

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

MARCH - 2012

ISSUE NO. | 10 |

TRAIN, TRAIN, RETRAIN, RETAIN!



Inside this Issue

Editorial	2
Training for Evacuation of a Large Cruise Ship – is it Possible?	2
Usability Comes First	3
Superyacht use of Wind, Solar and Wave Power	4
Nautical Institute issues industry-Backed ECDIS Training Guidance	5
ECDIS	6
Feature: Filipinos' White-List Wobbles	8
Philippines Pushes for Maritime Education Improvements	9
IMO Secretary-General Pledges Support for Philippines Maritime Development	10
Maritime Environment Protection	11
A Mariner's Guide to Waves	14
Associate Dean, BCIT Marine Campus School of Transportation	16
Op-Ed: "Captain Schettino, How Could You Let that Happen to Your Ship?"	17
ICS Board Meets in London	18
Situational Awareness	20
Ecoship Concept Design	21
VLCC to Floating Ore Transshipment Terminal	22
Mitsubishi Develops System to 'Right the Ship'	23
Nickel Ore Deemed Deadliest Bulk Cargo on Ship Sinking Risks	24
Long Way to Go for Culture of Safety	24
UK Confirms £12m Annual Seafarer Training Budget	25
Watchkeeper: A Warning in Lights in the Sky	26





Editorial

Training for Evacuation of a Large Cruise Ship – is it Possible?

The new generation of mega-ships can carry more than 6,000 passengers and 1,800 crew – the equivalent of a small town – and this alone has created equally massive challenges.

How can multinational crew members – many of them from developing nations and not sharing the language of the passengers or even fellow seafarers onboard – be expected to maintain command and control in such circumstances?

Research shows that between 60% to 80% of accidents at sea involve “human factors”. While the major cruiseship companies have a clear commitment to the employment and training of quality officers, the huge new ships raise questions about the quantity of operational crew not only to meet routine requirements but also to be able to meet the demands associated with intensive operations and emergency situations. And while the core crew in both deck and engine, including the officers, are trained to a high level, the bulk of the passenger and catering department receive minimal training, and their safety training is a fraction of that received by aircraft cabin crew.

The Guardian Newspaper 15 January 2012

The cruise ship master’s dilemma - the risk of injury, particularly to dancers, acrobats and gymnasts, due to the motion from pressing on in heavy weather is threatening this evening’s gala reception and shows to follow, but if we slow or alter course we won’t make the ETA and she’s got to be turned around in only six hours tomorrow!

A dilemma such as this was mentioned in a Christmas greeting to the ExecSec from an old friend and former

student, now in command of large, well found passenger ships. His email was sent while slowed to 20 knots in storm force conditions.

Large cruise ships, with huge lobbies, shopping arcades and theatres, long alleyways, hundreds of cabins and thousands of people on board, are still fundamentally ships, water borne vehicles which may sink, strand, capsize, catch fire, break down, collide. They may be operating as hotels and casinos afloat, but the fundamental consideration is that safety must not be compromised so that the seagoing risks to those on board become unacceptable. Safety will be best assured by ensuring they are ‘well found’ and operated in accordance with long recognised ‘ordinary practices of seamen’.

How many cruise ship hotel staff understand ‘ordinary practices of seamen’? How is control going to be established and maintained in an emergency on such ships?

How to provide effective training for a large multi-cultural crew, some with little more than basic hotel skills and limited English? Also, is it possible to effectively brief several thousand international passengers to respond appropriately in a major emergency, especially on a large cruise ship on a tight schedule?

Is it even possible to provide the training essential to ensuring the safe abandonment of a large cruise ship - in calm conditions, let alone in heavy weather away from the coast?

Of course many factors come into this, including the design and equipping of the ship, but the Costa Concordia tragedy highlights the need to identify how to train multi-cultural crews to deal effectively with serious crises on large passenger ships – if it is possible!

Usability Comes First

By **Neville Smith**

Pity the poor ship owner; not only must he cope with freight rates below operating costs while struggling to service debt repayments, but at the same time he must conform with a series of highly challenging regulatory mandates.

Perhaps the sympathy should be tempered – after all, no-one forced owners to order too many ships. This was simply a function of the fact that many seem not to know what to do with money other than call their broker and see what's on offer.

On the second point, the sympathy is more genuine, though not because of the legislation per se. In case of the EEDI and SEEMP, the Ballast Water Management Convention and the ECDIS mandate, there is little doubt that the cause is just and the effects are positive.

The problem is that the process by which the maritime industry is regulated is not quite the same as the way that the rules are put into practice. As is all too apparent, stakeholders make different interpretations, use different applications and require different things, often of the same clients.

This is not helped by the fact that some owners, viewing regulation as a box to tick, will seek to comply in the shortest time at the lowest cost and with the least amount of effort.

Some of these issues were highlighted by Lloyd's List's Craig Eason, who used his Ship Technology blog to highlight the problems of Type Approval versus day to day operations on board. Equipment is becoming ever more complex and difficult to maintain, he says, but at the same time it is produced in ever greater volume, supposedly under the same rules as the first, type approved unit.

Eason argues that "there is a good argument to have each bit of kit tested for compliance before it is handed over to the ship owner because if the equipment fails it is the ship owner's ship that gets detained until it is repaired, the ship owner who may get a hefty fine".

He calls this "shunning responsibility" but I don't think it's that. Rather, a system that lets people work a certain way means they will do exactly that; it cannot be a surprise if corners are cut, guidance misunderstood, advice ignored.

Another example of the same problem was in the news last week, though there was something like positive progress in addressing the problem. As noted in the recent review here of the ECDIS Revolution conference, there have been times – too many to count in fact – when I have wondered if anyone was listening as industry groups and ECDIS users raised the problems of training, legislation, certification, usability and back-up to much head-nodding and hand-wringing but little more.



Well someone was listening and now eight industry associations - BIMCO, GlobalMET, IFSMA, the International Group of P&I Clubs, IMPA, ICS, Intermanager, INTERTANKO, ISF, MAIIF and OCIMF and The Nautical Institute have come together to highlight the vital role of training and competence to the digital navigation transition.

In its launch material, the Nautical Institute, which co-ordinated the guidance, noted that all supporting organisations "want the industry to understand that ECDIS must be taught in the context of navigation, rather than just ECDIS operation". Ship owners and operators, it went on, should require those who have taken generic training to be capable of "demonstrating in full, the competencies required by the IMO".

Of course, it is not the IMO that requires that competence be demonstrated, but a disparate mix of flag and port states, insurers, vetting agencies and accident inspectors. The IMO's rules require that seafarers undertake generic and type-specific training but interpretations on what that means in practice vary from flag to flag and port to port.

The new guidance is designed to address the discrepancies and make certain that seafarer training meets the minimum standards required.

NI president James Robinson said that ship owners should not assume that an ECDIS course certificate is enough to ensure safety and that "shipmasters should work with their bridge teams to ensure that ECDIS best practice and company procedures for familiarisation and use of the ECDIS are continually maintained".

That should be well understood by now and the fact that there is still confusion about what training is needed and who can deliver and certify it, might be taken as teething troubles, were we not five months from the first ECDIS deadline.

In fact, the guidance is a call for action on the themes noted above, making five recommendations that are a to-do list of issues to fix before the mandate really gets into full swing around 2018.

These recommendations include that trainers "ensure their courses deliver at least the competences

identified by the IMO". Equipment manufacturers, it says, should take the guidance into account and are "urged to recognise their role in the familiarisation process". Flag and port states don't escape either, with the former encouraged to consider the guidance when developing their requirements and the latter urged to make sure their inspection staff are appropriately trained.

The NI has made no secret of the fact that it considers some of the available generic ECDIS training to be sub-standard and that equipment manufacturers should do more to converge display standards. Pilots too, should be able to demonstrate competency and trainers, inspectors and auditors should be capable of assessing competence here and elsewhere, it says.

Not mentioned by name is class society type approval but as the ECDIS Revolution also heard, there is criticism that the process is more about box-ticking than risk management, given the complexity of the equipment and its operation.

Certainly there is no getting away from ECDIS training, new requirements on generic training came into force as part of the STCW 2010 Manila amendments in January 2012 and the requirements of SOLAS will apply through the rolling mandate deadlines.

And yet the guidance mirrors what some stakeholders have been saying since before the IMO amended SOLAS – that moving to digital navigation requires a clear understanding of the wider implications, not just by mariners but by a large stakeholder group that sometimes appears to have conflicting priorities.

Removing those conflicts and improving the understanding of not just the regulation and training requirements but the equipment itself is vital to the successful adoption of ECDIS but there are common themes for all shipboard equipment – usability comes first.

So back to the beginning. Perhaps when rates pick up and better times return, ship owners will use a greater share of revenues to fund more R&D projects, to test-bed equipment and to work with their suppliers and users on these issues. After all, the result will benefit them in the long run.

Editor's Note: Neville Smith is a freelance journalist.

Feature articles written by outside contributors do not necessarily reflect the views or policy of BIMCO.

Date: 22.02.12

Bimco.org

Superyacht use of Wind, Solar and Wave Power

The Ocean Empire LSV (life support vessel) is a 44m Solar Hybrid Superyacht with 2 Hydroponic farms, fishing facilities to harvest the sea and the potentially the first super-yacht to use **Skysails** technology. Her solar powered propulsion systems and all the Hotel amenities of a luxury global voyager are supplied by harnessing 3 major sources of sustainable energy.

The first and foremost source of energy is from the Sun which powers Solar Cells (covering the entire surface

of the vessel) while at the same time illuminating 2 Hydroponic farms.

The second source is energy from the Wind which powers an auxiliary automated SkySail that drives the Ocean Empire to 18+knots while charging her GM ESS2 batteries through power sailing KER.

The third source is energy from Waves captured through Motion Damping Regeneration (MDR). A new form of ATMD (Adjustable Tuned Mass Damper) developed in collaboration with Maurer SohnesGmbH.

<http://sautercarbonoffsetdesign.com>



Nautical Institute issues industry-Backed ECDIS Training Guidance

17/02/2012



The Nautical Institute has issued "Industry Recommendations for ECDIS Training," a guidance that helps interpret IMO requirements for ECDIS

(Electronic Chart Display and Information System) training. Last month, ECDIS training became required under amendments to the STCW convention and from July this year mandatory ECDIS carriage requirements start to be phase in.

Discrepancies have arisen between flag states' regulations and training aimed at meeting the IMO standards. This has led to a concern that training might risk not meeting the minimum standards – something of great concern to the shipping industry. The guidance published today aims to address confusion about ECDIS training. It has been issued by an industry group made up of leading international shipping industry organizations and organized and coordinated by the Nautical Institute.

Group members are: BIMCO, GlobalMET, International Federation of Ship Masters' Associations, International Group of P&I Clubs, International Maritime Pilots' Association, International Chamber of Shipping, Intermanager, Intertanko, International Shipping Federation, Marine Accident Investigators' International Forum, the Nautical Institute and OCIMF.

The organizations supporting the guidance want it understood that ECDIS must be taught in the context of navigation, rather than just ECDIS operation. Shipowners and operators will require those who have taken generic training to be capable of demonstrating, in full, the competencies required by the IMO.

The organizations that have endorsed the guidance are demanding a thorough generic training course (unlikely to be less than the IMO recommended 40 hours) and effective familiarization with onboard equipment for all watchkeepers prior to taking charge of a navigational watch. The industry has emphasized the need for watch-standers to demonstrate all IMO identified competencies and to maintain these competencies – including familiarization with any updates or alterations.

The Nautical Institute President James Robinson says: "ECDIS is a complex system and will be one of the most essential tools for supporting mariners in their efforts to ensure the safety of navigation and protection of the marine environment. Shipowners must not assume that an ECDIS course certificate is enough to ensure safety and ship masters should work with their bridge teams to ensure that ECDIS best practice and company procedures for familiarization and use of the ECDIS are continually maintained."

The guidance also makes recommendations to ensure that watchkeepers remain competent and that other industry stakeholders such as trainers, inspectors and auditors are capable of assessing such competence.

Source: **Nautical Institute**
17 February 2012

MV Carat Powers Through Baltic Sea Ice – Photo of the Day – gCaptain 23 Feb



Image taken by Second Mate Joseph Hood on board the MV Carat. MV Carat is a Crowley-managed containership owned by ReedereiGebr. Winter. Image via Crowley's Facebook page.

Puget Sound Sunrise, image by Dustin Lemke – gCaptain 11 Jan



ECDIS



Industry Recommendations for ECDIS Training

Being aware that the implementation of Electronic Chart Display and Information Systems (ECDIS) has given rise to confusion in regard to ECDIS training, an industry group, organised and coordinated by The Nautical Institute and comprising leading international shipping industry organisations, held a series of meetings in order to produce this guidance on issues of training and competency for ECDIS.

The 2010 amendments to the STCW Convention for ECDIS training will not take full effect until 2017. Therefore in accordance with best practice it is recommended that approved ECDIS training be undertaken as soon as practical to ensure that all bridge watchkeeping officers meet all the competencies required by STCW prior to sailing on a ship fitted with ECDIS.

It is recognised by all signatories to this guidance that ECDIS, as defined by the International Maritime Organization (IMO), when implemented will be one of the most important navigation and decision support tools. The complexity of ECDIS should be recognised and the ability of a watchkeeping officer to be competent and confident in operating ECDIS as part of the shipboard navigational system is essential for safety, security and protection of the marine environment.

The regulatory requirements for Generic Training and Familiarisation in ECDIS are covered by various international instruments including the IMO STCW Convention, the ISM Code, SOLAS and also by national laws. The industry also recognises that compliance with these regulations including the required competencies are increasingly being examined by external parties including Port State Control, insurance inspectors, charterers and accident investigators. The industry organisations recognise the following definitions for ECDIS Training:

Training definitions

Generic ECDIS Training: *ECDIS training to ensure that navigators can use and understand ECDIS in the context of navigation and can demonstrate all competencies contained in and implied by STCW 2010. Such training should ensure that the navigator learns to use ECDIS and can apply it in all aspects of navigation, including the knowledge, understanding and proficiency to transfer that skill to the particular ECDIS system(s) actually encountered on board, prior to taking over navigational duties. This level of training should deliver the competencies at least equivalent to those given in IMO Model Course 1.27*

Familiarisation: *Following the successful demonstration of competencies contained in the Generic ECDIS Training, familiarisation is the process required to become familiar with any onboard ECDIS (including backup) in order to assure and demonstrate competency onboard any specific ship's ECDIS installation, prior to taking charge of a navigational watch.*

The industry further endorses the following issues pertaining to ECDIS training

- ◆ All watchkeeping officers must be competent in the use of the onboard ECDIS prior to taking charge of a navigational watch. An implicit element of continual competence is the ability to demonstrate that competence.
- ◆ Familiarisation pertains to any ECDIS onboard including any backup systems. This includes any pertinent information required for the safe operation of the ECDIS including all updates and alterations.
- ◆ Focus should be upon achieving and demonstrating the necessary competencies, rather than time spent on training or achieving certification alone.

- ◆ There are a wide range of training methods and tools available that can be used, alone or in combination, that may contribute to a navigator's competency.
- ◆ Familiarisation should be structured, specific to the onboard equipment and its arrangements and should be complementary to generic ECDIS training.
- ◆ In order to meet the competencies identified in the IMO Model course (1.27) "The Operational Use of Electronic Chart and Information Display Systems (ECDIS)" the minimum training time is unlikely to be less than the IMO recommended 40 hours, and assessment of competency should be conducted by a suitably trained instructor/assessor.
- ◆ The competencies contained in Model course 1.27 should, for trainee OOWs, be incorporated into the STCW Officer of the Watch II-1 Navigation at the operational level training.
- ◆ The requirement for familiarisation is recognised under the provisions of section 6.3 & 6.5 of the ISM Code which requires not only effective training, but familiarisation of equipment and regulations with respect to safety and emergency related duties.
- ◆ Pilots should be able to demonstrate the competencies contained in Model Course 1.27, however pilots should not be expected to meet familiarisation requirements.
- ◆ It is recognised that manufacturer provided tools for structured onboard familiarisation will enhance and possibly add value to onboard ECDIS.

Recommendations

1. Ship operators are recommended to recognise the critical importance of ECDIS for navigational safety and ensure that crew competency is achieved and maintained.
2. ECDIS trainers should take the contents of this document into account and ensure that their courses deliver at least the competencies for navigators which have been identified by the IMO.
3. Equipment manufacturers should take the contents of this document into account, are urged to recognise their role in the familiarisation process and to work with ship operators to meet their needs.

4. Flag States are encouraged to note this document and to consider its content when developing requirements and guidance for ECDIS.
5. Port States and other inspection/auditing authorities are encouraged to provide appropriate ECDIS training to their staff.

From Australian Maritime Safety Authority Marine Notice 7/2012

7. ECDIS training requirements

The Manila Amendments to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978 (STCW) and STCW Code will enter into force from 1st January 2012. This will make ECDIS training mandatory from 1 July 2013 for all officers serving on board ECDIS fitted ships. All officers in charge of a navigational watch, both at the management and operational level, will be required to undertake ECDIS training, as described below:

7.1 Generic ECDIS training: All masters and officers in charge of a navigational watch should, as a minimum, complete generic ECDIS training that follows IMO Model Course 1.27 and conforms to the relevant STCW requirements.

7.2 Type specific ECDIS training: In accordance with IMO Circ. SN.1/Circ 276 (Transitioning from paper chart to Electronic Chart Display and Information Systems (ECDIS) navigation) shipowners and operators should ensure that their ship masters and navigating officers are provided with a comprehensive familiarisation programme and type-specific training. 'Trickle-down' training (i.e. one officer training another) is not acceptable without a structured and formalised process being in place to facilitate such training. If the generic training includes training on the type of ECDIS equipment installed on board, then the training documentation must indicate this clearly.

7.3 On board familiarisation: In accordance with the ISM Code, the company should establish procedures to ensure that personnel are given proper familiarisation with their duties and equipment. ECDIS familiarisation training in the safe and effective use of shipboard ECDIS equipment should be clearly documented.



Feature: Filipinos' White-List Wobbles



By **Andrew Guest**

Fears that The Philippines may lose its coveted status on a list of countries with approved maritime education systems may seem far-fetched but are still causing jitters in the Asian country.

For months the country that is the biggest supplier of seagoing labour has been under the shadow of an investigation by the European Maritime Safety Agency (EMSA) that could result in some and perhaps all Filipino certificates of competency no longer being recognised by the European Union (EU).

The Philippines authorities have responded to the threat by, among other things, declaring a number of college courses no longer compliant with its own rules. If, however, they thought this would be enough to satisfy the Brussels auditors, they had not reckoned with the reaction of one college which, seeking to protect its reputation and revenues, last week won an interim court injunction against the non-compliance order.

Not only did the judge decide the relevant authority, the Commission on Higher Education (CHED), had exceeded its own powers but dismissed the claim that granting an injunction might jeopardise The Philippines inclusion on the EU's list of third countries approved by EMSA as meeting the requirements of the Standards of Training, Certification and Watchkeeping (STCW).

Last year a regular audit by EMSA noted a number of deficiencies including ones at the college that has taken the legal action. The Philippines subsequently reported to the European agency on what actions it had taken and was taking to correct the faults. This report and a follow-up audit early this year had been expected to relieve The Philippines from the threat of derecognition that, in its government's worst fears, could deprive it of hundreds of millions of dollars in foreign earnings.

As has been noted previously, the EU collectively is one of the biggest employers of "sea-based" Filipinos, a category that covers both seafarers and seaborne hotel staff like the 300 who worked on the ill-fated *Costa Concordia*. Over USD 1 billion was remitted from European countries including Norway in 2010, with the UK and Denmark among the biggest sources of dollars sent to The Philippines.

The dependence on Filipinos, as well as other non-EU nationalities, had been gradually increasing but appears to have accelerated following the financial crisis in 2008 when remittances by sea-based workers to The Philippines were half of what they are now at USD 650 million, according to figures from the country's central bank.

The desperate need to control and cut costs was, of course, not limited to the EU; Japan is probably the biggest single employer as a country, although this, due to a quirk of international payment routeing, is not evident from the remittance figures (USD 311 million in 2010).

The picture in the EU is, however, clouded by the fact some Filipinos will be employed on EU-flag ships, others by EU-based companies but on ships flagged outside the EU. Relaxation of laws governing the nationality of officers on EU-flag ships by a number of countries has led to an internationalisation of crews from Masters down. European seafarers' unions have, unsurprisingly, been highly critical of the trend, warning that safety was being threatened and European skills lost.

On UK-flag ships the number of Filipino officers, for example, has increased dramatically in recent years, trebling between 2005 and 2010 to almost 2,000. This development appears to be reflected in the rise in remittances from the UK by Filipino sea-based workers: they reached USD 263 million in 2010, compared with USD 115 million in 2008.

Total remittances from Filipino sea-based workers for the first 11 months of last year reached USD 3.9 billion, an increase of 14% on the same period in 2010. The total for that year stood at USD 3.8 billion, so the 2011 figure will be well in excess of USD 4 billion, more than double the total of only five years ago.

Official statistics put the number of sea-based workers at 347,000, representing around 25% of the global seagoing workforce. If these figures are to be believed, then the average amount remitted last year was USD 11,500 or less than USD 1,000 a month. The workforce encompasses an admittedly few masters earning perhaps USD 10,000 a month or more, lowly deckhands and kitchen staff and cabin cleaners on cruise ships on a few hundred dollars, excluding tips. Even the latter figure would, however, be regarded as high pay in a country where *per capita* gross domestic product in 2010 was only USD 2,000.

The annual inflow of USD 4 billion, representing 21% of the total sent home each year by Filipinos working abroad, is seen in The Philippines as not just a vital transfusion for the economy but a representation of the country's ability to provide the world with skilled workers at competitive rates of pay. When, as before, the legitimacy of those skills is seriously questioned, the country undergoes one of its periodic anxiety attacks in which it fears the worst and belatedly seeks to correct its perceived weaknesses.

The legal action is likely to continue for some time as CHED has said it will seek to get the injunction reversed, causing further anxiety as the country awaits the visit of the EMSA inspectors and the subsequent decision by the EU on the validity of its STCW documents. Separately, the case of two Filipino officers detained and charged in New Zealand following the grounding of the containership *Rena* has only heightened the concern The Philippines is, rightly or wrongly, perceived as failing in its ability to train seafarers properly.

The continuing uncertainty will leave employers of Filipino holders of STCW certificates working on EU-flag ships considering their options. Some might point out that The Philippines last year retained its position on the white list of STCW-compliant countries maintained by the International Maritime Organization (IMO) and might consider the EU to be going too far.

The visit to Manila earlier this month by the new IMO Secretary-General and his expression of support for further development of the country's maritime sector may have been welcome, but the white-list wobbles are far from over.

Editor's Note: Andrew Guest is a freelance journalist.

Feature articles written by outside contributors do not necessarily reflect the views or policy of BIMCO.

Date: 15.02.12

Philippines Pushes for Maritime Education Improvements

In order to sustain its current status as the premier provider of quality seafarers worldwide, the Philippine's Commission on Higher Education is pushing for an upgrade in maritime education.

According to Capt. Hernando Eusebio, this push for educational and training improvement is needed to create more competitive Filipino seafarers in the future. Also, if the upgrades push through, the Philippines will continue to hold its current prestige in the global maritime industry.

"Only through upgrading our maritime training curriculum can the Philippines maintain its lead as the world's number one supplier of efficient and highly trained seamen," Eusebio emphasized.

Eusebio also added that the CHED technical panel and its working group is doing everything in its power to come up with updated training syllabus that will further cement the Filipino seamens excellent reputation.

"We are being aided in this task by other government agencies (with maritime functions) and manning industry stakeholders," he added.



Apart from updating the maritime schools' curriculum, Eusebio also noted that training centres must also invest on quality people and equipment to make their graduates more globally competitive.

"This is the only way we can survive and compete internationally. Adequate funding must be set aside to obtain these requisites," Eusebio said.

Source: **Worldmaritimeneews**
11 January 2012

IMO Secretary-General Pledges Support for Philippines Maritime Development



IMO Secretary-General Koji Sekimizu has pledged IMO's support for the Philippines in all facets of the country's maritime development. In wide-ranging talks in Manila with Philippines' President

Benigno S. Aquino III, as well as the country's Secretaries for Foreign Affairs, Transport and Communication, and Labour and Employment, Mr Sekimizu expressed his appreciation for the efforts made by the Government of the Philippines to provide a continuous supply of competent seafarers to the global shipping community.

He also affirmed IMO's commitment to provide the Philippines with assistance in all aspects of its maritime development, including the fields of education, training, and certification of seafarers under the STCW Convention. The Secretary-General spoke of his vision of a wider approach to technical co-operation, which would be based directly on the identification, through detailed country profiles, of the individual maritime needs of each developing country. He further promised IMO's support for the Philippines' efforts to formulate a national maritime transport strategy, which would provide a springboard for the development of maritime clusters in the country, comprising seafaring, ship building and repair, and ship management.

Mr Sekimizu and the Secretary of Transport and Communication, Mr Mar Roxas, agreed to establish an informal channel of communication between IMO and the Philippine Government, specifically to address any matters arising from the implementation of the STCW Convention and the 2010 Manila amendments, with a view to improving the mechanism for addressing certification issues.

Emphasizing IMO's determination to improve counter-piracy measures off the coast of Somalia, the Secretary-General extended an invitation to the Philippines to send a delegation to the forthcoming Capacity-building Conference on Counter-Piracy, to be held at IMO on 15 May, followed by a High Level Segment on the opening day (16 May 2012) of the Maritime Safety Committee (MSC), to discuss the issue of arms on board ships.

Mr Sekimizu also met leaders of the Philippine maritime industry, whom he commended for their contribution,



through the supply of 25 per cent of the world's seafarers, to the economic growth of the Philippines and of Asia as a whole. Noting the significant role of national shipping within the Philippine archipelago, he encouraged the industry to take appropriate action to ensure the safety of domestic navigation. He also urged the industry as a whole to take steps, wherever possible, to raise public awareness of the maritime industry and its importance to the world economy.

At the conclusion of his visit, Mr Sekimizu said he had been encouraged by the steps being taken by the Philippine authorities to ratify a number of IMO instruments. He also felt reassured, throughout his meetings with government officials, by the determination of the Philippine Government to continue to ensure the compliance of its seafarers with the required standards of competence prescribed under the STCW Convention.

IMO Secretary-General Sekimizu visited the Philippines from 7 to 8 February 2012, in his first official mission to a Member State since he took office on 1 January 2012. This can be seen as a clear indication of the priority he places on seafarer-related matters, and as a recognition of the key role which seafarers play in the Philippines and the maritime community.

Source: IMO 10/02/2012



Maritime Environment Protection

Jai Acharya

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

The shipping industry is a relatively small contributor to the total volume of atmospheric emissions compared to road vehicles and public utilities, such as power stations. Atmospheric pollution from ships has reduced in the last decade mainly due to significant improvements in engine efficiency. Improved hull design and the use of ships with larger cargo carrying capacities have also led to a reduction in emissions and an increase in fuel efficiency.

As a result of technological developments and associated industry initiatives, a modern container ship is using only a quarter of the energy per cargo unit than another container ship did in the 1970s, although the former may well dwarf the latter in size and carrying capacity.

A modern large crude oil tanker (VLCC) for example, is able to transport the same amount of cargo twice the distance as of 20 years ago using the same amount of energy. Marine diesel engines, the prime mover of the world merchant fleet, has undergone similar efficiency improvements and modern engines installed today use about 10 to 15% less fuel per kilowatt-hour as compared with engines installed 20 years ago.

M/V Aniara, one of the world's largest car and truck carriers (LCTC), built at Daewoo Shipbuilding & Marine Engineering in the Republic of Korea for Wallenius Wilhelmsen Logistics (WWL), is considered as the most environmentally friendly vessel of its type. Overall emissions of the Aniara are said to have been reduced by more than 20% per transported unit compared with older designs, partly by increasing cargo capacity by using a single-pillar internal design.

It is claimed that carbon-dioxide (CO₂) emissions have been cut by 15% per transported unit, as well as reductions in sulphur oxide (SOx) and particulate matters. Nitrogen-oxide (NOx) emissions are said to be 35% below current international regulations. The main engine can use bunkers with sulphur content as low as 1%.

The revised MARPOL Annex VI measures are expected to have a significant beneficial impact on the atmospheric environment and on human health particularly that of people living in Port cities and coastal area.

Overview of greenhouse gas emissions from ships

In June 2000, the IMO, Study on Greenhouse Gas Emissions from Ships presented a comprehensive assessment of the contribution made by international shipping to climate change.

A Second IMO GHG Study was published in 2009, which is the most comprehensive and authoritative assessment of the level of greenhouse gas (GHG) emitted by ships, as well as of the potential for GHG reduction. It also evaluates the

different policy options for control of GHG emissions from ships currently under consideration within IMO and other organizations.

MEPC 59 noted that the Second IMO GHG Study 2009 came to the following main conclusions, as outlined in its executive summary:



- ◆ International shipping was estimated to have emitted 870 million tonnes, or about 2.7% of the global emissions of CO₂ in 2007.
- ◆ Exhaust gases were the primary source of emissions from ships. CO₂ was the most important GHG emitted by ships. Both in terms of quantity and of global warming potential, other GHG emissions from ships were less important.
- ◆ Mid-range emissions scenarios showed that, by the year 2050, in the absence of regulations, ship emissions could grow by 200% to 300% (compared to the emissions in 2007) as a result of the expected growth in world trade.
- ◆ A significant potential for reduction of GHG emissions through technical and operational measures had been identified. Together, if implemented, these measures could increase efficiency and reduce the emissions rate by 25% to 75% below the current levels. Many of these measures appeared to be cost-effective, although non-financial barriers may discourage their implementation.
- ◆ A number of policies to reduce GHG emissions from ships were possible. The report analysed options relevant to the current IMO debate. The report found that market-based measures were cost-effective policy instruments with a high environmental effectiveness. Such instruments captured the largest amount of emissions under the scope, allowed both technical and operational measures in the shipping sector to be used, and could offset emissions in other sectors.
- ◆ Shipping had been shown, in general, to be an energy-efficient means of transportation as compared to other modes.
- ◆ The emissions of CO₂ from shipping would lead to positive radiative forcing (a metric of climate change) and to long-lasting global warming. In the shorter term, the global mean radiative forcing from shipping was negative and implied cooling; however, regional temperature responses and other manifestations of climate change may nevertheless occur. In the longer term, emissions from shipping would result in a warming response as the long-lasting effect of CO₂ would overwhelm any shorter-term cooling effects.
- ◆ If the climate was to be stabilized at no more than 2°C warming over pre-industrial levels by 2100 and

emissions from shipping continue as projected in the scenarios that were given in the report, then they would constitute between 12% and 18% of the global total CO₂ emissions in 2050 that would be required to achieve stabilization (by 2100) with a 50% probability of success.

Technical and operational reduction measures

MEPC 59 finalized a package of technical and operational measures to reduce GHG emissions from international shipping, aimed at improving the energy efficiency for new ships through improved design and propulsion technologies and for all ships, new and existing, primarily through improved operational practices. It approved to circulate Interim Guidelines on the Method of Calculation of the Energy Efficiency Design Index for New Ships (EEDI), the Interim Guidelines for Voluntary Verification of Energy Efficiency Design Index, the Guidance for the Development of a Ship Energy Efficiency Management Plan (SEEMP), and the Guidelines for Voluntary Use of the Energy Efficiency Operational Indicator (EEOI). In September/October 2010, MEPC 61 considered amendments to MARPOL Annex VI as a potential manner for introducing mandatory technical and operational measures into IMO's regulatory regime. Nine members, all Parties to MARPOL Annex VI, subsequently requested the Secretary General to circulate the proposed amendments to MARPOL Annex VI to make mandatory for new ships, the EEDI and, for new and existing ships, the SEEMP.

In July 2011, MEPC 62 continued its consideration of making the developed technical and operational measures mandatory by adding a new chapter 4 on energy efficiency to MARPOL Annex VI – Regulations on the prevention of air pollution from ships. MEPC 62 was held from 11 to 15 July 2011 at IMO's Headquarters in London.

The amendments to MARPOL Annex VI Regulations for the prevention of air pollution from ships, add a new chapter 4 to Annex VI on Regulations on energy efficiency for ships to make mandatory the EEDI for new ships, and the SEEMP for all ships (resolution MEPC.203(62)). Other amendments add new definitions and requirements for survey and certification, including the format for the new International Energy Efficiency Certificate. The new regulations apply to all merchant ships of 400 gross tonnage and above regardless of the national flag they fly or the nationality of the owner, and are expected to enter into force globally on 1 January 2013. However, an Administration that considers that it on its industry needs more time to comply may waive the requirement for new ships from complying with the EEDI for up to four years.

The adoption by IMO of mandatory reduction measures for all ships from 2013 and onwards will lead to significant emission reductions and also a striking cost saving for the shipping industry. By 2020, up to 200 million tonnes of annual CO₂ reductions are estimated from the introduction of the EEDI for new ships and the SEEMP for all ships in operation, a figure that, by 2030, will increase to 420 million tonnes of CO₂ annually. In other words,

the reductions will in 2020 be between 10 and 17%, and by 2030 between 19 and 26% compared with business as usual. The reduction measures will also result in a significant saving in fuel costs to the shipping industry, although these savings require deeper investments in more efficient ships and more sophisticated technologies than the business as usual scenario. The annual fuel cost saving estimates states a staggering figure of \$20 to 80 billion by 2020, and even more astonishing \$90 – 310 billion by 2030.

The amendments to MARPOL Annex VI making energy efficiency standards mandatory constitute the first international climate change treaty provisions to be formally adopted since the Kyoto Protocol in 1997 and the first ever globally binding instrument introducing energy efficiency regulations for any international industry sector.

The IMO commissioned study entitled "ASSESSMENT OF IMO MANDATED ENERGY EFFICIENCY MEASURES FOR INTERNATIONAL SHIPPING" (November 2011) shows that implementation of the measures will lead to significant reductions of greenhouse gas (GHG) emissions from ships, specifically reductions of carbon dioxide (CO₂), resulting from enhanced fuel efficiency.

The study found that, by 2020, an average of 151.5 million tonnes of annual CO₂ reductions are estimated from the introduction of the measures, a figure that by 2030, will increase to an average of 330 million tonnes annually. CO₂ reduction measures will result in a significant reduction in fuel consumption, leading to a significant saving in fuel costs to the shipping industry.

Market-based mechanisms

The Committee recognized at MEPC 59 that the technical and operational measures would not be sufficient to satisfactorily reduce the amount of GHG emissions from international shipping in view of the growth projections of human population and world trade. The Committee therefore agreed by overwhelming majority that a market-based instrument was needed as part of a comprehensive package of measures for regulation of GHG emissions from international shipping. The Committee further agreed that any regulatory GHG regime applied to international shipping should be developed and enacted by IMO as the sole competent international organization with a global mandate to regulate all aspects of international shipping. As shipping is a global industry and ships are competing in a single global market, it must be regulated at the global level for the regime to be environmentally effective and to maintain a level playing field for all ships, irrespective of flag or ownership.

Also at MEPC 59, the Committee remarked that a market-based measure (MBM) would serve two main purposes: off-setting of growing ship emissions and providing a fiscal incentive for the maritime industry to invest in more fuel efficient ships and technologies and to operate ships in a more energy efficient manner. The Committee further noted that there was a general preference for the greater part of any funds generated by a MBM under the auspices of IMO, to be used for climate change purposes

in developing countries through existing or new funding mechanisms under the United Nations Framework Convention on Climate Change (UNFCCC) or other international organizations.

In line with the work plan, Member States, Associate Members and observer organizations proposed possible MBMs to MEPC and, in turn, MEPC 60 established an Expert Group (EG) to undertake a feasibility study and impact assessment on the proposed measures.

The EG concluded in its report that all MBM proposals addressed GHG emission reductions, although the proposed means of doing so differed with some proposals focusing on in-sector reductions and others also utilising reductions in other sectors. Some proposals went beyond mitigation and suggested mechanisms to address the adverse effects of climate change. Moreover, the EG found that all proposals could be implemented notwithstanding the challenges associated with the introduction of new measures and possible negative impacts such as increases in freight costs. Some countries would be more negatively affected than others by these impacts. Some proposals tried to mitigate such negative impacts.

The inter-sessional meeting made steady progress in considering the development of suitable MBMs. It held an extensive exchange of views on issues related to, inter alia, the desirability of MBMs providing: certainty in emission reductions or carbon price; revenues for mitigation, adaptation and capacity building activities in developing countries; incentives for technological and operational improvements in shipping; and offsetting opportunities. Based on such policy considerations, the Working Group then formulated advice to the MEPC 62, in accordance with its Terms of Reference, related to: the grouping of the MBMs; the strengths and weaknesses of the groups; their relation to relevant international conventions; and the aforementioned possible impacts. The report was submitted to MEPC 62. However, due to time constraints and the busy agenda of MEPC 62, it was agreed to postpone the consideration of MBMs to the next MEPC session (MEPC 63 in February/March 2012).

Ship Recycle

When ships reach the end of their working lives, recycling is undoubtedly the most environmentally friendly way to dispose of them. Many of the components and much of the steel is re-used in the countries where the ships are dismantled, in new ships and in other products. However, there are concerns about environmental and working conditions in ship recycling yards and in view of this, IMO took action to develop a realistic and effective solution to some of these concerns.

The Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships (the Hong

Kong Convention) is aimed at ensuring that ships, when being recycled after reaching the end of their operational lives, do not pose any unnecessary risk to human health and safety or to the environment.

The new Convention addresses all the issues around ship recycling, including the fact that ships sold for scrapping may contain environmentally hazardous substances such as asbestos, heavy metals, hydrocarbons, ozone-depleting substances and others. It addresses concerns raised about the working and environmental conditions at many of the world's ship recycling locations.

Regulations in the new Convention cover: the design, construction, operation and preparation of ships so as to facilitate safe and environmentally sound recycling, without compromising the safety and operational efficiency of ships; the operation of ship recycling facilities in a safe and environmentally sound manner; and the establishment of an appropriate enforcement mechanism for ship recycling, incorporating certification and reporting requirements.

Ships to be sent for recycling are required to carry an inventory of hazardous materials, which are specific to each ship. An appendix to the Convention provides a list of hazardous materials the installation or use of which is prohibited or restricted in shipyards, ship repair yards, and ships of Parties to the Convention. Ships are required to have an initial survey to verify the inventory of hazardous materials, additional surveys during the life of the ship, and a final survey prior to recycling.

Ship recycling yards are required to provide a "Ship Recycling Plan", to specify the manner in which each ship will be recycled, depending on its particulars and its inventory. Parties are required to take effective measures to ensure that ship recycling facilities under their jurisdiction comply with the Convention. A series of guidelines are being developed to assist in the Convention's implementation.

The Convention was open for signature by any State at the Headquarters of the Organization from 1 September 2009 to 31 August 2010 and now is open for accession by any State. It will enter into force 24 months after the date on which 15 States, representing 40 per cent of world merchant shipping by gross tonnage, have either signed it without reservation as to ratification, acceptance or approval or have deposited instruments of ratification, acceptance, approval or accession with the Secretary General.

Furthermore, the combined maximum annual ship recycling volume of those States must, during the preceding 10 years, constitute not less than 3 per cent of their combined merchant shipping tonnage.

A Mariner's Guide to Waves

by GCAPTAIN STAFF on JANUARY 29,
2012 gcaptain.com/

The following article provided by the marine weather blog Ocean Weather Services blog and written by Fred Pickhardt, a professional marine meteorologist and owner of Ocean Weather Services. Ocean Weather Services provides professional marine meteorological research reports to admiralty law firms and insurance underwriters, Ocean weather forecasts and ship routing services.

There are five types of ocean waves:

1. Wind generated
2. Tides
3. Seiches
4. Tsunamis
5. Pressure induced

1. Wind-Generated

Wind-generated waves are the most common waves found on the ocean and are the result from stress on the water surface caused by the wind. The smallest of these are capillary waves which can be quickly brought back to equilibrium solely by the cohesion of the individual water molecules. Most wind-generated waves, however, are referred to as gravity waves since it is gravity that acts to restore them to equilibrium. Wind driven waves are the waves that have the greatest impact on ships.

2. Tides

Tides are the rise and fall of sea level caused by the gravitational attractions of the moon and sun and by the centrifugal force of the spinning earth.

When the solar and lunar gravitational forces are in line they combine to create the highest of the high tides and lowest of the low tides which are referred to as "spring tides." When the forces are perpendicular to each other, the forces are pulling the water in different directions so the difference between high and low tides are minimized and is referred to as a "neap tide".

3. Seiches



Image Credit: Keith C. Heidorn, PhD The Weather Doctor's Weather Almanac Slushing The Lakes: The Seiche



A seiche is the sloshing of water back and forth in lakes and other large bodies of waters. Seiches can be caused by a disturbance such as an earthquake or landslide, changes in air pressure, or changes in the wind. The most common cause of seiches are persistent strong winds blowing along the long axis of large water body causing a rise in the water level at the down-wind side and a lowering of the water level at the up-wind end.

When the wind abates, the water is released as a seiche wave. Flooding and erosion can occur at one end of the lake, while at the other end the decreased water depth can cause hazards to ship navigation.

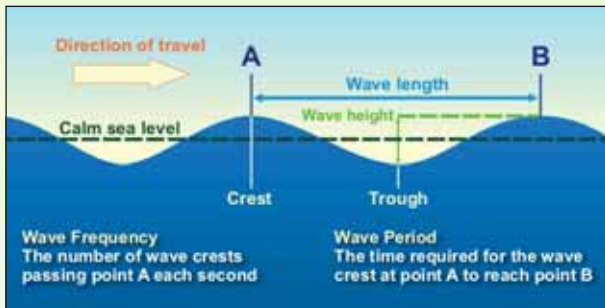
4. Tsunami

Recent events in Japan have focused our attention on tsunamis. Tsunamis are long-period waves generated by undersea earthquakes, volcanic eruptions and landslides. In the open deep oceans a tsunami will have extremely long wavelengths with small amplitudes and might go unnoticed by ships. Tsunami waves travel at very high speeds, often at hundreds of miles per hour through deep water but as the tsunami waves reach shallow water near the coast, they begin to slow down while gradually growing steeper, due to the decreasing water depth and can grow to tens of meters or more as they reach the shoreline. The effects can be further amplified where a bay, harbor, or lagoon funnels the waves as they move inland and well document during Japan's recent event. Another potential cause of a tsunami is an asteroid impact in the deep ocean which could produce a tsunami waves of over 100 meters (more than 330 feet)!

5. Pressure Induced

The 5th but less significant type of wave develops as air pressure perturbations move over the water surface. The sea surface height rises or falls slightly as the atmospheric pressure changes. Low air pressure within a strong storm can elevate the ocean's surface up to 0.5 m (1.6 ft), creating an atmospherically forced pressure wave beneath the storm.

Wave Definitions



Wave definitions: Image credit NOAA

A **wave crest** is the highest point in the wave and a **wave trough** is the lowest point in the wave.

Wave height (H) is the vertical distance between the wave crest and the wave trough.

Wavelength (L) is the distance from one crest to the next crest or from one trough to the next trough.

Wave period (T) is the time it takes successive wave crests or successive wave troughs to pass a fixed point. In the real world, the wave period is actually a spectrum of periods scattered about a mean wave period.

Wave steepness (S) is defined as wave height divided by wavelength ($S = H/L$). Therefore, the same wave height will result in high steepness if the wavelength becomes smaller. A small height divided by a large length will produce a low steepness. When the wave steepness exceeds about $1/7$ the wave will begin to break or "white cap."

Wave speed (C) is the speed an individual wave moves through water. If the wave period (T) and wave length (L) are known, then the wave speed (C) can be determined by $C = L/T$.

Other Wave Facts

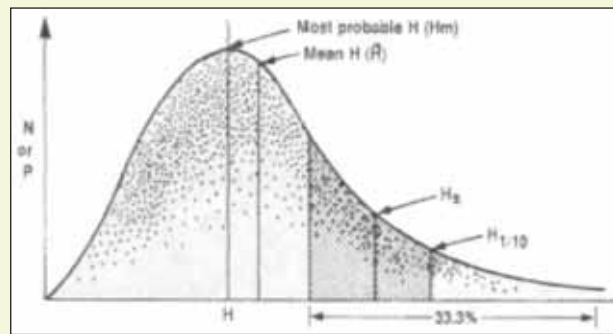
Deep Water or Shallow Water

A wave is considered to be a deep water wave as long as water depth exceeds $1/2$ the wavelength. A wave is considered to be a shallow water wave as long as water depth is less than $1/20$ the wavelength. The area between deep and shallow water is transition zone.

Wave Energy

Wave energy increases by a factor of 4 as the wave height doubles so a 10 ft wave is four times more powerful than a 5 ft wave.

The **significant wave height (H_s)** is the mean height of the highest one third of the waves passing a point. This is of interest as this wave height correlates best with the wave height a trained observer reports after examining a group of wave heights from a ship or platform. The averaged periods of the waves used to compute significant wave height is known as the significant wave period.



Statistical distribution of wave heights

Useful wave height relationships:

H_m (Mean wave height) = 0.64 times

H_s H_s or $H_{1/3}$ = Significant wave height

$H_{1/10}$ (Highest 10% wave height) = 1.27 H_s

$H_{1/100}$ (Highest 1% wave height) = 1.67 H_s

H_{max} (Max probable wave height for a large sample) = about 2.0 H_s

Ocean Swell is defined as any wave that has moved out of its wind generation source region. Swells characteristically exhibit smoother, more regular and uniform crests and a longer period than wind waves.

Combined Seas describes the combination or interaction of wind waves and swells in which the separate components are not distinguished. Combined Seas (CS) is the square root of the square of swell plus the square of wind waves: The National Weather Service considers the combined seas as being the same as significant wave height.



A wall of water approaches the Stolt Surf in Oct. 1977 Photo: Karsten Petersen, www.global-mariner.com

Rogue waves (sometimes called freak waves) are simply unusually large waves appearing in a set of smaller waves. A rogue wave will have a height of at least twice the size of surrounding waves, often come from a direction different than the prevailing waves, and they are unpredictable. Most reports of extreme storm waves say they look like "walls of water," and are seen as steep-sided with unusually deep troughs. The USS Ramapo reported one such wave with a height of 112 feet in the Pacific in 1933. Another report of a freak wave occurred when one struck the Queen Mary amidships, south of Newfoundland, at the end of World War II, rolling her to within a degree or two of capsizing.

BCIT WORKS.



BRITISH COLUMBIA
INSTITUTE OF
TECHNOLOGY

bcit.ca/jobs

Associate Dean, BCIT Marine Campus School of Transportation

The School of Transportation is seeking a full-time Associate Dean to join the institute's Educational Leadership Team. The successful candidate will manage the BCIT Marine Campus located in North Vancouver. This site is the only training facility of its kind in Western Canada that provides a complete spectrum of Transport Canada-approved programs and courses on marine navigation, marine engineering, seamanship, and maritime safety and security. The new multi-million dollar Marine Simulation Centre gives the Marine Campus the capacity to serve the training and research needs of the marine industry in British Columbia, nationally, and internationally.

As a member of the Educational Leadership Team, the Associate Dean provides administrative and educational leadership to keep BCIT at the forefront of marine training. You'll function as first-line educational manager, a member of academic departments, and faculty and staff supervisor. Utilizing your entrepreneurial business acumen, you will build partnerships with internal stakeholders and marine industry partners from coast to coast to implement corporate and school level educational strategies to best prepare graduates who will shape the future of the marine industry.

A collaborative management style that fosters strong working relationships and a passion for transportation

education will ensure success in this exciting leadership position.

Primary deliverables include:

- ◆ Providing leadership consistent with BCIT's mission, as well as educational, financial and human resource management and development
- ◆ Developing academic relationships with other institutions and organizations across Canada and globally
- ◆ Management of Part-time Studies, Industry Services, Business Improvement Programs, and Applied Research
- ◆ Liaising with industry and business, program advisory committees, professional associations, regulatory bodies and government groups
- ◆ A passionate advocate for growing and strengthening the institute
- ◆ Demonstrate vision and the ability to raise the reputation of the Institute and to enhance its existing research and teaching reputation
- ◆ Ensuring full enrolment of Canadian and international students

QUALIFICATIONS

- ◆ Relevant degree; Master's preferred
- ◆ Professional and/or industry certification such as Master Mariner or Chief Engineer, with eight to ten years of directly related experience in business, industry and/or training, or an equivalent combination of education, training and experience
- ◆ Strong leadership skills, good organizational skills and a high degree of self-motivation and business acumen
- ◆ Ability to communicate effectively and build networks with all levels of stakeholders
- ◆ Familiarity with educational technology and new educational methodologies



Op-Ed: "Captain Schettino, How Could You Let that Happen to Your Ship?"

Tuesday, February 7, 2012

By
Captain Peter Squicciarini,
 U.S. Navy (Ret.)
 Master Merchant Mariner



"Captain Schettino, what were you thinking?" the world wonders. This should be the question at the core of any investigation conducted on the *Costa Concordia* tragedy off Isola del Giglio the night of Friday the 13th. Captain, I ask you the same question as one seagoing captain to supposedly another, imposter though you may be.

There are any number of international accident investigations in full swing. Investigators are interviewing your ill-fated ship's officers, crew and passengers in an attempt to glean every morsel of information. Your navigation will be scrutinized. The ship's and Costa's management, perhaps even Carnival's records concerning all things *Costa Concordia* and, yes, your captain's license will be dissected. But you already know that, Captain Schettino. Too late. After the fact.

This marine tragedy is no wreck of the *Edmund Fitzgerald*, a ship swallowed by the sea. That investigation in the end concluded that we will never really know how and why she sank with her entire crew of 29 good men. Captain Schettino, we already know why your ship is dead and lying on its side with at least 17 dead and more missing souls. You personally ran her up onto a rock, that's why. No investigation is needed to prove, once again, ships and rocks don't mix. Captain, what were you thinking when you made that fateful decision to pass too close to Giglio instead of sailing a safe course?

In case your understanding of the time-honored tradition that the captain stays with the ship until the end was temporarily blinded, I will remind you that with responsibility comes accountability. This precept is the foundation of the unique and near-limitless authority you had as the captain of the *Costa Concordia*. All real captains embrace total responsibility and cold accountability for our ships and the people onboard. What's your excuse?

Now that you are safely ashore and have some time on your hands, you might want to read the historic editorial that appeared in the May 14, 1952 edition of the *Wall Street Journal* after the deadly collision between the *USS Wasp* and *USS Hobson*. Lives and ships were lost in that tragedy too. It starkly presented the captain's precept of authority, responsibility, and accountability. Aspiring to

command someday, we midshipmen at the U.S. Naval Academy were indelibly imbued with the editorial's message that the buck stops with the captain. Period. The "religion" of ultimate accountability served me well as a Navy Commanding Officer and later as a professional mariner at sea.

Captain Schettino, I shall summarize your Hobson's Choice when you accepted the job. Listen closely. The *Wall Street Journal* editorial states that: "With responsibility goes authority and, with them, accountability. The captain of the ship is given honor and privileges and trust beyond other men. But let him set the wrong course, let him touch ground, let him bring disaster to his ship or to his men, and he must answer for what he has done." When you assumed command you accepted the huge mantle of responsibility that comes with being called "Captain." Now you must answer for it.

It is obvious to all honorable and dutiful captains that you only got as far as "given honor and privileges" in your flawed understanding of what was your inescapable duty to your ship, crew and passengers. Arrogance? Vanity? Unfathomable hubris? I ask you, Captain Schettino, what made you think you could do anything and go anywhere with that grand ship and more than 4,000 souls onboard? You chose to be the rock star of *Costa Concordia*, not the captain.

Amongst sea captains you are now known merely as Schettino, no longer "Captain." You are shunned. You have cast a black mark on all of us who go down to the sea in ships. Rest assured only you, and not your ship or your crew, will be held accountable for this calamity. You will bear the full burden. No amount of preposterous excuses will blunt the sword of accountability. Unfortunately, no amount of accountability will bring back the dead or find the missing.

Schettino, tell me, "What were you thinking and how could you have let that happen to your ship?"

Editor's Note: The opinions expressed herein are the author's and not necessarily those of The Maritime Executive. Feb 7

ICS Board Meets in London



The Board of Directors of the **International Chamber of Shipping (ICS)**, whose member national shipowners' associations represent all sectors and trades and more than 80% of the world merchant fleet, met in London on 6 February.

Piracy

ICS members reviewed the continuing threat to shipping from Somali pirates in the Indian Ocean. Noting that the capability of Somali pirates is actually higher than it has ever been, ICS believes that effective compliance with Best Management Practices by shipping, and sustained military intervention with a more aggressive stance, has reduced the pirates' rate of success. However, the current situation remains totally unacceptable, with about 200 seafarers still being held hostage in the most appalling conditions, with thousands more still having to transit the danger area in constant fear of their lives.

ICS national associations agreed to work to ensure that the problem of piracy retains sufficient political and public attention so that the crisis might be properly and decisively addressed during the year ahead.

ICS Chairman, Spyros M Polemis explained:

"Recent press reports might give the impression that the level of piracy off Somalia is decreasing. However, most ship operators will be aware that this is not an accurate representation of the current situation. The ICS Board has therefore identified three specific immediate objectives:

We need to persuade governments to task the military to take the attack direct to the pirates, while at the same time continuing to defend merchant ships in the best way possible. Second, every apprehended pirate should be arrested, taken to a court of law and, if found guilty, imprisoned. Thirdly, governments must break

the financial chain through legal action against criminal financiers investing in piracy wherever in the world they are identified."

ICS welcomed the international conference on Somalia that will be hosted by the United Kingdom on 23 February, and agreed that its member national shipowners' associations will lobby their governments hard, in advance of the international conference, with respect to the three key objectives identified by ICS.

Reducing CO₂ Emissions

The ICS Board reviewed the industry's position with respect to progress being made at IMO on further measures to reduce CO₂ emissions from international shipping, including refinements to the Energy Efficiency Design Index (EEDI) - which was adopted as part of the ground breaking international agreement reached at IMO in July 2011 and which will apply to new ships from 2013 - and discussions at IMO about possible Market Based Measures (MBMs).

ICS also reviewed the operational and technical measures now being taken by existing ships, in support of the industry's target of improving efficiency per tonne/km by 20% by 2020. With respect to the EEDI, ICS confirmed its complete opposition to the application of the EEDI to existing ships.

"This is not what the EEDI was developed for, and the goals set for the design of new ships, and the complex formulae developed for them, are completely inappropriate for the existing fleet." said Mr Polemis "ICS will be making the industry's considered view on this clear at the next meeting of the IMO MEPC."

ICS also confirmed its strong opposition to a proposal from the Bahamas to IMO whereby governments would

specify limits on the CO₂ emissions of individual ships (as determined by fuel consumption) and which would subsequently be reduced over time.

"If a ship's CO₂ allowance was exceeded during the time period specified, it would have to go off-hire and a second ship chartered as replacement. The problem is compounded by the reality that the fuel consumption of two identical ships can vary dramatically according to trading patterns and other variables such as weather. ICS members confirmed that such an approach was very worrying and should be firmly opposed," said Mr Polemis.

The Bahamas' proposal has been made with the apparent intention of being an alternative to other Market Based Measures that have been proposed at IMO. ICS is concerned that some might see this as being a superficially attractive means of stopping the adoption of an MBM.

Mr Polemis remarked "As well as being highly damaging to large parts of the industry, the Bahamas' proposal would alter the level playing field and distort competition."

The ICS Board also discussed the outcome of the UN Climate Change Conference in Durban, which has agreed to establish a Green Climate Fund for developing countries, seeking \$100 billion a year by 2020, and proposals by the World Bank that shipping might be expected to contribute a quarter of this money.

Mr Polemis remarked "The ICS Board agreed that many governments seemed more interested in how much money can be raised from shipping, rather than the progress we are already making in reducing our emissions through technical and operational measures. We have said it before, and we will say it again, shipping is not a cash cow and should never be seen as one. Any such notion will severely damage shipping's competitiveness and thus adversely affect the consumer greatly."

Mr Polemis added "It is internationally accepted that IMO is the appropriate forum for discussion about further CO₂ reduction measures by shipping, and it is counter-productive and will crucially affect the level playing field if the EU was to adopt a regional Emissions Trading Scheme for shipping. The focus must be on collective discussions about a global approach."

Costa Concordia

The ICS Board discussed the Costa Concordia tragedy and agreed that the disaster would certainly influence the regulatory agenda of IMO, and that the industry would contribute constructively to the discussions. ICS would welcome the earliest possible publication of the Italian accident investigations.

ICS acknowledges that the safety performance of the industry will be under review, but it is still far too early to know what the detailed outcome of the accident investigation will be and it is therefore not appropriate for ICS to provide any definitive comment on the incident. ICS reiterates that safety of life at sea is always the industry's highest priority, and ICS will contribute fully and constructively in the discussions at IMO, or in other regulatory bodies, that take place in response to this major casualty.

Cargo liquefaction

The ICS Board expressed serious concern about the recent loss of several ships carrying nickel ore/iron ore fines loaded in India, the Philippines and Indonesia, apparently due to cargo liquefaction causing cargo to shift dramatically. ICS members were especially disturbed by the recent tragic loss of 22 crew on the Vinalines Queens after loading a nickel ore cargo in Indonesia.

ICS acknowledges that the issues are complex, but the root of the problem would seem to be the refusal of some shippers to allow the appointment of independent surveyors to conduct cargo testing in accordance with IMO requirements - plus the commercial pressure placed on masters to accept potentially unsafe cargoes at what are often remote locations.

The ICS Board agreed that the prevention of similar incidents was of the utmost priority and that in co-operation with IMO, insurers, and the governments of those nations where problems seem to exist, ICS would endeavour to help find a solution that would assist shipowners and shipmasters to resist any pressure to accept unsafe cargoes

Source: ICS 7 February 2012

Container ship of the future



Above a model on display at the STX yard in Korea of a possible container ship of the future, with a length of 476 mtr, beam of 59.5 mtr and a scantling draft of 16.00 mtr the container vessel will be able to transport 22.000 TEU's

Situational Awareness

What a recipe for good habit. Such are the things that we need to inculcate in our value system. We must try to foresee the situations that might develop and align ourselves accordingly for "action to be taken". This is meant for everybody on board but especially for consideration (reflection) of the Chief Engineer and the Master.

Situational awareness has very rightly been adopted by STCW code as a key measure. In fact, it is a prerequisite for safe operation. Through situational awareness we can improve vessel resource management skills. How to marshal resources on board is an art. Once we were coming out of Sea of Japan and heading for Mokpo port and suddenly visibility became almost zero due to thick fog. Master called me and gave me the radio and told me to stand near the port bunker station and keep telling him if the fog horn sound from a nearby vessel is getting louder or fainter. After one hour, the visibility improved and we saw two vessels close by but due to effective marshalling of resources and utmost care taken, we avoided any incident.

I was in Japan for briefing by the owners and the Marine Superintendent put in front of me a chart of Karwar port (they had an incident of anchor dragging and subsequent touching of bottom earlier on a ship) and asked me that you are going on a car carrier and what will you do to anchor at this position. I thought for a moment and, because of good training by my masters, I told him that I will not anchor but report to port and go out and drift. He was very pleased. I also told him that charts are often not up-to-date vis-à-vis the marked depths and so we need to be careful in such waters. Why, in Lagos, if you are not berthing and anchoring for the night then you are inviting trouble. Must go out and drift. We generally get lazy to drift because of the need to keep watches and slight discomfort when the vessel is pounding due to tide (at this moment I can clearly recollect excessive rolling at Sandhead anchorage).

Some years back we were anchored at Chittagong. It was a smaller vessel with two hatches. We were playing carom waiting for lunch and one ship was passing and going for berthing and suddenly we saw her drifting on to us and plucking away our port anchor. The port authorities blamed us and said that we are anchored in the channel. When we came alongside, we were asked to report to the office of the DC. The captain took me along (The late Capt; Mulla always did that). While presenting our case, I spoke up to say, Sir if we were anchored wrongly, the port could have warned us. Listening this, the captain immediately took charge saying, please don't listen to him, he is a new chief and has no idea. Please come for lunch on board my ship tomorrow and I will explain everything to you. Next day the DC came and was very happy to see ourselves conduct as a family and gave us the clean chit.

We should always prepare ourselves according to the area of our next trading. If we are going to a hot area, we

must clean the auxiliary condenser otherwise it will make us cry. If going to a cold area, we should try out our sea water recirculating valve and test the accommodation steam lines. These are mere examples, a lot more will need to be done, including the deck machinery, which we normally forget.



We should take into account how the situation awareness enhances the individual's ability to perceive and interpret information. Perception, "jagriti", "chaitanyarahna" are all beautiful things that we practice at sea. Once we were loading aluminium bundles at Calcutta and the loading finished and stevedores and the agent wanted us to sail but our old Captain was aware of the adverse situation and came to my cabin to call me. He took me to the hatch coamings and asked me to tell him if I found anything wrong. I said to him, Sir, do you not think that these bundles will shift enroute. He was very satisfied. The stevedores were not listening to him. Together we put pressure on them to do proper lashing before we sail. On arrival at the discharge port, when hatches were opened we found two bundles shifted despite lashing.

Close up examination of the frames in the holds after hatch cleaning to ensure structural safety, effective lashing (or trimming) should form our constant endeavour. And, of course, achieving optimum trim, reducing speed in rough weather due to head seas and swell, for surpassing EEDI. This is a contemporary subject needing our attention.

We were entering lock gate at Zeebrugge and a call came from bridge, "no power in windlass". I was sitting on the ECR computer and third engineer was at the console. He rang back and said something in his language to fellow watchkeeper on bridge but the movement of his hands indicated to me that he was telling, pull down the breaker and push up again. There was no feedback from bridge. After a few minutes, I told third to ring up and find out if power has been restored. To our surprise, the answer was "no power until now". It is at this time I rushed the third and the fitter to forward and it was found that the pin of windlass operating handle had fallen off, which was fitted just in time before opening of the caisson. There is a lot to learn from this. The senior should be present on the spot to be aware of the situation and must ensure through a clear feedback that whether the matter has been resolved or not.

Editor's comment: We were very pleased to receive this article from Mr Mahendra Singh, BE (Mechanical), First Class (Motor), Chief Engineer and MET Teacher. To preserve the original style, the article has only been slightly edited.



Ecoship Concept Design

Eco Marine Power Co. Ltd. (EMP) unveiled a concept ship design incorporating its Aquarius Marine Renewable Energy (MRE) System. This concept design is called the Aquarius Eco Ship and is part of Eco Marine Power's ongoing development efforts aimed at moving shipping towards a more sustainable future.

The Aquarius Eco Ship is the result of a comprehensive study project which focused on optimising the design of a large ocean going ship such as a bulk carrier or oil tanker to harness the power of the wind & sun by using the Aquarius MRE System.

The Aquarius MRE System is an innovative fuel saving and emission reduction technology that incorporates a variety of elements including solar panels, energy storage modules, a computer control system and an advanced rigid sail design.

This green shipping focused solution has been designed to be highly flexible and configurable so that it can be installed on variety of ship sizes and types. Applications for the system include bulk carriers, oil tankers, survey ships, passenger ferries & even unmanned surface vessels.

In addition to the Aquarius MRE System, a future Aquarius Eco Ship would also be fitted with other fuel saving measures such as an advanced electrical propulsion system, an optimised hull design and waste heat recovery technologies.

This combination of technologies could lead to fuel savings of 40% or more and also dramatically reduce the emission of noxious gases such as Sulphur Oxides (SOx) & Nitrogen Oxides (NOx). In addition the use of renewable energy would reduce the vessels carbon footprint.

An Aquarius Eco Ship could include enough solar panels for 1MWp solar system or larger and enough energy storage modules so that the ship would not need to use auxiliary diesel generators whilst in port. These energy storage modules could be charged via the solar panels or by the ships main generators.

Importantly the Aquarius Eco Ship and Aquarius MRE System have been designed to take into account the reality of operating rigid sails on ocean going ships and include a range specially developed safety features.

Eco Marine Power is now seeking to work with a shipyard or shipping company in order to further develop the Aquarius Eco Ship concept. It is anticipated that this work will lead to the development of several new design concepts and possibly additional patent applications.

The company will also begin test activities related to the Aquarius MRE System this year and is seeking to co-operate with additional development partners and strategic investors in order to produce a commercial version of the system. For further details about the Aquarius MRE System please see: <http://www.ecomarinepower.com/en/aquarius-system>



VLCC to Floating Ore Transshipment Terminal



Sea Duchess as a VLCC before conversion

Ore Fabrica (fabrica means factory in Portuguese) began life as an oil tanker, Sea Duchess in 1993. Tankers make good candidates for conversion to ore carriers due to their centre tank hull construction and as a single hull VLCC her days of carrying crude oil were over. The conversion turns the centre tanks into ore holds and the wing tanks as ballast. Heavy strengthening is added to the under-deck structure to support the Liebherr cranes on the starboard side and travelling ship loader on the port side.



Ore Fabrica The cranes are configured to be capable of plumbing the centre of Vale Brasil's holds and then back to the deck-mounted hopper. The conveyors are covered to control dust and the shiploader is mounted on rails to traverse the length of the deck. The conversion also incorporated upgrades to her accommodation and generating capacity.



Starboard side, five Liebherr cranes

Although she is anchored in the inner harbour, it is expected that the ship-to-ship mooring and unloading will take place in the outer bay. Ore Fabrica will be capable of three discharge modes - direct trans-shipment, discharge into her own ore holds and loading out of her holds to a receiving vessel. Vale Brasil will arrive with just under 400,000 tonnes of ore while Ore Fabrica has a corresponding deadweight of 280,000 tonnes. At least one, and up to three Capesize are going to be needed to take the full cargo if Vale is going to minimise the number of times the ore is handled.

<http://antipodeanmariner.blogspot.co.nz/>
8 February 2012

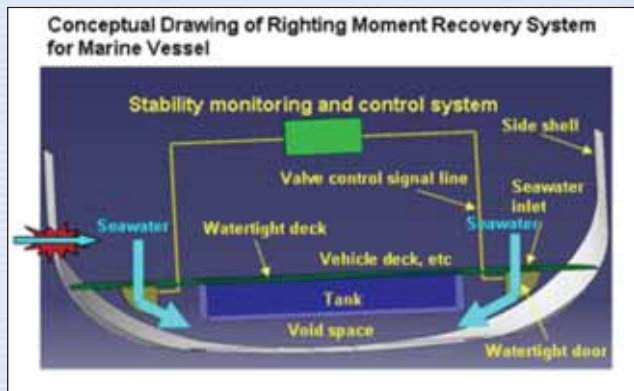


Ship Loader with transfer conveyors

With the planned Malaysian land-backed trans-shipment terminal years away, Ore Fabrica is Vale's only Asian discharge port for the Chinamax VLOC's. With the remainder of the VLOC's entering service in the next two years, Ore Fabrica will working at capacity as the 35 ships haul ore eastward. Although a clever technical solution to the current political impasse, the AM doesn't believe that Ore Fabrica will be capable of keeping up with the relentless pace of Chinamax arrivals - one every three days? The AM still believes that a commercial solution, albeit with Chinese Owners snapping up some or all of Vale's ships at a discount, will see them discharging in Chinese ports as they were designed to do.

Mitsubishi Develops System to 'Right the Ship'

by GCAPTAIN STAFF Source: MHI

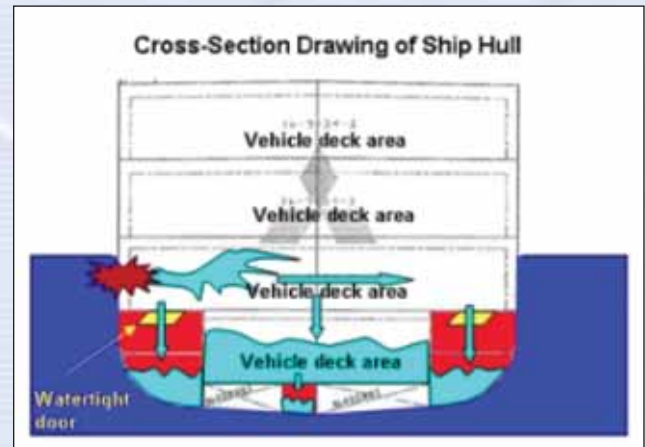


Mitsubishi Heavy Industries, Ltd. (MHI) today announced a new system that improves the stability of damaged ships, reducing the risk of capsizing. The newly patented system, called the "Righting Moment Recovery System", was proprietarily developed by MHI in 2009 following the strengthening of SOLAS regulations on ship stability primarily for vessels such as RO/RO ships, pure car and truck carriers (PCTC) and ferries.

If a ship's hull is damaged, the Righting Moment Recovery System enables the quick transfer of seawater into voided spaces located in the bottom of the ship's hull, thus reducing the risk capsizing by lowering the ship's center of gravity while at the same time increasing the vessels righting momentum.

The system makes use of the voided spaces typically allocated to other functions such as fin stabilizer rooms, duct keels and ballast water tanks, and therefore does not

sacrifice vehicle carrying capacity. In fact, MHI insists that system eliminates the need to divide the vehicle deck area into small compartments as a result of the strengthened regulations and facilitates smoother vehicle maneuvering within the ship.



MHI says that it is focusing its marketing activities to attract new orders for the system from high-end shipowners and one order has already been placed by Japan's Nippon Shipping Co. The order calls for a 170-meter-long RO/RO capable of carrying about 170 trailer chassis and 100 passenger cars. The vessel will MHI's Shimonoseki Shipyard & Machinery Works and is slated for delivery in March 2013.

MHI hopes that this, along with two other promising technologies the company is rolling out, will contribute to expansion of MHI's engineering business for both new ships and the conversion of existing ships. The two other technologies include "Mitsubishi Air Lubrication System" (MALS) and a proprietary ballast water treatment system.

February 8, 2012

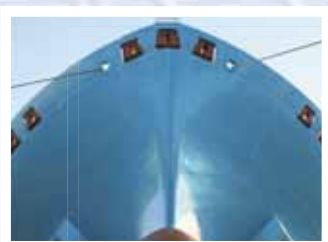


Image courtesy Hyundai Heavy Industries Horizons gCaptain 2 Feb

Nickel Ore Deemed Deadliest Bulk Cargo on Ship Sinking Risks



Vinalines Queen, carrying more than 54,000 tons of nickel ore from Indonesia to China capsized and sank on 25 December 2011, with only one of the crew of 23 people surviving.

Intercargo has reported that nickel ore is now the deadliest dry bulk commodity that we ship by sea. As a cargo that turns to slurry during a voyage, nickel ore causes many vessels to capsize, killing approximately 66 mariners in the past 15 months.

The International Association of Dry Cargo Shipowners states that ore is at a high risk of liquefying if it holds too much moisture. This can make ships unbalanced and

cause them to sink before the crew can be rescued. In recent years, this area is where the most preventable casualties were seen. Liquefied nickel-ore cargoes have accounted for 44 deaths among dry-bulk sailors in just the last three months of 2010. Additionally, 22 more seafarers have died since then.

Intercargo has now set out guidelines to 300 ship owners around the world to use as a model before the new international safety rules are put into effect in 2015. 45 million metric tons of the ore were shipped in 2011; this guide details safe loading procedures and warns about the dangers of false or inaccurate statements about moisture content. Insurers claim that crew arriving to load nickel ore do test the dry bulk shipment for moisture content in galley ovens, although this raises safety and adequate testing concerns.

Nickel ore is generally loaded at untraditional locations in primitive and archipelago regions, with nothing to keep things dry. It is mined in Indonesia, the Philippines, and New Caledonia and shipped mostly to China for steel making purposes. On average, 26 lives are lost annually on ships that carry bulk cargoes.

Maritime Executive
2 February

Long Way to Go for Culture of Safety

It's a source of curiosity, if not puzzlement. Despite tighter regulations, stricter inspection regimes, increased training requirements and more advanced ship technologies, we are not seeing a stop to marine accidents that, on hindsight, could have easily been prevented. Safety and training gurus keep drumming on the need to cultivate a safety culture, and many shipping operators, for sure, are heeding the message. But it seems the roots of that culture aren't spreading wider and deeper enough to become part of the very psyche of those who own the ships and those who man them.

Could the problem be that the shipping world has adopted a mechanical approach to the whole issue – with too much emphasis laid on systems and procedures and too little on their why and wherefore? Are seafarers being made to undergo more and more training in the hope that they would behave in certain predictable ways like **Pavlov's dog**? Doesn't



the culture of safety come back to the question of values? And aren't those values being eroded by the commercialism that is gripping many by the neck – shipowners who cut corners to reduce costs, maritime schools that exist mainly for profit and seafarers who only want to earn a living but have no real love for the life at sea?

Whatever the answers, it's time that the traditional approaches to marine safety issues were reviewed by the international regulators and the shipping community at large. We'd like to see, for instance, a more serious investigation into the psychological factors that contribute to marine accidents. What goes on in the mind of a seafarer who is about to commit a fatal mistake? We'd also like to see values education being made part of seafarers' education. And lastly, we'd like to see more shipping companies adopting a rewards system to encourage greater safety consciousness and safety compliance. Pavlovian as it sounds, propagating a culture of safety requires both carrot and stick.

~**Barista Uno**

Published in **Maritime Safety**
15 February 2012

UK Confirms £12m Annual Seafarer Training Budget

Industry welcomes support for SMarT



The UK shipping industry has welcomed the government's pledge to continue to fund seafarer training, after shipping minister Mike Penning told parliament in a written statement that he had allocated £12m (\$18.7m) a year to the Support for Maritime Training Scheme.

The news will boost Britain's maritime industry, which also hopes to convince the government to retain the country's tonnage tax regime and reject proposed amendments that could drive away foreign shipowners.

The Chamber of Shipping, which has been lobbying to save SMarT, said it was "delighted" that the government had recognised the value of the scheme to the maritime sector.

"This is a good decision by the minister and we welcome the positive input from the review panel," said director-general Mark Brownrigg. "The announcement will be well received by individual shipping company employers and other training providers who have delivered excellent value for the government's investment to date

"The retention of SMarT funding is of crucial importance – and has been so particularly over the last decade which has seen numbers of new officer recruits double to circa 900 per year, in parallel with the revival of the UK fleet."

Mark Dickinson, general secretary of the officers union Nautilus, also applauded the decision.

"We greatly welcome this announcement," he said. "The fact that this review was being conducted against the background of cuts in public spending was of immense concern, and we are very pleased that the government has recognised the value to this maritime nation of supporting investment in seafarer training.

"A continued supply of maritime professionals is essential not only for the UK Merchant Navy, but for the country's maritime infrastructure and for key industries and services such as marine pilotage, surveying, classification, maritime law, shipbroking and financial services."

Mr Dickinson said SMarT represented "a vital element in continuing our proud tradition of seafaring and maintaining the UK maritime cluster in the face of intense international competition".

The minister said he based his decision on an independent review into government support for merchant navy training and skills development.

"I have concluded that continuing government support for maritime training is required," he said. "The consultants' findings, accepted by the independent panel, were that there was a good value for money case for the retention of government funding.

"Evidence was presented to me, showing that for each working year of a seafarer who has benefited from government funding, approximately £14,500 in additional output is created relative to that of a UK worker displaying average productivity."

Mr Penning noted that, with over 90% of the UK's import and export trade by weight transported by the maritime sector, continued government support reflected the UK's commitment to economic growth and would help to maintain the competitiveness of this sector.

"I have therefore decided to provide a budget of £12m a year for the support for maritime training scheme for the remainder of this parliament," he said. This is unchanged from the current level but down from £15m in the 2010-2011 budget year.

"In view of the forecast national shortage of trained seafarers and the need to develop the next generation of UK officers and ratings, I intend that the majority of the budget be focused on supporting initial training for cadets studying at junior officer level with the remainder supporting ratings training and ratings to officer conversion training."

There will be changes to the current scheme to improve value for money, maximising the intake of trainees and creating more rigorous accountability structures, Mr Penning said.

The Chamber of Shipping had put funding for training and a stable tonnage tax regime at the top of its agenda. Now, hopes are rising that the industry may have cause for a double celebration. In an interview with Lloyd's List last week, Mr Penning said the tonnage tax was doing an excellent job.

"The industry does not want it touched. They want it left alone. They want stability in their industry. I can understand that and so can [transport secretary] Justine Greening," he said.

Talking to Lloyd's List before Monday's announcement, Mr Brownrigg said protection of funding for the SMarT was critical to London and the UK's long-term future as a maritime nation.

"If we don't have a skills set that is built indigenously, the UK maritime sector will be at a severe disadvantage," Mr Brownrigg said.

Lloyd's List 23 January 2012

Watchkeeper: A Warning in Lights in the Sky

There was a Winter treat for people as far South as the Midlands of England, southern Denmark and North Germany this January, with a rare exhibition of the Aurora Borealis or "Northern Lights" over several clear nights. This spectacle was a portent of what will probably become quite common over the next two years, with the solar activity which causes this amazing sight reaching one of its regular peaks.

While nobody who sees this natural phenomenon can be unmoved by its beauty, we should also be alert to the fact that this peak in solar activity could well cause interruption to all manner of satellite transmissions. Twelve years ago, which was the last time this electromagnetic disturbance was at such a high level, our dependence upon the Global Positioning System and all sorts of equipment that depends on satellite tracking and timing was far less than it is today.

The vital signals from satellites, which we now depend upon so completely, are exceedingly low powered and are thus highly prone to interruption from the electromagnetic disturbances that accompany solar flares. So there is a warning to navigators in particular to be alert to GPS and all the associated navigational equipment possibly being affected, with very little warning. And not only navigators, bearing in mind the amount of electronic equipment that depends upon timing devices driven by the friendly satellites that is to be found throughout the ship, and also ashore.

For some years there have been warnings about the lack of resilience in so much of the equipment the modern world depends upon. Such alerts have encouraged rather less dependence and more checking and cross checking against alternative navigational position finding equipment. The lighthouse authorities in particular have been at the forefront with their messages urging navigators not to give up on traditional methods of

navigation and, above all, to be alert to the reality of risks of satellite signal interruption, both from natural sources such as solar activity, or the equally worrying phenomenon of accidental or criminally inspired jamming.

The International Association of Lighthouse Authorities, which has been heavily involved in the development of e-navigation and its practice, has tried to ensure that ships are provided with a degree of resilience to any such problems. IALA members like the UK General Lighthouse Authorities have championed the development of eLoran as a separate, independent complement to GPS, with high power, low frequency and ground based transmissions and thus unaffected by any GPS signal problems.

A number of tests around the world have shown the alarming consequences of GPS jamming, which can be achieved by small but powerful equipment which criminals can access over the internet. Using one of these small jammers, tests have demonstrated that equipment within a 30 km radius has been affected, and aboard ship the degree of chaos is extraordinary with all position-finding, radars, communications (including mobile phones) engine-room control and monitoring equipment completely unreliable. It is said that criminals who specialise in the theft of expensive cars have used such jammers to disable the GPS trackers fitted as standard on such vehicles, and caused navigational equipment to fail a long way out at sea. The Dutch authorities have published a number of warnings. And with the sun entering one of its periods of maximum activity, there comes a more general warning for navigators – indeed all seafarers – to be on their guard against over-reliance on equipment that may not be quite as trustworthy as it appears.

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

Date: 01.02.12



Oasis of the Seas



Global Maritime Education & Training Association

GlobalMET Limited

Australian Company Number 103 233 754

www.globalmet.org

Chair:
New Zealand Maritime School
2 Commerce Street
Private Bag 92068
Auckland
New Zealand

Executive Secretary:
Rod Short
P O Box 307 Waikanae
Kapiti Coast 5250
New Zealand
rod.short3@gmail.com

Secretariat

P O Box 307 Waikanae
Kapiti Coast 5250 New Zealand
Tel 64 4 905 6198 Fax 64 4 905 6190
rod.short3@gmail.com

B III 3276 Vasant Kunj
New Delhi India 110070
Tel 91 11 26124221 Fax 91 11 26894188
secretariat@globalmet.org
www.globalmet.org