European Dredging Association Workshop; November 2008

Greenhouse Gas Emissions; Developments at IMO

International Chamber of Shipping

David Tongue


Halons
CO_2, SOx, NOx, PM
Incinerator
Ship Recycling
CFC
Oils
Anodes
Noise
Cleaning Agents
Sewage
Bilge Water
Garbage
Sludge
Detergents
Ballast Water
Tank Washing
Cargo Residue
Anti-fouling paints

CO_2 Reduction & International Shipping

- Energy Efficiency Design Index
- Ship Efficiency Management Plan
  - Energy Efficiency Operational Index
- Market-based Instruments
  - Compensation/Mitigation Fund
  - Emission Trading

Outcome of MEPC 58 (October 2008)

- **Energy Efficiency Design Index (EEDI)**
- **Ship Efficiency Management Plan (SEMP) and Energy Efficiency Operational Index (EEOD).**

Energy Efficiency Design Index (EEDI)

- Will lead to new projects for reducing GHG emissions
- Japanese government target around 30%reduction of new ship design CO^2 index in 5 years
- Current IHI project for 749GT coastal Product Tanker

  -Electric propulsion

  -Contra-rotating propeller

  -30% reduction propelling power

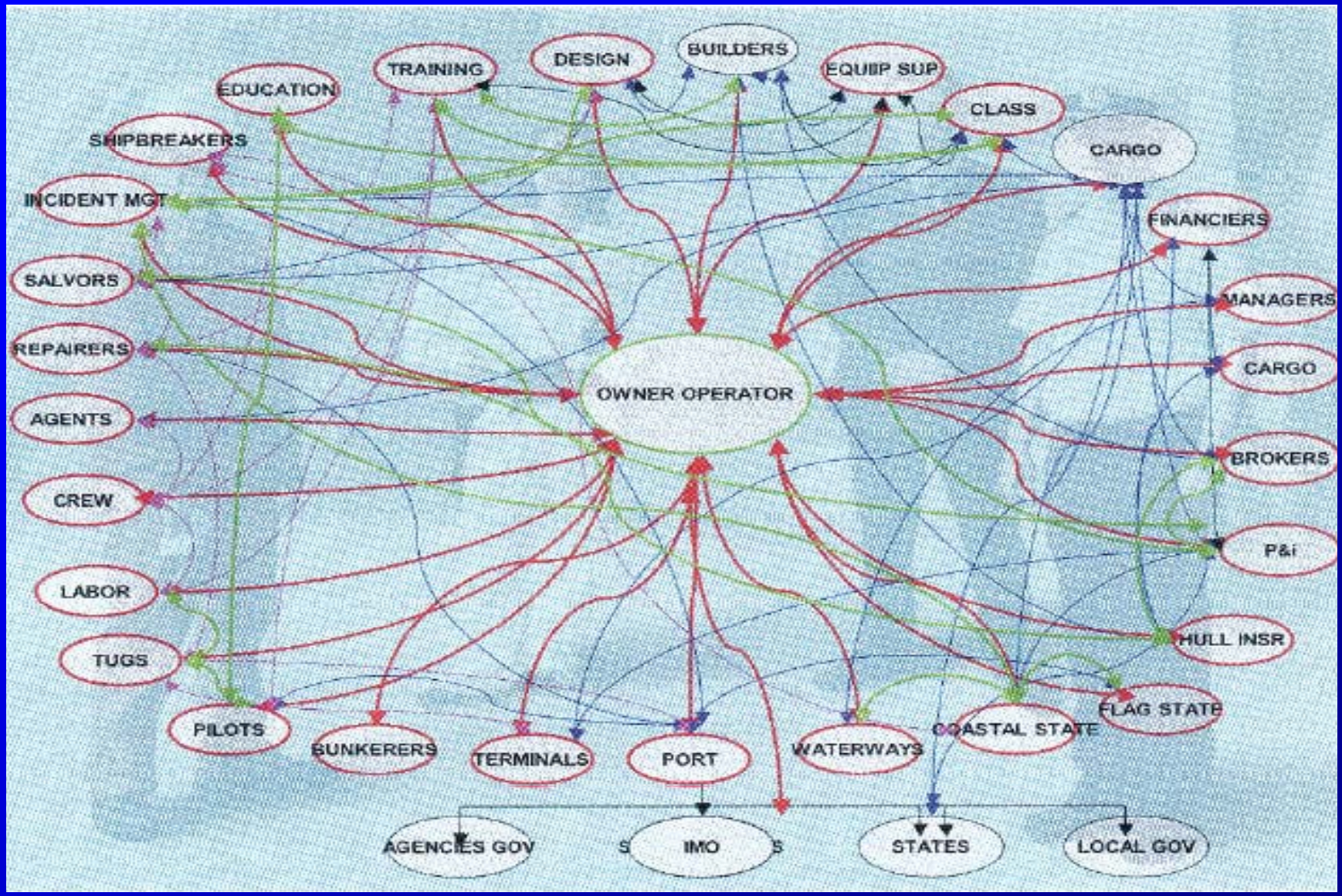
  -19% reduction CO^2

  -50% reduction NOx

Ship Efficiency Management Plan (SEMP) and Energy Efficiency Operational Index (EEOD).

- Management tool for all ships
- Introduces best practices and other operational matters
- Presently under industry development
- Improved voyage planning/Weather routing/Just in time/Speed optimisation/Optimised shaft power
- Optimum trim/Optimum ballast/Propeller imersion/Rudder and heading controls/Hull maintenance
- Propulsion system maintenance/Waste heat recovery
- Improved fleet management
- Improved cargo handling (Port)
- Other measures

Guidance on Best Practices for Fuel-Efficient Operation of Ships –Stakeholders involved



Vessel name: Tankship A **Cargo:** 46,000 m. tons fuel oil

Ballast Voyage: No ballast voyage, vessel already on position

Laden Voyage : **Load Port:** Quebec, Canada **Discharge Port:** Rotterdam, Holland

Description	Actual	Ideal	Difference
Commence Voyage	08 April 17:38	08 April 17:38	
End of Sea Passage	16 April 07:00 7 D 13 H	18 Apr 22:27 10 D 5 H	
All Fast	23 April 18:25 7 D 11 H	23 Apr 18:25 4 D 19 H	
Sea Passage speed	14.8 knots	11.0 knots	
Bunker Consumption	36.0 tons / day	14.7 tons / day	**21.3 tons / day**
Bunker Consumed	272.0 tons	150.0 tons	**122 tons**
Bunker Cost	USD 149,627	USD 82,473	**USD 67,154**

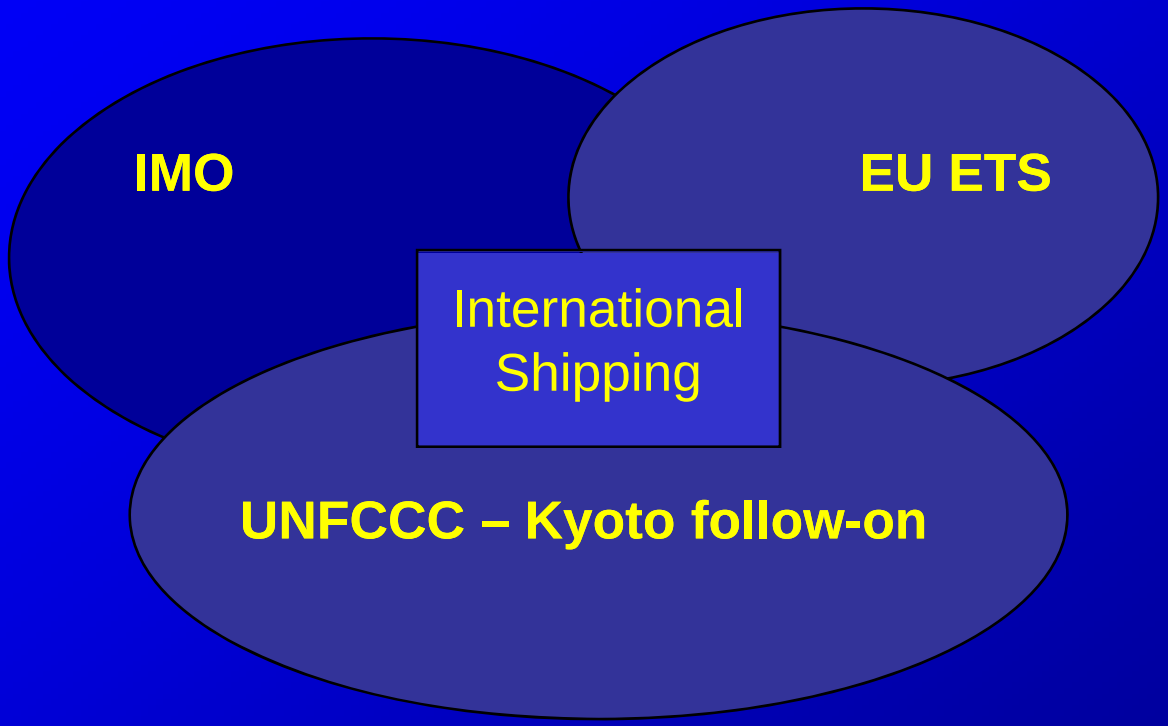
Combined Saving: 122.0 tons of bunker ; USD 67,154 ; 45% of total bunker cost

This is calculated at the lowest economic speed of 11 kts. It should be noted that even at that speed the vessel would still anchor for almost 5 days awaiting berthing.

Optimum Propeller Considerations

Hull Maintenance

The Future?



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