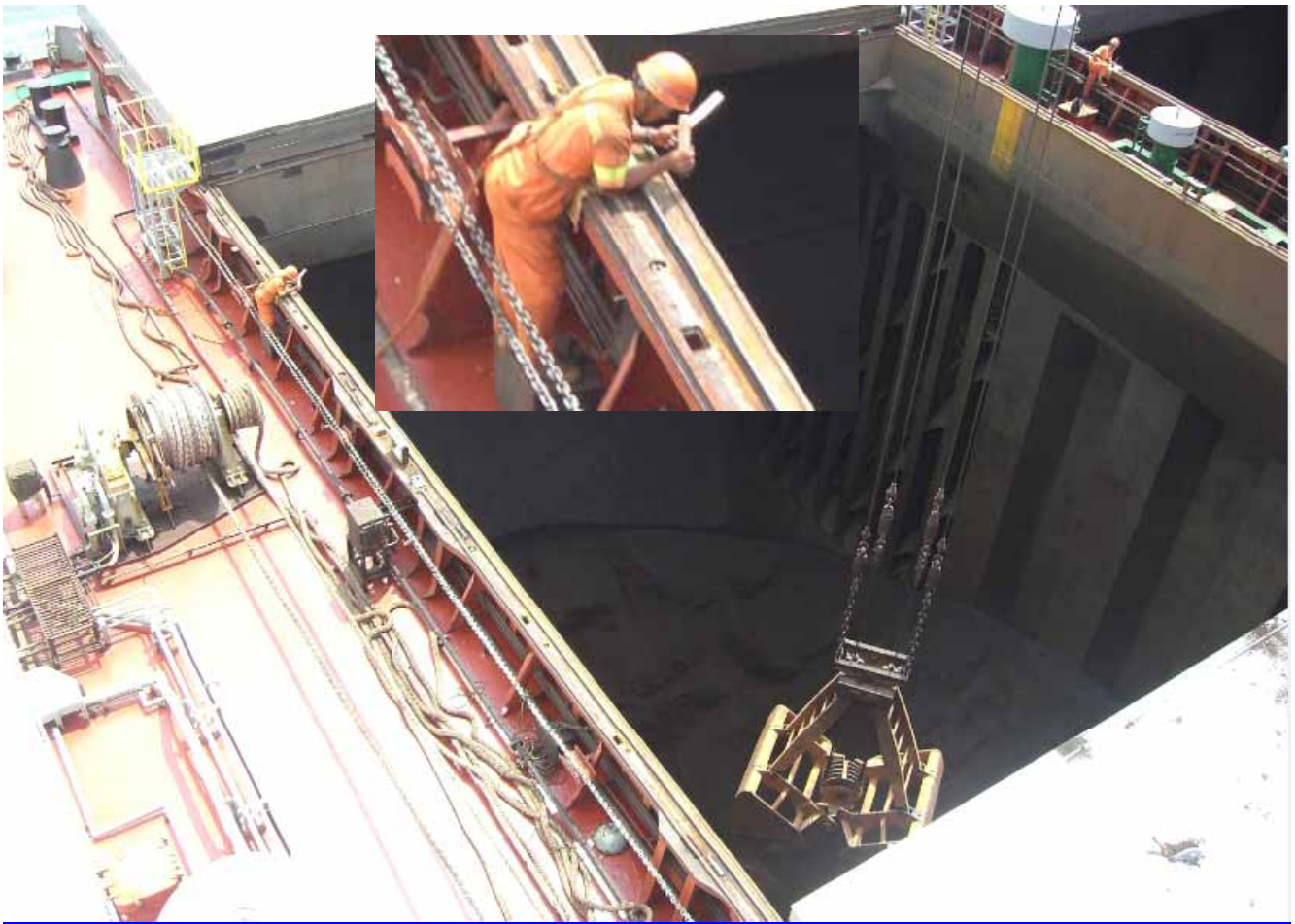
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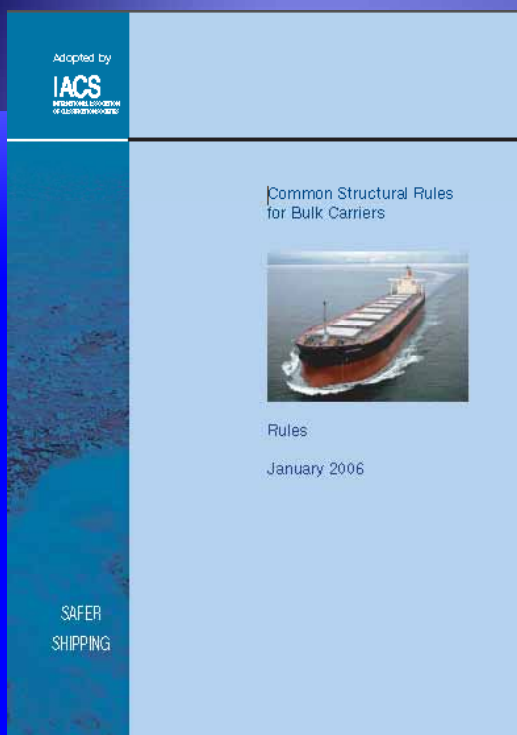


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CSR – Construction Common Rule



◆ Design life

- ◆ 25 years
- ◆ depending on
 - ◆ actual conditions and maintenance of the ship
 - ◆ aging effects, in particular fatigue, coating deterioration, corrosion, wear and tear.

◆ Environmental conditions

- ◆ trading in the North Atlantic
- ◆ Structural accessibility

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Safety & Quality Control during Operation

- ◆ ISM (Planned Maintenance Scheme)
- ◆ PSC (Port State Control)
- ◆ Class Survey (Thickness Measurement)
- ◆ CAP (Condition Assessment Program)
- ◆ RightShip – Rating System

Reference

- ◆ International Convention on Load Lines (ILLC; IMO)
- ◆ International Convention for Safety of Life at Sea (SOLAS; IMO)
- ◆ Common Structural Rules for Bulk Carriers (CSR; IACS)
- ◆ Guidelines for Surveys, Assessment and Repair of Hull Structure – Bulk Carriers (IACS)
- ◆ Performance Standard for Protective Coatings for Ballast Water Tanks (PSPC; IMO)