> ASF members are estimated to control about 50% of the world’s merchant fleet
ASF OBJECTIVES

> Promote interests of Asian shipping industry

> Project an unified voice of Asian Shipowners to International Community
<table>
<thead>
<tr>
<th>Committee Name</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seafarers Committee</td>
<td>(SC)</td>
</tr>
<tr>
<td>Ship Economics Review Committee</td>
<td>(SERC)</td>
</tr>
<tr>
<td>Ship Insurance and Liability Committee</td>
<td>(SILC)</td>
</tr>
<tr>
<td>Safe Navigation and Environment Committee</td>
<td>(SNEC)</td>
</tr>
<tr>
<td>Ship Recycling Committee</td>
<td>(SRC)</td>
</tr>
</tbody>
</table>
Innovations for ships

Solar power

- The 6,200-unit PCTC MV Auriga Leader, delivered in December 2008, is equipped with 328 solar panels (250 m²) that generate 40 kW. The solar power system is connected to the ship’s propulsion system.
- The system supplies up to 6.5% of the electricity used on board, and CO₂ emissions are expected to be reduced by 40 tons per year.
"Yamatai"

MHI Nagasaki Shipyard
March, 2010

- Air Lubrication System installed.
- Expected to result in 10% less CO2 emissions from the vessel.

Module carrier operated by NYK-HINODE LINE
NYK SUPER ECO SHIP 2030

- A New Concept Ship for the Future
  - 8,000 TEU Container Ship (LOA: 353 meters, Speed: 25 knots)
- CO₂ emission cuts of 69%

Reduction of Energy for Propulsion

- Weight savings: 9%
- Hull friction: 10%
- Hull form optimization: 2%
- Wind resistance: 1%
- Propulsion efficiency: 5%
- Superconductivity: 2%
- Reduced power for ship use: 2%

Switch of Energy sources

- Fuel cells: 32%

Use of Natural Energy

- Solar power: 2%
- Wind power: 4%

Slow Steaming

- A 10% speed reduction cuts 20% in fuel consumption and CO₂ emissions.
- Engines can be operated continuously at low loads when cutting out one turbocharger, which provides significant fuel-consumption benefits.

**e.g. 8UEC60LS II : MCR15,540KW**

<table>
<thead>
<tr>
<th>Loads</th>
<th>25%Load (Min)</th>
<th>50%Load</th>
<th>85%Load (Max)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed</td>
<td>13.5 knots</td>
<td>15.8 knots</td>
<td>20.0 knots</td>
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<tr>
<td>Fuel consumption per day</td>
<td>17 tons</td>
<td>34 tons</td>
<td>57 tons</td>
</tr>
<tr>
<td>Normal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T/C cut</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Optimum Operation of Ships

- Slow Steaming
- Derating Engines
- Selecting Appropriate Turbo Chargers
- Selecting Environmentally Safer and Energy Efficient Hull Paints.....

- Optimising Operation
  SEEMP (Ship Energy Efficiency Management Plan) to be adopted at MEPC62?
“eFuture 13000C” developed by IHIMU
Why Green Ships?

> World Seaborne Trade will grow led by Emerging Economies

+3%/y from 2010 → x3.3 in 2050

> Ever-Increasing Bunker Fuel Prices

Jan 2011 USD541/t → Apr 2011 USD678/t
Owners and Operators

Green Ships

> Costs : Ship Owners

> Benefits : Ship Operators
SaveOurSeafarers (SOS) CAMPAIGN

http://www.saveourseafarers.com

2,000 Somali pirates are hijacking the world's economy
THANK YOU!

Yuichi Sonoda
ASF