To promote, develop and support in the spirit of cooperation, the common interests of its members in all matters concerning the development and quality of maritime education and training.

NewsLetter

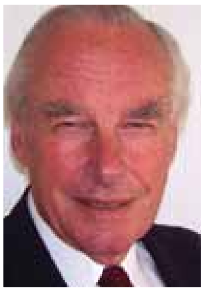
DECEMBER – 2012

ISSUE NO. | 17 |

Train, Train, ReTrain, ReTain!

GlobalMET
MARITIME EDUCATION & TRAINING

Inside this Issue



Editorial

GlobalMET at Work in 2012

Looking back over the almost concluded year of 2012, it is encouraging to review GlobalMET's activities, all of which included representations on behalf of our members and discussions on MET in general:

- **March:** Delivery of presentation at Pacific Forum workshop in Ho Chi Minh City; visit to HCMC University of Technology
- **April:** Participation in the 5th Manning & Training in India Conference in Mumbai; BoD 19/12 meeting and participation in MARSIM Conference at Singapore Maritime Academy
- **May:** Chairman's participation in IMO STW 43, London
- **June:** Delivery of presentation in opening session of Pacific Forum workshop in Kuala Lumpur; visit to Malaysian Maritime Academy, guest at Class 2012 Graduation at Maritime Academy of Asia and the Pacific, Mariveles and visit to NYK-TDG, Calamba City, Philippines
- **August:** Participation in Pacific Forum workshop in Jakarta
- **September:** Visit to Philippine Transmarine Carriers, NYK-FIL, Norwegian Training Centre and AJ Centre of Excellence and meeting at the Asian Development Bank, Manila, participation in Challenges and New Opportunities in Logistics Education Conference at Chung-Ang University, Seoul; participation in 5th Forum on Straits of Malacca and Singapore, Singapore: Chairman's presentation to Annual Conference of International Union of Marine Insurance, San Diego CA, USA and meeting about model courses with IMO Secretariat, London
- **November:** participation in the 2nd Maritime Logistics International Forum, organised by GlobalMET in collaboration with the Chartered Institute of Logistics and Transport in Australia, in Darwin; meeting at the Asian Development Bank, AGM 10/12, BoD 20/12 meetings, participation in 13th Asia Pacific Manning & Training Conference and in 2012 GlobalMET in Manila Forum, Manila; meeting with the Maritime and Port Authority of Singapore
- **December:** submission to IMO Secretariat of new Leadership and Teamwork model course, for validation, prior to inclusion on STW 44 agenda.

GlobalMET's growing involvement on behalf of its members is encouraging, so much so that, as stated in the draft minutes BoD 10/12 and advised in Gen Memo 39/12 to members:

> A comprehensive discussion addressed the need to shape development through strategic planning, improve revenue and financial resources overall and how this might be achieved; eg a broader focus than the current one on MET providers, improved marketing, increased membership, income generating projects, financial benefits to members such as discounts on publications and conference registration fees.

During the lead up to BoD 21/13 in Singapore next April, considerable thought will be given to shaping the development of GlobalMET and of course input on how this should be done would be welcome. Please let us have your thoughts.

It is a pleasure to take the opportunity of writing this editorial for the last newsletter for the year to extend to all the compliments of the season and best wishes for 2013. May it be a good year for us all.

Rod Short
Executive Secretary

GlobalMET Adviser Prof Barrie Lewarn, addressing the MLIF in Darwin

Participants in the Manila Forum – taken after those from Japan and New Zealand had left to catch flights.

Kiribati Marine Training Centre

The following has kindly been provided by GlobalMET member Kiribati Maritime Training Centre.

For over 40 years, Kiribati has sent to work on merchant ships overseas, thousands of seafarers who remit back home a significant $11million dollars every year in terms of economic revenue.

Kiribati is an atoll nation in the central Pacific - located halfway between Hawaii and Australia. Once dubbed the land of the greatest ocean navigators of all time, the story of Kiribati is now re-told with much glory associated with this 45 year old institution. Nestled in a quiet lagoon corner on the islet of Betio, the MTC's story began in 1967 when School has been established and soon after six German shipping companies formed what is known today as the South Pacific Marine Services on Tarawa.

The school began with a few trainees and 20 staff. Fast forward 45 years to November 2012 and MTC has reached its peak receiving the Germanischer Lloyd (GL) accreditations of compliance with ISO and STCW training standards and other fundamentals as maritime labour sending institutes.

Speaking of fundamentals, the MTC is just on par. With International Standards Organisation 9001 (ISO) and International Convention on Standards of Training, Certification and Watchkeeping, STCW '78, as amended, integrated in its courses, one can say that MTC is ahead of the pack and especially now that the Government of Kiribati has ratified the Maritime Labour Convention 2006. With an international staff force of 55 personnel from eight Countries, MTC has evolved from its humble beginning in the late 1960s to a fine state of the art institute. Its bridge and engine TRANSAS simulators, fire school, all type of life boats, harbour and million dollar classroom facilities, medical facilities add to its fortune- thanks to development assistance from AusAID, NZAID and JICA.

MTC has trained more than 5,000 graduates, most of whom have secured employment on foreign ships. During one of the toughest economic crisis of all time, Kiribati's remittance level declined significantly to a low $8million in 2009 gripping this remittance-dependent nation to one of its most challenging moments in history. Kiribati seafarers struggled to keep their jobs overseas whilst machineries and peers from Asia and around the world glided to the top of the labour market. This experience has led MTC to change its focus from producing too many ratings to producing more officer levels, with help of Australian Maritime College and with financial support of our traditional partners.

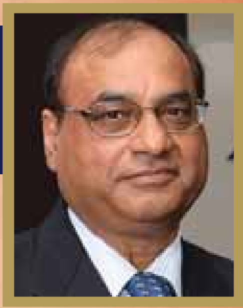
At the 40th anniversary of SPMS in Kiribati in July 2010, the attendance of ship owners Frank Leonhardt and Captain Klaus Koerbelin from HSDG and their families, two pioneers of MTC, marks further cementing of the friendship and relationship between the Kiribati Government and the German shipping companies. MTC has an honor to host many important guests, to mention just few who have visited us during last twelve months: UN Secretary General, US Secretary of Navy, Australian Governor General and Commonwealth Secretary General. On 09th December, commemorative plague will be unveiled by the New Zealand Minister of Foreign Affairs, the Hon Murray McCully, in commemoration of over 30 years of NZ assistance to the MTC.

Amid struggles to come to terms with climate change, Kiribati increasingly leans towards labour mobility to help its people adapt to the effects of climate change. The passing of the Germanischer Lloyd inspection is symbolic of MTC's commitment, en route to a stronger presence in the international maritime industry. By the end of this year, about 900 seafarers will be employed on German ships.

"Steering standards in the right direction"

MARPOL Annex VI

A Study of New Initiatives for Optimization of Balancing the Energy System Onboard



By

Jai Acharya
MSc (Maritime studies); B.E. (Hons) EEE; FIE; CEng
Technical Director
STET Maritime Pte Ltd
Singapore

Abstract

The prime intention of this write-up, besides giving an overall scenario of the current state of MARPOL Annex VI implementation onboard merchant ships and offshore marine facilities, focuses on the new initiatives by the stakeholders for prevention of maritime environment pollution using smart tools for optimizing the energy usage by system modeling and balancing the energy system optimally, which in turn complements part of the EEDI and SEEMP of the vessel.

The Energy System Modelling study at the vessel design stage is formulated and the same applied during the operating stage on actual working parameters in order to achieve the optimum energy balancing onboard.

Introduction

The energy consumption onboard a ship is large compared to many other energy consumers. A modern Ro/Ro ship, depending on the size, could for example use in the order of 25 – 75000 MW propulsion power per year and consume 500 – 2000 MW at quay during loading and unloading operations. This energy consumption corresponds with 5 – 15000 tons of bunker fuel oil consumption per year. Interestingly, the consumption of a single vessel could therefore supersede that of 500 to 1500 houses. Thus, even a small improvement to a vessel's energy management system could significantly reduce the fuel oil consumption, which in turn, contributes greatly towards the reduction of maritime environment pollution protection.

Onboard Energy System

The machinery system onboard is a combination of various components and the connectivity of these may vary on each vessel, thus energy efficiency calculations vary due to specific state of operation.

The energy system onboard a ship is a complex and interconnected system. However, some simplification could be made to describe such as; energy use, the energy transformation; the energy flow between engines; technical components and energy consumers onboard. The module focused analysis makes it possible to optimize the energy system onboard regarding overall, low energy consumption. The application makes it possible to identify energy losses or energy flows and to reduce or re-use. The energy module also makes it possible to calculate the energy need according to different technical and operational conditions. The energy flow in the ship's machinery space and the electricity flow in an auxiliary electrical power generation system can be optimized depending on supply and demand by using modular analysis approach.

The most important simplifications of the real energy system flows that have been made in the available models are:

- All energy flow onboard to be calculated in a common unit i.e. Kilowatt (Kw), thus the user will know quantum of available energy for use in different applications.
- The energy flow is one way only.
- Only one form of energy can be defined as entering into each component application in the model.
- The efficiency and characteristics of many application components will vary with load factor and conditions. The user shall manually alter these variations when system changes are made.

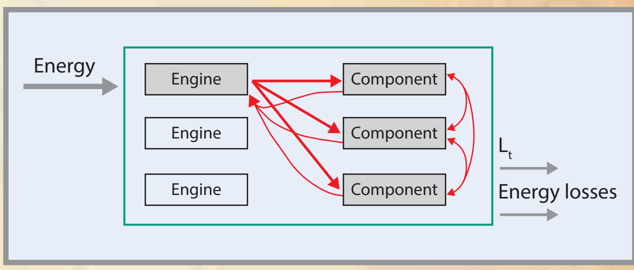


Figure 1 - A schematic Model showing Engine System for Shaft Energy Production can be modeled with different levels of aggregation

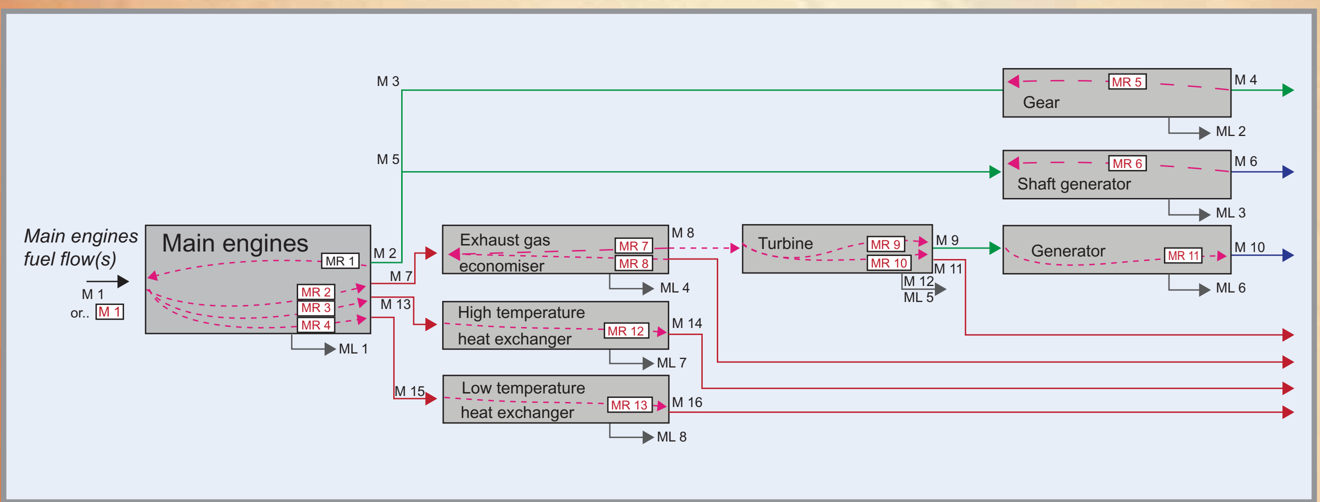


Figure 2 - A typical example on how engines and components can be connected to each other through input and output of energy between components

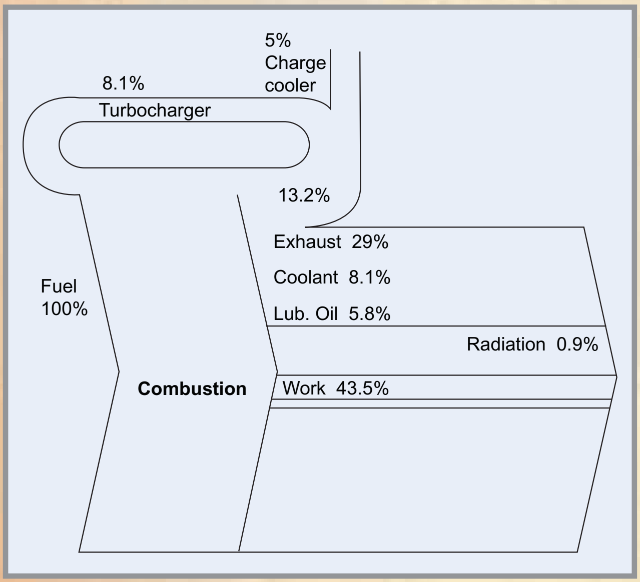


Figure 3 - Typical Shankey Diagram for a Sulzer ZA40S Diesel Engine (Turbocharged

Balancing the Energy Systems Onboard

All the specified energy consumers at a state of operation will be summarized for each type of energy. Electricity consumed in all specified energy will be summed as consumed electricity at the specific state of operation. Similarly, the shaft energy or main engine heat energy is summarized component wise. The summation of the shaft energy consumption is compared to the input energy for the determination of various losses or sub-utilization, thus the energy system balancing is made optimum at each stage of consumption, module by module, in order to minimize the emission, mechanical/electrical and heat losses.

With the all the modern available mathematical modeling and energy management skills, the control and further monitoring of energy consumption would lead the stakeholders towards the effective implementation of MARPOL Annex VI.

Modeling of Different System Onboard

The range of possibilities to specify the energy system onboard is very wide. A ship's energy system could be very complex specified or just very simple as main engine run by fuel oil, producing mechanical energy for the propulsion, a diesel generator driven by gas oil generating electricity and the energy consumption for different operational stages at sea, on full load/idling condition. In the application, the modeling of the engine system and the energy relations is greatly simplified, but it is still proving to be adequate for evaluation purposes. The engine system consists of a predefined system with generally valid relations and specific "States of Operations" corresponding to the type and trade of vessel. For each "State of Operation" specific appropriate data, speed and energy consuming components are taken into account. The engine system is defined by the efficiency of auxiliary engines, boilers and the amount of energy that leaves the engines in the form of exhaust gases, and in the high and low temperature heat exchangers. This information is stated as a percentage of total energy, like fuel consumption and other ancillary energy input to various auxiliary drives for the engines. The engine **Shankey Diagrams** [Fig. 3] could be the true source of information in this perspective. Similarly, the efficiency and output of media components like shaft gear, shaft generator, exhaust gas economizer/turbine/generator and heat exchangers specified.

A same exercise of determination performed for auxiliary engines and boiler burners. All available energy output is labeled. All relevant energy-consuming components are specified as their required input media (i.e. shaft (mechanical), electrical or heat energy). The application then states all the total available energy flows and corresponding required amount for the comparison to achieve optimum energy consumption and minimum losses, which is the objective of future ships with smart EEDI and SEEMP.

Conclusion

The above discussed system modelling and its application onboard could be a proven useful tool for air pollution prevention and emission control along with life-cycle analysis purposes.

The calculated environmental impact can also be analysed with respect to different operations and life cycle phases etc. To make comparisons easier between ship concepts etc; the calculated environmental impact can be evaluated with different categorisations and valuation models in an analysis module. There will be more and more innovative technological evolution in future to address the effective implementation of MARPOL Annex VI in order to minimize the emissions from the ships and create a more environmentally friendly maritime industry.

World's largest container ship CMA CGM Marco Polo in Suez Canal

Misuse of ECDIS

A self-unloading bulk carrier sailed in the morning after loading a cargo of aggregates. The pilot disembarked soon after unberthing, and the vessel proceeded at Full Ahead (about 12 knots) with the Master, 3/O and a helmsman manning the bridge. Visibility was good with a moderate breeze. Besides the two radars, the bridge team was using an ECDIS, on which, a safety contour of 10 metres (inappropriate, considering a sailing draught of 10.63 metres), a cross-track deviation limit of 0.2 mile and an anti-grounding warning zone that covered a narrow arc ahead to a range of about ten minutes' steaming had been set.

About an hour after departure, the vessel entered a narrow strait, where the Master instructed the helmsman to engage the autopilot on a heading of 290º and handed over the con to the 3/O. He then proceeded to the communications desk on the after port side of the bridge, increased the volume of a portable music system and busied himself with sending routine departure messages. A few minutes later, the vessel was approaching a planned waypoint requiring an alteration of 24º to starboard to 314º. At this time, the 3/O visually sighted an inbound sailing vessel about 3 NM on the starboard bow. After coming on to the new course on the autopilot, he decided to pass the sailing vessel to port and adjusted the course to 321º. Simultaneously, he observed another small vessel about a mile away, right ahead and coming head on, and altered more to starboard to 324º.

The ECDIS anti-grounding warning zone alarm then activated on the display, but no audible alarm sounded, a deficiency not known at the time. As a result, the 3/O, who was monitoring the situation from the forward console, did not realise that the vessel was heading towards shoal ground. He also sounded two long blasts on the ship's whistle to alert the nearest vessel, which soon passed clear to port. Thereafter, the 3/O focussed his attention on the sailing vessel ahead, which was now about a mile away. Two minutes later, the vessel ran onto a charted shoal at full speed. The severe vibrations lasted several seconds. The Master ran to the ECDIS display and, recognising that his vessel had run aground, instructed the helmsman to switch to manual steering and ordered the wheel to hard-a-port.

The sailing vessel also altered course to port and the vessels narrowly avoided colliding. After he steadied the vessel on a heading to return her to the planned track, the Master discovered that there was water ingress in No 3(P) ballast deep tank. Further checks revealed no other damage, and a preliminary report was sent to the office. Proceeding at reduced speed, tank soundings confirmed that the ship's pumps were able to cope with water ingress. Nevertheless, the Master ordered the breached compartment to be opened at sea and for a party consisting of the C/O, C/E and a seaman to internally inspect the damage. After they identified a 3-metre longitudinal fracture in the hull bottom plating, the inspection team safely vacated the tank and re-secured its access. With company's and class approval, the vessel continued on its short passage towards the discharge port, where, after unloading, she entered drydock to effect permanent repairs.

Findings of Investigation

1. The vessel was fitted with two ECDIS units that were used as the primary means of navigation, thus removing the need for paper charts to be carried. All bridge officers, including the Master, had completed a generic ECDIS training course in their home country, but no training or familiarisation on the type of ECDIS fitted on board had been provided by the ship's management company;
2. Before reaching the waypoint, the 3/O wrongly assumed that risk of collision existed with the sailing vessel on the next planned heading and prematurely initiated a turn to starboard and then continued to alter course to starboard, illogically intending to pass between the sailing vessel and the steep-to shore;
3. After initiating the course alteration, the 3/O did not monitor the vessel's position and projected track on the ECDIS display, for over 15 minutes, and failed to notice that the visual grounding warning alarm had been activated;
4. Both the present and past crews were unaware that the ECDIS antigrounding audible alarm had been disconnected in the past for unknown reasons;
5. The vessel's ECDIS display was located some distance abaft the bridge front and orientated so that the OOW had to face to starboard to look at the screen. Had the ECDIS display been located on the forward console, the OOW would have been more likely to routinely consult it when monitoring the navigational situation and also been alerted by the visual grounding warning alarm;
6. A safety contour setting of 10 metres was inappropriate for the voyage as the sailing draft of 10.63 metres meant that the vessel would have grounded at a charted depth of 10.13 metres, before crossing the safety contour;
7. Despite having attended approved ECDIS training courses, the bridge watchkeepers lacked an understanding of the ECDIS equipment's safety features;
8. The 3/O remained confident in functioning as the sole navigator in restricted waters, but soon after the multiple small alterations of course, he became sufficiently concerned about the intentions of the nearest vessel ahead

View of bridge showing the offset location and athwartship orientation of ECDIS display.

to sound two long blasts on the ship's whistle. The Master failed to react to this inappropriate signal and did not leave the communications console at the rear of the bridge to assess the situation or challenge the 3/O's actions;

9 Following the grounding, the bridge team failed to follow the company's emergency checklist or maintain a proper record of follow-up actions taken, as a result of which, some important responses were missed;

10 No risk assessment or consideration of potential consequences was undertaken prior to opening up and ordering entry into the breached ballast tank with the ship at sea and proceeding at near full speed.

Lessons Learnt

1 ECDIS provides the bridge team with an efficient and effective means of navigation. However, its ability to continuously provide the vessel's current position and projected track, and to warn of approaching dangers, can lead to over-reliance and complacency.

2 It is imperative that navigators be given equipment-specific training and onboard instructions and guidance to monitor the vessel's position and projected track at regular intervals and to fully understand the equipment's safety features in order to make best use of them;

3 The area where the accident occurred required careful navigation in view of the vessel's size, speed, restricted sea room and the likelihood of her encountering other traffic;

4 The Master placed undue trust in the 3/O's abilities, offering him no support despite the navigational demands of the passage;

Track of vessel (in red showing planned track, unchecked deviation to starboard, site of grounding, subsequent track recovery and near-miss with incoming sailing vessel (in blue).

5 The Master should have delayed sending the routine departure messages until the vessel was clear of the narrow passage;

6 Loud music can impair the keeping of a proper lookout as required by Rule 5 of the Colregs. Had the ECDIS audible alarm been functioning, it might still not have been heard by the 3/O due to the background noise pollution provided by the loud music;

7 As it was established that the ballast pump was capable of stemming the inflow of water, the opening of a breached compartment and entry by personnel constituted an unacceptable and unnecessary risk.

Corrective/Preventative Actions

1 The ship operator implemented the following corrective actions in the drydock:

   i. Repositioned the main ECDIS unit adjacent to the starboard radar, enabling its viewing while facing forward;

   ii. Reconnected the ECDIS unit to the bridge alarm monitoring unit to provide a functioning audible alarm;

   iii. Arranged for the vessel's bridge officers, and company's Designated Person (DPA) and marine / nautical superintendent to attend an equipment-specific training course on the ECDIS type fitted on board;

2 Arranged for the fleet's bridge officers to attend a bridge resource management course;

3 Arranged for the marine / nautical superintendent to provide on board ECDIS training to the fleet's other vessels fitted with ECDIS or electronic charts.

MAIB's Recommendations

The ship operator was advised to issue written instructions and guidance to the fleet and carry out regular verification visits to its vessels to ensure that ship's staff:

1 Have a clear understanding of how ECDIS should be used;

2 Understand the vessel's emergency procedures,

3 Understand the need to properly evaluate routine operations after an accident to ensure that any new risks are identified and mitigated as appropriate.

Source: **Mars,The Nautical Institute**

REUTERS/Jonathan Alcorn
2 December

The Carbon War Room Convenes

By gCaptain Staff

Global fuel prices are rising inexorably, while extraterritorial bodies are putting forth new and stricter environmental legislation year after year. These forces are driving significant growth in the demand for technologies that can deliver real cost savings and simultaneously move the shipping industry towards full regulatory compliance with emissions standards. As the shipping industry cannot make the necessary progress towards a fuel-efficient, low-emissions global fleet with new builds alone, retrofit efficiency technologies are now more important than ever.

Over 90% of the world's trade cargo spends time on the ocean during its journey to market, carried by any one of approximately 50,000 commercial vessels. If global shipping were a country, its emissions would be roughly equal to the annual emissions of the nation of Germany – the sixth largest producer of greenhouse gases today. Only the US, China, Russia, India and Japan emit more carbon dioxide than the world's commercial shipping fleet, and ships also emit substantial amounts of other greenhouse gases and pollutants, including nitrogen oxide, sulfur oxide and black carbon. Global shipping was responsible for 3.3% percent of annual global anthropogenic carbon emissions in 200770 (over one billion tons) and estimates suggest that figure could triple by 2050 if no action is taken.

However, in July 2011, the shipping industry did take one big step towards reducing its emissions by adopting a regulation which mandates energy efficiency standards for all new-build ships. As well as sending a signal to the world that the sector is serious about decarbonisation, the regulations reinforced the role that credible information and metrics will need play during the sector's transition towards a low-carbon economy. Applying similar standards and ratings to all ships would allow the world to move even further towards efficient, profitable shipping.

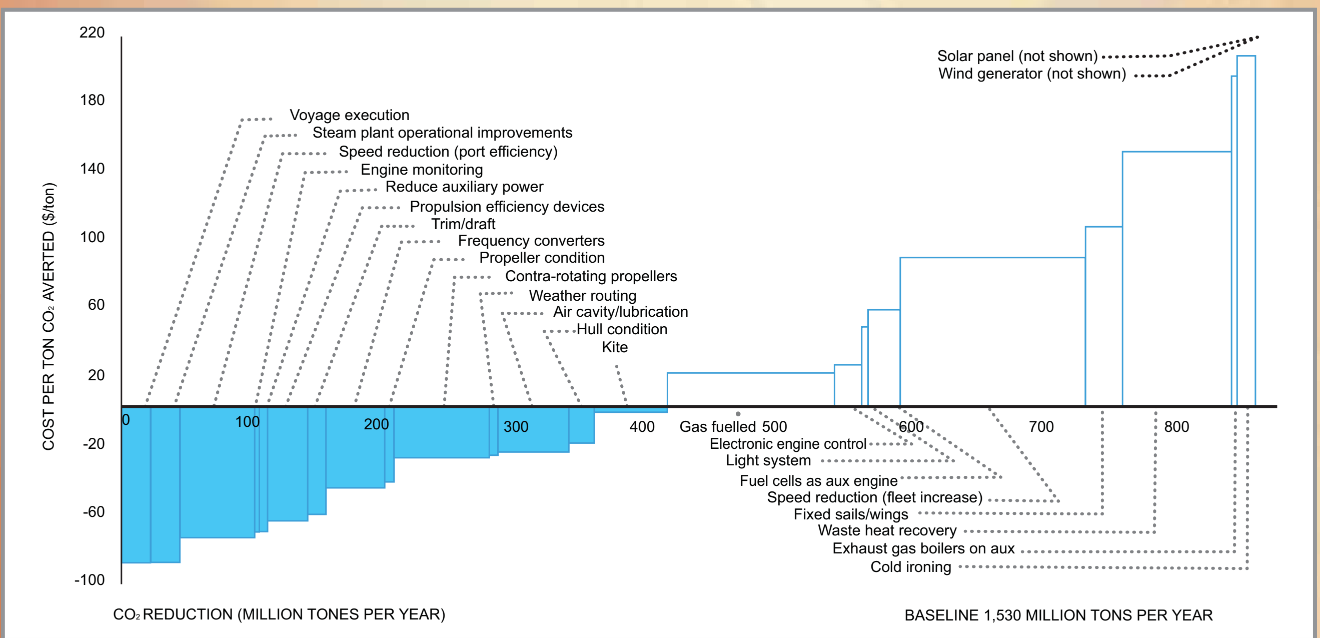
Although the shipping industry, relative to other freight modes, is already very energy efficient, the widespread adoption of additional market-scale clean technologies which improve hull, engine and propeller design will produce further reductions in fuel consumption. More radical technologies have also been proven effective but are not yet to market scale as they lack trust in the industry, including alternative fuel types and a variety of ultra-low-carbon concept vessels, such as sail-powered ships.

Barriers and Key Challenges

Shipping companies have a very strong economic incentive to reduce their fuel consumption and thus reduce their CO_2 emissions: bunker fuel costs represent an increasingly significant proportion of ships' operational expenses, having increased by about 300% in the last 5 years alone. Recent studies confirm that the shipping sector has $70 billion of overpaid fuel bills – in other words, unrealized profit – which could be rapidly freed up by investments in clean technologies proven to offer substantial fuel savings and rapid payback. In spite of this potential, commercial shipping's opportunity for low-carbon growth persists in being unexploited and undeveloped into commercial advantage.

The slow uptake of clean technology can be attributed to a number of market barriers pervasive throughout the global commercial shipping sector:

- Little incentive for owners of chartered fleets to invest in upgrades as they likely will not directly benefit from the savings derived from reduced fuel consumption (the 'principal-agent' or 'split-incentive' problem)
- Lack of awareness of the benefits of efficiency measures
- Lack of upfront capital to invest in fuel-reduction technologies, even with short, proven payback periods
- Concerns about the validity of performance data
- Difficulty getting stakeholders to adopt new models and behaviors
- Unwillingness to share information and partner with competitors
- Limited additional asset values assigned to ships with higher fuel efficiency
- Shipyard capacity for low-carbon technology and preference to stick to standard designs.



Average Marginal CO_2 reduction cost of Various Shipping technologies for the World's Shipping Fleet in 2030

Announcement from WrightWay

We at WrightWay are delighted to announce that on the 9th of November we gained our Human Element Leadership & Management (HELM) accreditation (Management Level) from the British Maritime & Coastguard Agency (MCA) This is granted in accordance with the requirements of the International Maritime Organisation (IMO) Standards of Training, Certification & Watchkeeping (STCW) 2010 - Manila Amendments. WrightWay has also been accredited as a training provider by the MCA.

After 16 years of delivering this training, formerly known as Crew Resource Management, we are proud to be the first British company to achieve this milestone at Management Level and we look forward to continuing to serve our customers as we have done since 1996.

John Wright
Managing Director
WrightWay Training Limited
info@wrightway.co.uk
www.wrightway.co.uk

Watchkeeper: Investment in an Age of Uncertainty

After a hundred years of maritime development that has generally seen ships become larger and faster, since the Selandia launched the marine diesel into the oceanic trades a century ago, there are new challenges governing ship design. Giving the keynote address at IMarEST's Ship Propulsion Systems Conference in London last week, BIMCO's Aron Frank Sorensen emphasised the extraordinary number of uncertainties that faced the shipping community today.

It was the regulatory and environmental challenges that face the industry today that makes any investment decision taken these days exceptionally difficult. How can you make an investment in a ship that will be in operation for more than twenty years? Should you be investing in so-called "eco-ships", which may cost some 25% more, but offer a somewhat doubtful business case? Should you be focussing on LNG, which has so far achieved small penetration, and awaits the arrival of an effective infrastructure? Should you decide on scrubbers, or opt for distillate? Will the ECA's spread around the world, and when? And if you choose one of the various options, will all the criteria that governed your choice change before your ship is amortised? What direction will regulation, fuel price and economics take during the anticipated lifetime of your ship?

This was an interesting conference in that it offered few hard and fast solutions but helped to focus minds on the range of imponderables which face owners and operators today. The present regulatory position was set out by the International Maritime Organization's Arsenio Dominguez, who expressed the frequently aired hope that the tightening environmental regulations "will hopefully stimulate innovation". But it was, he suggested, a moving target, with the industry required to adhere to globally binding CO_2 reductions, through the technical and operational methods which were already making an impact and possibly the "highly political" strategy of market-based mechanisms. Compliance, he pointed out, is not an option, with the industry and the regulator alike pressured by social and political demands, not forgetting costs.

The conference was also characterised by some thoughtful technical papers, showing that there is no shortage of innovation driven by the threat of unsustainable fuel costs, as owners seek to offer viable marine transport in the spreading Emission Control Areas (ECAs). Engine builders and designers suggest that much can still be done to provide efficiency gains, even though the demand is no longer for speed and power, but environmental sustainability. But will the compromise that is always present in every ship design err too strongly on the side of lower power, encouraged by the way that this appears to provide a lower Energy Efficiency Design Index (EEDI)?

In a largely engineering forum, it was interesting to hear from a very experienced ship master about how he saw the situation. Captain Nicholas Cooper, who had commanded both container ships and large bulk carriers, expressed his concern that whatever was done in the name of efficiency and environmental sustainability, it should not result in underpowered ships, which he said, would be exceedingly difficult to control in bad weather or when manoeuvring in the close confines of a difficult anchorage. It was a useful intervention, after listening to engine builders talking about the way that their products could be throttled back to provide "super-slow" steaming in the event that freight rates remain low, and fuel prices high.

It was also worth recalling Mr. Sorensen's keynote address, when he suggested that the main focus really ought to be on "better, safer and greener" ships. How these criteria can be defined will remain a source of argument, we suspect!

Articles written by the Watchkeeper and other outside contributors do not necessarily reflect the views or policy of BIMCO. www.bimco.org

Incat Tasmania Launches Ro-Ro Ship Powered by LNG

Australian shipbuilder Incat Tasmania Pty Ltd launched the world's first high speed passenger Ro-Ro ship powered by LNG (Liquified Natural Gas) on Saturday 17th November to allow the vessel to be completed outside the main shipyard shed.

The vessel has been moored alongside at the Incat shipyard wharf on Prince of Wales Bay to enable the final stage of construction and commissioning of machinery in the lead up to the sea trial period anticipated to be January 2013.

The 99 metre LNG ship was contracted by South American company Buquebus in November 2010, for operation on their River Plate service between Buenos Aires, Argentina and Montevideo in Uruguay.

At the time the contract was announced **Incat Chairman Robert Clifford** said *"Incat is excited about this project as it represents a significant step in the global move for natural gas powered ships to replace those operated with less environmentally friendly fuels."*

The ship, hull 069, will be delivered to a repeat customer, Buquebus, who have clearly demonstrated their preference for Incat technology over a twenty year period. Hull 069 will be the eighth that Incat has built for Buquebus and their associated companies. It will be the largest catamaran they have operated and the fastest, environmentally cleanest, most efficient, high speed ferry in the world.

Hull 069, with capacity for almost 1000 passengers plus around 140 cars, has a projected lightship speed of 53 knots, and an operating speed of 50 knots. Crossing the River Plate (Rio de la Plata) at high speed will allow the ferry service to compete with airline traffic between Uruguay and Argentina.

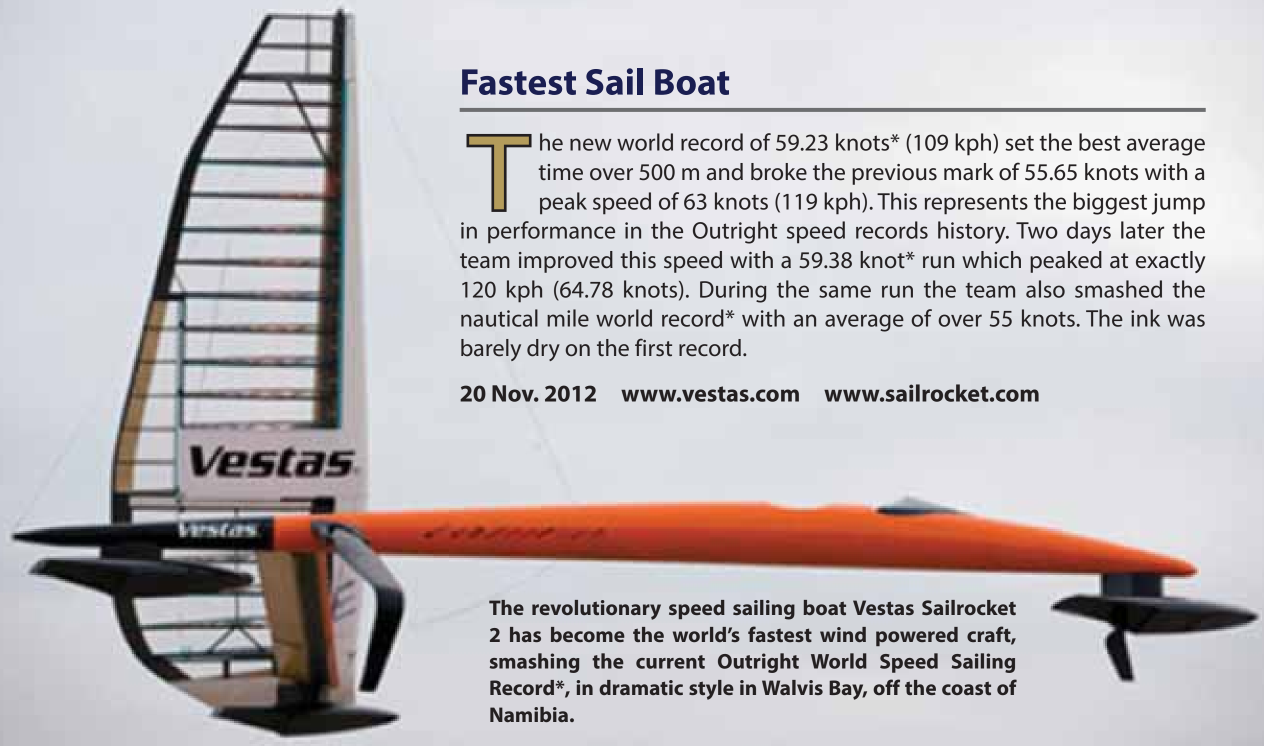
The vessel will be the first installation of LNG powered dual fuel engines in an Incat high speed ferry, and the first high speed craft built under the HSC code to be powered by Gas Turbines using LNG as the primary fuel and marine distillate for standby and ancillary use.

www.incat.com.au

Fastest Sail Boat

The new world record of 59.23 knots* (109 kph) set the best average time over 500 m and broke the previous mark of 55.65 knots with a peak speed of 63 knots (119 kph). This represents the biggest jump in performance in the Outright speed records history. Two days later the team improved this speed with a 59.38 knot* run which peaked at exactly 120 kph (64.78 knots). During the same run the team also smashed the nautical mile world record* with an average of over 55 knots. The ink was barely dry on the first record.

20 Nov. 2012 www.vestas.com www.sailrocket.com



The revolutionary speed sailing boat Vestas Sailrocket 2 has become the world's fastest wind powered craft, smashing the current Outright World Speed Sailing Record*, in dramatic style in Walvis Bay, off the coast of Namibia.

A ship in port is safe, but that's not what ships are built for.

The World's Fleet is Going to Change

The ratification of IMO's Ballast Water Management Convention is not yet certain, and the global sulphur limit in 2020 is subject to a review in 2018. What is certain is the new emission control areas and the energy efficiency design requirements that will soon enter into force. Certain or uncertain - all have a profound effect on the shipping industry's uptake of new technologies. DNV's look into the coming eight years, gives a clear answer: the world's fleet composition is going to change as we head for 2020.

DNV's Shipping 2020 scenario study explores technology uptake based on market forces, regulatory changes, fuel prices, technology costs and specific shipowner requirements.

Tor Svensen, President of DNV Maritime and Oil & Gas

DNV published Shipping 2020 this year to communicate the results of a comprehensive scenario studying exercise covering the world fleet up to 2020. Based on expected market developments, regulatory changes, fuel prices, cost and availability of new technology and specific shipowner requirements, the model explores the technologies with the best payoff that will also ensure compliance with the relevant environmental requirements.

Economic power is shifting to Asia, impacting trade routes and the demand for vessels. Gas and oil prices are expected to decouple, and shale gas is a game changer likely to increase gas availability. Amidst these and other market forces, four different scenarios for the future are evaluated.

"With the world economy in a fragile condition, it is not only financial analysts, bankers and policy makers who want to know what the world will look like towards the end of this decade. The shipping community is, quite rightly, asking the same questions," says Tor Svensen, president of DNV Maritime and Oil and Gas. "Predicting the future is a risky business. However, our objective is to share our views on technology uptake towards 2020, and beyond, and to stimulate both discussion and correct decision-making."

The use of scrubbers may be minimal until the global SOx limit is implemented. The ECAs is not expected to drive a significant number of scrubbers. However shipowners may make room for a scrubber in ships built between now and 2019, but they are likely to defer the installation itself until the technology has matured further and the global sulphur limit is confirmed.

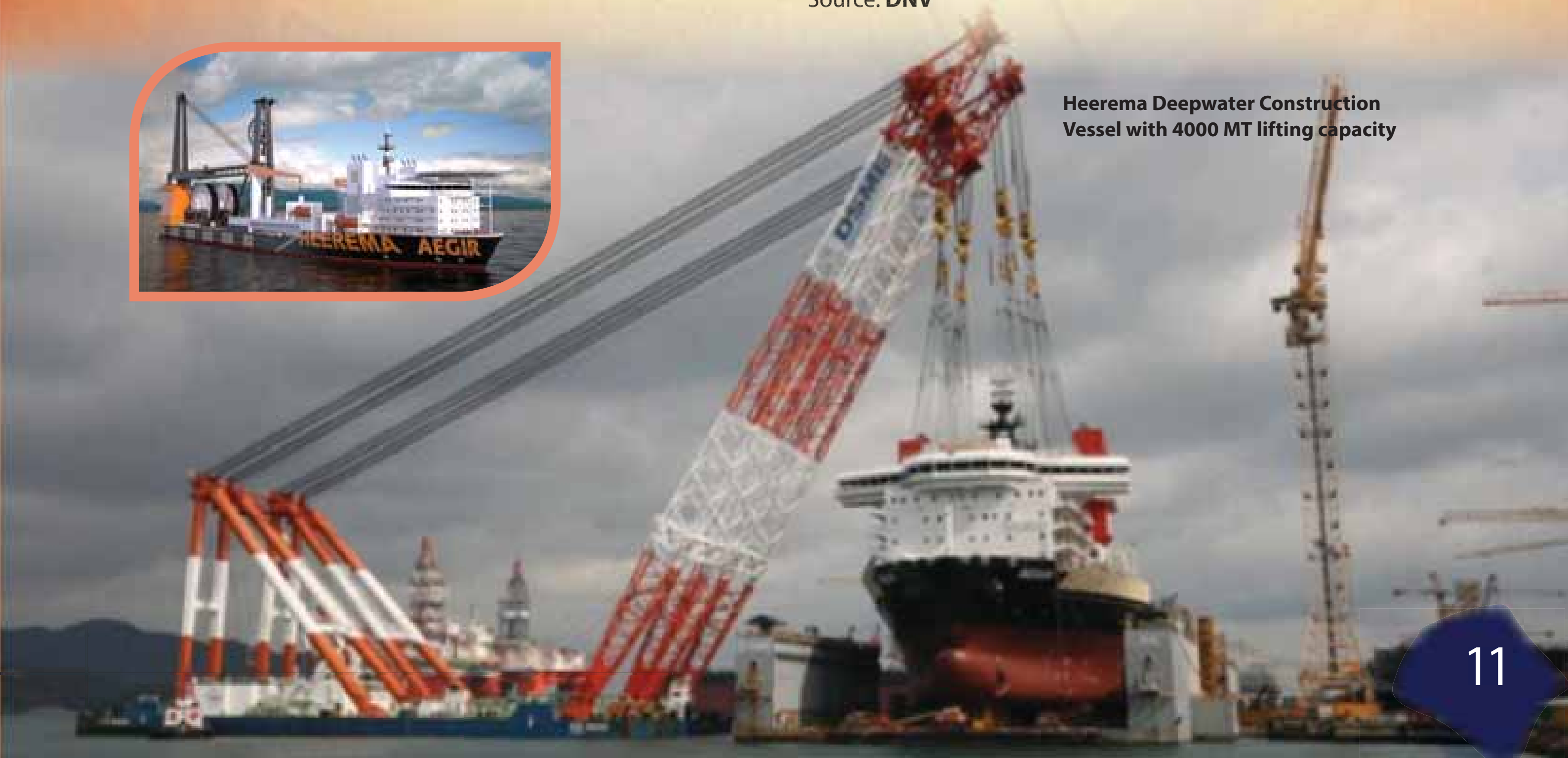
Delays in the ratification of the Ballast Water Management Convention are simply expected to create a larger backlog of technology orders with little variation in the phasing in time of the technology. The main peak for technology uptake comes in 2017 and will be driven to a large extent by US regulations. After 2019, retrofitting is expected to be largely completed, unless the IMO decides to relax the schedule.

The EEDI (Energy Efficient Design Index) regulation requires newbuildings in 2025 to be 30% more energy efficient than today's average ship. This will drive implementation of energy efficiency measures and LNG as fuel. The question remains whether shipowners will press ahead of the EEDI schedule and start building these ships today. Other key findings within DNV's Shipping 2020 report are:

- More than 1 in 10 newbuildings in the next eight years will be delivered with gas fuelled engines.
- In 2020, the demand for marine distillates could be as high as 200-250 million tonnes annually. Newbuildings in 2020 will emit up to 35 per cent less CO_2 than today's ships.

At least 30 per cent of newbuildings will be fitted with exhaust gas recovery or selective catalytic reduction systems by 2016.

Source: **DNV**



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