



Newsletter

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TRAIN, TRAIN, RETRAIN, RETRAIN!

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Boredom and Complacency

As mentioned in the newsletter article, it was a privilege to join 500 senior industry people, including 400 serving seafarers, at the one-day Anglo-Eastern Annual Seminar 2011 "Role of Complacency in Accidents" in Mumbai on 1 March. Presentations were delivered by a number of well-known international commentators on maritime issues.

All were informative, well-delivered and interesting. However, it was the presentation by Ms Renata Ervilha, General Manager (Shipping), of the large Brazil-based iron ore miner Companhia Vale do Rio Doce (Vale) and the order for 400,000 dwt ore carriers that set me thinking about life on board such a vessel.

These vessels are likely to be engaged on long haul voyages. Too large for the Panama Canal, they will probably go in ballast from China to Cape Horn then up the east coast of South America to a Brazilian port for a full load of iron ore. Then back to China, around the Horn, fully laden and against the weather. Each leg is likely to take not less than 40 days - at least 80+ days at sea altogether.

Each ULOC, while of basic design for the carriage of dry bulk, is likely to be equipped with highly reliable technology that runs smoothly, particularly while still reasonably new. Extensive automation will have sensors providing data from many parts of the vessel. e-Navigation will ensure accurate position fixing and tracking. A lot of the time there will be little or no interaction



with other vessels. Poor visibility, very bad weather and high seas will often be encountered, particularly when rounding Cape Horn. Ice may be present.

Except when adjacent to the ports, apart from keeping a lookout, monitoring readouts and responding to any alarms, what will there be for the watchkeepers to do? To break the monotony "let's go in and have a closer look at Pitcairn Island"!

While the latest telecommunication equipment will no doubt be installed, will it be available for social use by all of the crew? Will those on board be able to go online, be able to download and print messages from loved ones, be able to engage in distance learning? The latest communications technology has the potential to go a long way to counter boredom and alienation during the long ocean passages. But will it be readily available for all on board?

Also, extensive, efficient and reliable electro-technology and automation are likely to bring considerable dependence on the equipment. The real world will be seen through electronic screens. Complacency will grow alongside the trust in the technology. Situation awareness is likely to weaken.

There are many issues for MET to address.

Rod Short



Berge Stahl, 365,000 dwt, loa 343 m, is presently the largest ore carrier

Piracy: Orchestrating the Response

GlobalMET has again been privileged to be involved in seminars in Mumbai. On Monday 28 February, a half-day seminar, held in the Shipping Corporation of India auditorium, addressed "Piracy: Orchestrating the Response", the IMO theme for 2011. Organised by the India Chapter, it was significant that an afternoon seminar brought together at relatively short notice was well attended by senior people. Mr Hajara, Chairman and CEO of SCI welcomed participants, Dr Agnihotri, Director General of Shipping, delivered an opening address, Capt M M Saggi, Nautical Adviser to the Directorate General of Shipping, chaired the session. Presentations on the many aspects of the current piracy problem were delivered by LCDR Paul Turner of the United States Coast Guard, Daniel Sheehan, Maritime Adviser to the Government of the Marshall Islands, Capt Sanjay Mohan, Security Coordinator, Anglo-Eastern

Group and CDR Suresh, Command Operations Officer, Western Naval Command, Indian Navy.

Many very justifiable and serious concerns were expressed during presentations and in lively debates. For those involved in piracy, "this is good business"; for those affected by piracy, particularly the seafarers, "this is no tea party - wake up!"; this problem "is like a balloon - squeeze one part and it expands in another"; for seafarers there needs to be more of "keep a proper lookout and get back to basics."

While many proposals for addressing the situation were suggested, the overall response was that this very serious problem will continue to grow as at present there is not the international political will to stop it. Seafarers will continue to suffer. A succinct comment about the shipping industry and its seafarers was "we're so successful, we're not even noticed, even when there is a resurgence of the age-old problem of piracy".

Dr Agnihotri, Director General of Shipping



Rod Short with CDR Suresh, Command Operations Officer, Western Naval Command, Indian Navy

Seminar participants

Mr S Hajara, Chairman & Managing Director, Shipping Corporation of India, Dr S B Agnihotri, Director General of Shipping, Capt M M Saggi, Nautical Adviser to the Government of India



Capt Pradeep Chawla, Anglo-Eastern Group and Director, GlobalMET

Role of Complacency in Accidents

Five hundred senior industry people, including four hundred serving seafarers, considered the "Role of Complacency in Accidents" at the Anglo-Eastern Annual Seminar 2011 in the Grand Hyatt Hotel in Mumbai on 1 March. Presentations were given by delegates from Anglo-Eastern, Vale, Saga Shipholding, USCG, IMO, Hong Kong Marine Department, Lloyd's List, DNV, Marshall Islands, Indian Navy, BP Shipping. The ExecSec was privileged to participate on behalf of GlobalMET.

All presentations were of a high quality and very interesting. While concerns about complacency, especially when associated with the use of electronic aids, were extensively discussed and many suggestions made as to how to address a growing issue, piracy, many human factors affecting onboard performance, and training needs were also considered.

Of particular interest was a presentation by Ms Renata Ervilha, General Manager (Shipping), of the large Brazil-based iron ore miner Companhia Vale do Rio Doce (Vale), about the company and its order for 400,000 dwt ore carriers to be built in China. These vessels are to be engaged on long haul voyages. In the discussion among delegates, concern was expressed about living and working on such ships and the possibilities of complacency and boredom becoming major issues. To lessen their isolation, will those on board have ready access to modern communications?



Capt Ashok Mahapatra of IMO



Mr Michael Grey, Maritime Journalist



Capt Kersi Deboo, Anglo-Eastern Group



Rod Short with Mr Francis Akara, Anglo-Eastern Maritime Training Centre

Singapore Maritime Academy's

Maritime Experiential Learning "Camp"

The unique Maritime Experiential Learning (MEL) "Camp" has become a regular feature of the Singapore Maritime Academy's education and training activities. Initiated in 2005, it has evolved into a very special experience for maritime students at SMA, as well as for students from other maritime academies. For the past four years it has been held three times each year.

The objective of the MEL concept is to help to bridge the gap between studies ashore at the SMA campus at Singapore Polytechnic and life aboard ship, albeit aboard a 75,000 gt, very comfortable, well-run cruise ship. Normally some 80 students participate, mainly from Singapore but also from China, India, Japan, Korea and The Netherlands. SMA teachers involved are assisted by presentations by senior shipping industry leaders, motivational speakers and maritime educators from Japan, Korea, New Zealand, Singapore and the United Kingdom.

This article describes the MEL Camp, held aboard 'Superstar Virgo' in mid-March during a four-day cruise from Singapore to Penang and Phuket and return to Singapore.

Day 1

Embarkation at 1400 hours; muster stations at 1700 hours, departure at 1800 hours. From 1800 to 1930, a welcome by SMA Director Roland Tan and introduction by Camp Commandant Savio Cautinho, followed by a presentation by GlobalMET ExecSec Rod Short on the global shipping industry and the port of Singapore. This takes place in the large 'Galaxy of the Stars' lounge above the bridge which has excellent views – the 'best maritime classroom in the world' – as Superstar Virgo heads out of Keppel Harbour, westwards towards Malacca Strait.

The unique experience of teaching students in a 'classroom' that is moving through the crowded waters of the port of Singapore, slowing to disembark the pilot and then picking up speed and moving into the lower reaches of the Malacca Strait, enables many port features and ships and offshore vessels to be pointed out; eg the various types of ships alongside and at anchor, under way, laden and in ballast, harbour craft, rigs, navigation aids, port facilities and refineries. Leaving a major maritime hub and port with 350 to 400 ship calls a day and entering the waters of one



of the busiest shipping lanes clearly underscores the vitality and importance of the industry the students are studying.

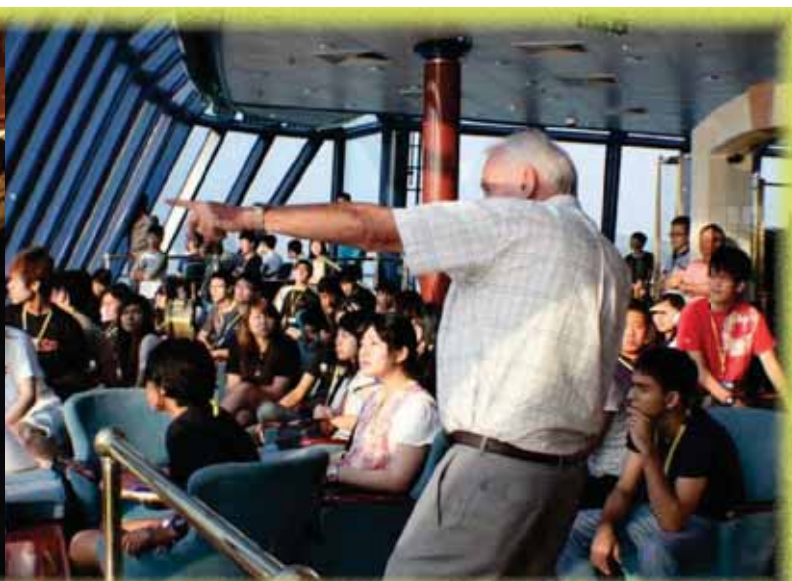
After dinner a presentation was given by well-known Singaporean adventurer and author Mr Khoo Swee Chiow, who related the demands and difficulties of twice climbing Everest, the first after preparing for ten years, skiing and walking to the North and South Poles, swimming across Malacca Strait, cycling from Singapore to Beijing and other highly demanding adventures. He had arrived in Singapore that morning from climbing Mt Kilimanjaro. A compelling presentation of fascinating pictures generated frank discussion about overcoming inadequacy, about dealing with extreme discomfort and danger, about failure and trying again and eventually succeeding. The ability to interact closely with a national figure normally seen only on television, was highly inspirational.

Day 2

Following early morning exercise on deck – for some! - and breakfast in a restaurant of choice, the morning was mainly taken up by another session with the adventurer, during which major ethical questions were raised and explored; eg two climbers, roped together, one slips over a precipice and his weight starts to drag the other towards the precipice – should the rope be cut so that only one of the climbers is lost? On arrival in Penang, Mr Khoo left the ship to return to Singapore to prepare for a third ascent of Everest.



Students from India and Japan

Teaching in the *best maritime classroom in the world!*



SMA Director Roland Tan & Rod Short with Japanese teachers and students

During the afternoon, while alongside at Georgetown, Penang and with other passengers ashore, the students had guided tours of the engine rooms, the bridge and the galleys. The machinery for driving and maneuvering the ship, for generating electricity, for making water and for dealing with waste was viewed and described in detail, often in response to questions from the students. During the bridge tour, a student asked if sextants were ever used on board and was told that they weren't, as the navigation was basically by electronic means. Why then, it was asked, should the subject celestial navigation, not an easy one for many, take up so much of the time of students studying to be bridge watchkeeping officers?

That evening with the ship again under way, motivational speaker Jeffrey Goh's presentation "Even Eagles Need a Push" also dealt with fundamental questions about living, self appreciation, vision and realizing one's potential, but was more within the context of everyday life and work, rather than the challenges of climbing Mount Everest or skiing to the poles! Mr Goh has the remarkable ability to hold the students' attention for an hour and a half - until midnight!

For many students living in crowded brightly lit cities, viewing the night sky while at sea is a new and fascinating experience. After Mr Goh's session, many of the students headed for the helipad to view the night sky. As often occurs in these latitudes, there was considerable cloud, however the constellation of Orion was seen.

Day 3

Superstar Virgo anchored off Patong in Phuket at dawn, for a 10 hour stay and the students are free to go ashore until



Adventurer Khoo Swee Chiow with Singapore students

1600 hours, accompanied by SMA staff. Seeing how a large cruise ship handled the disembarkation and embarkation of over 1000 people by ship's boats, as well as by company boats based in Patong, brought home the detailed organisation required to handle so many passengers, some elderly, many unfamiliar with small craft, with safety and efficiency.

That evening everyone, in uniforms or best clothes, participated in the cocktail party hosted by the Captain and senior officers, followed by the main 'fine-dining' dinner of the cruise, then the one hour show in the Lido Theatre and a group photograph. Later, the students attended another highly participative motivational workshop by Jeffrey Goh – "Live, Love and Learn to Leave a Lasting Legacy" - in which they responded to ethical issues and questions, despite the late hour! The day finished with supper at midnight.

Day 4

With Superstar Virgo heading for Singapore at 24 knots, the students had a 'free and easy' morning, during which they prepared skits for presentation after lunch. For this they were divided into eight groups. The skits were performed and judged, the winner a highly amusing skit contrasting 'fine dining' and 'unfine dining', stimulated by the dinner enjoyed the previous evening. This was followed by the presentation by Director Roland Tan of certificates and prizes, recognition of the inputs by all involved and the farewell dinner. Superstar Virgo berthed at the Singapore Cruise Terminal at 1900.

It was clear to all that the opportunity for maritime students from Asia to interact with a multi-national crew, including senior officers from Scandinavia, aboard a ship with over a thousand passenger from many countries, was an experience that brought home to the students the complexity of the whole operation, the efficiency, the interest and the heavy responsibility of a senior position on board.

The ending of the MEL "camp" on a high note was well justified. All involved, and particularly the 60 maritime students, had enjoyed an experience that will not only be long remembered but will also have contributed significantly to enhanced understanding of the maritime industry and to life aboard, albeit aboard a large and very comfortable passenger ship, as well as to meeting life's frequent challenges. Comments received indicated that all were aware that living and working aboard a bulk carrier or container ship would be considerably different! It was truly a 'maritime experiential learning' experience.



Motivational speaker Jeffrey Goh with Singapore students

11 March 2011

IMO Sends Open Letter to all Seafarers

Efthimios E Mitropoulos, Secretary-General of the International Maritime Organization (IMO) has reached out to seafarers in an open letter, distributed worldwide via shipping and seafarer organisations.

The letter reviews the achievements made under last year's World Maritime Day theme "2010: Year of the Seafarer", pointing to increased public awareness of seafarers and their work; the adoption of major amendments to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW Convention) and its associated Code; and the creation of an annual "Day of the Seafarer" – this year on Saturday 25 June.

It also re-assures seafarers that IMO's 2011 theme "Piracy: orchestrating the response", and its associated action plan, aim



to encourage a decisive and effective global response to piracy, and urges seafarers to play their role in implementing best management practices when sailing through piracy-infested areas.



SECRETÉIRE GÉNÉRAL

SECRETARY-GENERAL

SECRETARIO GENERAL

11 February 2011

Dear Seafarer,

In naming 2010 "The Year of the Seafarer", I expressed the hope that when, at the end of the year, we took stock of what we achieved, we would be able to say that 2010 did, indeed, make a difference to the lives of seafarers.

We had three main objectives:

- to increase awareness among the general public of the indispensable services you render to international seaborne trade, the world economy and society at large;
- to send a clear message to you that we recognize and appreciate your services; that we understand the extraordinary conditions and circumstances of your profession; that we do care about you; and that we do all that we can to look after and protect you when the circumstances of your life at sea so warrant; and
- to redouble our efforts at the regulatory level to create a better, safer and more secure world in which you can operate.

With regard to the first, it was most encouraging to see how many Governments, international organizations and industry bodies took the spirit of the event to heart and provided opportunities for publicizing the Year of the Seafarer through many conferences, seminars, workshops, award schemes, etc., all focusing on you and your all-too-often overlooked role in serving, daily, the citizens of the world.

I am well aware that the hardships you face today cannot be solved by a publicity campaign alone and that we still need to do more to inform the general public. But, I am hopeful that those who create, or perpetuate, the poor conditions under which some of you are forced to live and work will find it increasingly difficult to escape the glare of the spotlight that, prompted by the Year of the Seafarer, is now being shone upon them.

IMO Member Governments did much to endorse the second objective when, at the 2010 Manila Conference, they unanimously adopted a resolution, entitled “**Year of the Seafarer**”, expressing deep appreciation and gratitude to you for your unique contribution to international seaborne trade, the world economy and society as a whole. The adoption by the Conference of amendments to the STCW Convention and Code (the Manila Amendments) will set the international benchmark for the training and education of seafarers for many years to come. The success of the Conference was crowned by its decision to declare the day on which the Amendments were adopted, the **25th of June**, as the annual “**Day of the Seafarer**”, which will be celebrated for the first time this year – an event that, we hope, will maintain our efforts to raise awareness among the general public of the key role you play in today’s world.

During 2010 we also made considerable efforts to address the problem of piracy that has blighted the lives of many of you for too long. However, as the rising statistics so bleakly indicate, this remains a real and ever-present danger to shipping – and we are neither proud of, nor content, with the results achieved so far. And so it was with you very much in mind that the IMO Council decided that the 2011 World Maritime Day theme should be “**Piracy: orchestrating the response**”, with the aim of encouraging a decisive and effective global response to piracy. Our comprehensive action plan for the year and beyond was launched by the UN Secretary-General, Mr. Ban Ki-moon, at IMO Headquarters at the beginning of this month.

In conjunction with the shipping industry, seafaring representative organizations and other stakeholders, we aim to promote further co-operation between and among States, regions and organizations to reduce the risk of attacks on ships and seafarers through information-sharing; coordination of military and civil efforts, above and beyond the unprecedented degree of co-operation that has already characterized the international naval response; and development and implementation of regional initiatives.

On board ship, rigorous implementation of the relevant IMO Codes and guidelines and industry best management practice guidance on how to access the available naval protection and implement the preventive, evasive and defensive measures recommended by IMO and the industry will do much to reduce the risk of successful attacks. In this, each of you has a role to play and I urge you, together with your fellow seafarers, to play it consistently, persistently and effectively every time your ship sails through piracy-infested areas.

More needs to be done – of that we are clear – if the ultimate goal of consigning piracy to the realms of history is to be achieved. We hope that our choice of theme for 2011 and our anti-piracy action plan will provide an appropriate rallying point around which all those who can make a difference can focus their efforts.

With best wishes for calm seas, fair winds and a safe return home,



E.E. Mitropoulos
Secretary-General



14 March 2011, DNV press release

First 2-Stroke Gas Engine taking Quantum 1-Stroke Further

London: By introducing a new solution for LNG-fuelled ships, DNV and MAN Diesel & Turbo are taking the Quantum concept ship one stroke further. Both the machinery and the hull design and arrangement have been improved.

A year ago, DNV launched its container ship concept – Quantum. This concept ship was designed to stir up a debate about shipping innovation. MAN Diesel & Turbo responded very positively, and over the past few months the engine manufacturer and the class society have worked closely together to move the concept one step nearer to becoming an actual ship.

Now DNV is introducing the new Quantum 9000. This has been designed to be more efficient and environmentally friendly than existing ships without introducing major complications when the ship is to be built or operated.

One of its major improvements is related to the engine. MAN Diesel & Turbo has developed a gas-fuelled two-stroke ME-GI engine. In addition to having dual-fuel engines, Quantum 9000 achieves full fuel flexibility and at the same time meets the upcoming ECA requirements. The ship's energy efficiency is also better than that of conventional existing container ships.

Lars Ryberg Juliussen Senior Manager, MAN Diesel & Turbo, is proud of the results presented at a press briefing in London today:



© DNV/DNV

“By making simple modifications, we have achieved high fuel efficiency, high fuel flexibility and high reliability. The Quantum 9000 introduces LNG to the preferred container ship propulsion system and thus makes LNG more available to container ship owners,” he says.

In addition to the use of gas, the engine solution includes waste heat recovery to improve the energy efficiency and exhaust gas circulation to reduce the emissions.

A number of other improvements have been made possible by adopting a twin island arrangement, such as increased cargo capacity and reduced need for ballast water. Also the improved sightline from the bridge, which contributes to increasing the safety in operation, and the minimum fuel consumption, can be mentioned.

The ship's LNG fuel capacity will be similar to that needed to sail from East Asia to the east coast of the US – still without any loss of cargo space.

Eirik Byklum, DNV's Project Manager, introduced the first version of the Quantum concept vessel a year ago and has been in charge of its second phase too. “When we introduced this concept a year ago, we called it a concept ship. And it still is, but by improving the machinery as well as the hull design and arrangement, we have moved it one step closer to becoming a real ship.”

08 March 2011

Expansion of World-Wide Navigational Warning System into Arctic waters marked by IMO, WMO and IHO



Ceremony to celebrate the expansion of the World-Wide Navigational Warning System

On the first day of the 15th session of the IMO Sub-Committee on Radiocommunications, Search and Rescue, a ceremony took place to celebrate the expansion of the World-Wide Navigational Warning System (WWNWS) into Arctic waters.

It was attended by the Secretary-General of the World Meteorological Organization (WMO), Mr. Michel Jarraud, the President of the International Hydrographic Organization (IHO), Admiral Alexandros Maratos, and IMO Secretary-General, Mr. Efthimios E. Mitropoulos.

The expansion means that ships operating in the harsh Arctic environment can automatically receive vital information about navigational and meteorological hazards and other urgent information to shipping, via five new navigational areas (NAVAREAS) and meteorological areas (METAREAS), as delineated by IMO and WMO respectively.

Following their establishment, in June 2010, the five Arctic NAVAREAS/METAREAS are currently in an “Initial Operational

Capability” phase with a transition to “Full Operational Capability” expected in the coming June. IMO Secretary-General Mitropoulos heralded the expansion of WWNWS into Arctic waters as a very significant development, needed to address the increased risks to ships from a combination of expanding business activity in the inhospitable Arctic region and less predictable, more extreme, weather conditions. “The potential for accidents and for causing environmental harm through operational mishaps in the Arctic is rising, while the effectiveness of search and rescue services and clean-up resources is inevitably stretched to the limit.” he said.

“The opening up of the Arctic will be a double-edged sword. Depending on your perspective, it represents either a world of new business opportunities or, on the other hand, an unwelcome extension of the human footprint into areas still, at the moment, predominantly pristine. But I am confident that, balancing the two extremes and with measures such as those we inaugurate today, the pioneering venture in the new frontiers will be met with universal approval. Let us, therefore, work together to create the conditions that will allow the opportunities the Arctic presents to flourish in a framework of utter safety and environmental protection,” Mr. Mitropoulos said.

“Sea ice is projected to increasingly shrink under all scenarios and for some projections the Arctic late-summer sea ice would vanish almost entirely by the middle of the century, opening unprecedented challenges to maritime safety which were unpredictable just one generation ago,” Mr. Jarraud said.

“With the establishment of these NAVAREAS the world is fully provided with services to provide navigational and meteorological warnings to mariners. We can now say that the WWNWS that

started in the early 1970's is complete. A service which is not only very useful but vital to the safety of navigation and protection of the marine environment will be provided to mariners and vessels cruising within this environmentally sensitive Arctic region," added Admiral Maratos.

The world-wide navigational warning system (WWNWS) in the Arctic

The WWNWS was established by IMO, in collaboration with IHO, in the late 1970s, and the world's oceans were divided into 16 NAVAREAs, with one designated country in each area responsible for disseminating navigational information.

METAREAs, with identical limits, were also subsequently established. The need to expand this service into the Arctic area was brought to the attention of IMO in 2005, as Arctic waters were becoming increasingly accessible with less predictable, more extreme weather, adding up to increased risk and potential for accidents and environmental harm, thereby requiring accurate

early warning systems in place to maximize operational safety and minimize environmental damage.

In 2006, the COMSAR Sub-Committee established the joint IMO/IHO/WMO correspondence group on Arctic Maritime Safety Information services to take up this work in detail. COMSAR 12, in 2008, agreed that a common broadcast system for Maritime Safety Information (MSI) was required for the Arctic region. It also agreed that, until an Arctic satellite service provider under the Global Maritime Distress and Safety System (GMDSS) was available, high-frequency narrow-band direct printing was a viable alternative means of promulgation of MSI above the high latitude limits of Inmarsat coverage.

In 2009, the COMSAR Sub-Committee endorsed the recommendation of the correspondence group for live testing of the Arctic NAVAREA/METAREA operations to be held in 2009 and 2010, with a milestone goal of "Full Operational Status" being declared at COMSAR 15 in 2011, which has now been met.

Source: IMO

Action Plan to Promote the 2011 World Maritime Day theme

The main aims of the Action Plan are to:

- Increase pressure at the political level to secure the release of all hostages being held by pirates;
- review and improve the IMO guidelines to Administrations and seafarers and promote compliance with industry best management practices and the recommended preventive, evasive and defensive measures ships should follow;
- promote greater levels of support from, and coordination with, navies;
- promote anti-piracy coordination and co-operation procedures between and among States, regions, organizations and industry;
- assist States to build capacity in piracy-infested regions of the world, and elsewhere, to deter, interdict and bring to justice those who commit acts of piracy and armed robbery against ships; and
- provide care for those attacked or hijacked by pirates and for their families.

In carrying out the Action Plan, IMO and the international maritime community will seek to:

- Engage at the political level (including at the UN Security Council) to bring about a solution to the Somali problem and facilitate and expedite the release of hostages. Calling the world's attention to the unacceptable plight of the innocent victims of pirates – seafarers, in the main – and, by so doing, create a worldwide momentum that would eventually lead to their release;
- strengthen the protection of persons and ships sailing through piracy-infested areas by regularly reviewing and promulgating the IMO guidelines to Administrations and seafarers and making industry-developed best management practice guidance widely available; enabling ships' masters and officers to access any available naval protection; encouraging compliance with the recommended preventive, evasive and defensive measures; and promoting even greater levels of support from navies;
- promote co-operation between and among States, regions and organizations to reduce the risk of attacks on ships

through information-sharing; coordination of military and civil efforts; and development and implementation of regional initiatives, such as the Djibouti Code of Conduct;

- help build up the capacity of States, in piracy-infested regions of the world and elsewhere, to deter, interdict and bring to justice those who commit acts of piracy and armed robbery against ships, thereby enhancing maritime law enforcement and the safety and security of life at sea. And, while so doing, help tackle the root causes of piracy through the provision of assistance to States for the development of their maritime capacities and the protection of their maritime resources. And, in the case of Somalia, to contribute, in any way possible (including through the potential development of a coastal monitoring force) to the stability of the country, which in due course, will also have a beneficial impact on safety, security and stability; and
- work with all involved in the provision of social care and humanitarian support to ensure that they can deliver their services expeditiously to those attacked or hijacked by pirates and to their families.

In order to achieve the objectives of the Action Plan, during 2011:

1. IMO will continue to promote the suppression of piracy and armed robbery against ships in close co-operation with United Nations Headquarters, the United Nations Office on Drugs and Crime (UNODC), the United Nations Office of Legal Affairs, Division of Ocean Affairs and the Law of the Sea (UN DOALOS/OLA), the United Nations Department of Political Affairs, Political Office for Somalia (UNPOS/DPA), the World Food Programme (WFP), African Union (AU), the Contact Group on Piracy off the Coast of Somalia (CG PCS), European Union (EU), Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia – Information Sharing Centre (ReCAAP-ISC), the Combined Maritime Force (CMF), the European Union Naval Force (EUNAVFOR), the North Atlantic Treaty Organization (NATO) and Member States of the Organization;
2. in close co-operation with UNPOS/DPA, UNODC, Interpol and others, IMO will continue to support the "Kampala Process" in order to provide assistance to the Transitional Federal Government of Somalia and the regional authorities to develop the country's maritime sector and to meet international obligations, including possible development of a Coastal Monitoring Force;

3. pursuant to the development of an Integrated Coast Guard Function Network for West and Central African States, IMO, working in close co-operation with the Maritime Organization of West and Central Africa, UNODC, the Food and Agriculture Organization of the United Nations (FAO), the United Nations Security Council Counter Terrorism Committee Executive Directorate (UN CTED), the AU, the EU, Interpol, the Africa Partnership Station, the North Atlantic Coast Guards Forum, the Chiefs of European Navies, IMO Member States and the industry will implement a programme of multiagency, regional meetings to develop west and central African States' capacities to perform coast guard functions, including maritime law enforcement and suppression of piracy and armed robbery against ships, particularly in the Gulf of Guinea;
4. through the implementation of the Djibouti Code of Conduct and in co-operation with the Djibouti Code signatory States, IMO will pursue the establishment of a regional information sharing network through a network of National Focal Points (NFPs) in every Djibouti Code signatory State, reporting to each other via the agreed Information-Sharing Centres San'a'a, Mombasa and Dar Es Salaam to be commissioned during 2011;
5. in co-operation with the EU and the Government of Djibouti, IMO will pursue the development of the Djibouti Regional Training Centre (DRTC);
6. in close co-operation with UNODC, UN DOALOS/OLA and CGPCS Working Group 2, IMO will assist in the review of existing national legislation in the Djibouti Code of Conduct signatory States and other IMO Member States to ensure the

development of robust legal frameworks for suppressing piracy;

7. through the Assembly of IMO, the Maritime Safety, Legal and Facilitation Committees and the various technical Sub-Committees of the Organization, IMO will continue to promote the efforts of Member States, the Industry Group and the CGPCS to develop and enhance guidance on the prevention and suppression of acts of piracy and armed robbery against ships; best practices on training; post-piracy care of seafarers; investigation of offences; and other related issues;
8. IMO will continue improving the standard and availability of information on piracy incidents via the Organization's Global Integrated Shipping Information System (<http://gisis.imo.org>) and provide comprehensive piracy-related information on the IMO website, including information on previous and present IMO efforts to counter piracy;
9. IMO will continue to help build capacity, including through the delivery of conferences, seminars, workshops and training courses, to assist States and seafarers to participate energetically and effectively in the counter piracy effort; and
10. IMO will seek to enhance public awareness of the piracy issue through outreach programmes, media, social networks and the development of promotional materials.

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Painting a Black Picture of Shipping's Green Future

Maritime's carbon footprint increasing 300% by 2050

Growth in world trade could lead to maritime's carbon footprint increasing 300% by 2050.

Speaking to the Women's International Shipping & Trading Association, Martin Stopford, MD of Clarkson Research, said container shipping's current carbon footprint was only slightly less than that of Germany.

He said the container fleet had a capacity of 121 million kilowatts, while the electricity generating capacity of Germany was 139 million kilowatts.

"This shows that there is an awful lot under our [the industry's] control," Stopford said.

However, this is expected to increase, with China and emerging economies continuing to grow and become more reliant on shipping.

He pointed out that China's population was greater than any other nation's, but while Japan annually imported 7.5 tonnes of cargo per capita, Europe 6.2 tonnes, and North America 3.8 tonnes, China only imported 0.8 tons per capita. The total import figure for China was 1.4 billion tonnes.



If today's trends continued, he said, seaborne cargo would rise from 8 billion to 26 billion tonnes by 2050, which would result in a 300% increase in shipping's carbon footprint.

Currently the global shipping fleet stands at 1.3 billion dead weight tonnes, but this is likely to grow: the latest figures show that the fleet is growing at 7% per year.

Source: IFW

Experience Does Matter



The following link is to the Australian Channel 9 program of 11 February, which describes the successful response to a major emergency on board a Qantas A380. An engine explosion shortly after take-off from Singapore, caused serious collateral damage, with over sixty system failures. Many alarms sounded simultaneously. Control of the aircraft was severely limited, there were fuel leaks and a high risk of a crash.

In the video the Captain is in the simulator explaining how the sudden emergency was effectively managed and the aircraft safely landed without injury. That 'experience does matter' is clear.



Captain Fantastic <http://sixtyminutes.ninemsn.com.au/article.aspx?id=8209663>

Published: 14 March 11

Taking Note of Maritime Accident Wake-up Calls



The blast that destroyed the USD 365 million rig killed 11 workers

The recently published findings of the US National Commission on the BP *Deepwater Horizon* Oil Spill and Offshore Drilling make for sobering reading for all those concerned with maritime and offshore safety.

Deepwater Horizon, the drilling rig that suffered a blowout and subsequent explosion in the US Gulf in April 2010, has gone into the record books as the worst US oil spill and the second largest in history, after the deliberate polluting of the Arabian Gulf in the first Iraq war.

The blast that destroyed the USD 365 million rig killed 11 workers onboard and led to an uncontrolled escape of oil that lasted for 87 days. The best estimate for the amount of oil spilt is put at 4.9 million barrels, or about three times the volume lost when the 235,000 dwt Amoco Cadiz grounded on the coast of Brittany in 1978 and shed her entire cargo and 20 times the escape of oil from *Exxon Valdez* in 1989.

Amongst the key conclusions of the *Deepwater Horizon* National Commission are the following:

1. The event could have been prevented.
2. It was caused by mistakes made by the owner, operator and charterer of the rig and shows that the safety culture of the industry is in doubt.
3. Deepwater exploration and production pose risks for which neither the government nor industry are prepared.
4. Fundamental reform is needed to assure human safety and environmental protection.
5. Regulatory oversight of leasing, energy exploration and production needs reform in both structure and decision making.

While industry is questioning some of the National Commission's more detailed findings, there is no doubt that the ability of the principals to manage risk was inadequate in several key respects. There are going to be some major reforms as a result of this accident, and these reforms will entail significant costs. As part of the reform drive industry will find it advantageous to be preemptive and tidy up its own self-policing procedures as a top priority.

Deepwater Horizon holds important lessons for the maritime as well as the offshore sector. The blowout occurred at a time of unprecedented expansion of both the world shipping fleet and the body of seafarers manning this fleet. At the same time, the equipment and systems fitted onboard new ships are reaching new levels of technological sophistication.

In recent years, the shipping industry has also had to deal with the debilitating effects of the September 2008 credit crunch and the ensuing global economic recession. After plunging the depths in 2009, the freight markets managed something of a rebound in 2010, but whether this recovery can be sustained is now an issue of major concern.

Even before the onset of the recession maritime accidents, from ship losses and major occurrences to minor incidents and near misses, had begun to increase. Maritime insurance underwriters point out that there was a significantly higher frequency of serious losses in the period 2006-2009 than in any of the preceding years.

This worrying trend was attributed, initially, to the rapid expansion of the world fleet and its associated pool of seafarers. It has been exacerbated more recently by the decline in world trade in 2009, the depressed demand for shipping and the delivery of large numbers of vessels ordered at the peak of the economic boom.

A measure of the extent to which safety has slipped down the list of priorities is given by the providers of maritime training services. A number of training establishments have reported that bookings for their courses in 2010 ran at the lowest levels in a decade, despite the large influx of new seafarers to man the expanding fleet.

Maritime training standards in general have been advancing of late due to the revision of the Standards of Training Certification and Watchkeeping (STCW) Convention, technological advances with simulators and other training devices and techniques and the introduction of the concept of model courses more targeted to specific requirements.

Reflecting the nature of the hazards associated with the day-to-day operation of their vessels, the oil and gas shipping industries, in particular, have been to the fore in tightening their training regimes, not least in laying down core competency requirements for their officer grades. However, despite the availability of these standards, there are generally no specific enforcement measures in place to verify the achievement of a particular level of competence.

Moreover, while a relatively robust seafarer training regime has been developed and continues to be refined, there is a general lack of training and competency requirements for shoreside terminal staff. This gap has been recognised and, now that the work on updating and revising the maritime training regime has been completed, attention is being given to the need for a comparable set of formal standards for terminal operators.

The initiative comes not a moment too soon. Like the world ship fleet, the number of shore terminals has been proliferating. At the same time the pressure to turn ships around and minimise port time is as great as ever.

The gas shipping sector provides an example of how the current working environment can impact routine operations. In recent

years there have been a small number of incidents involving jettyside cargo transfer equipment which resulted in the release of minor volumes of cargo. Fortunately, the circumstances in these incidents were such that the repercussions were minor in nature but, had conditions been different, larger volumes of liquefied gases could have been released.

Investigations of the incidents revealed that the terminal staff were not aware of the full range of correct operational and maintenance requirements for the equipment in question.

In one incident it was found that the terminal's planned maintenance procedures for its cargo transfer system were incomplete because the manufacturers' specifications for maintenance and tests had not been fully documented and incorporated into site procedures. On another occasion a full set of checks had not been carried out prior to the start of operations, and an equipment fault had been allowed to develop over time that went unrecognised.

Maritime stakeholders in 2011 face increasingly complex day-to-day challenges, not least maintaining a healthy balance sheet in

the face of tightening environmental controls and operational risks of growing complexity. Despite the challenges, it is of paramount importance that the focus on safety as the No. 1 priority is continuously refreshed.

Maintaining an excellent safety record provides shipowners, particularly those involved in energy shipping, with their license to operate. Safe operations, in turn, depend on a combination of sound design, good operating procedures and practices, effective training and sound maintenance arrangements. The final, and essential, ingredient is a responsible management team with the ability to take the broad view on all aspects of safety.

Source: BIMCO, Mike Corkhill

Editor's Note: Mike Corkhill is a technical journalist and consultant specialising in oil, gas and chemical transport, including tanker shipping and chemical logistics. A qualified Naval Architect, he has written books on LNG, LPG, chemical and product tankers and is currently the Editor of both LNG World Shipping and LPG World Shipping.

Watchkeeper: Gigantism – a Trend or a Phase?

https://www.bimco.org/en/Members/News/2011/2011/03/02_Watchkeeper_Week_09.aspx

Last week saw something of an industry-wide gasp of surprise as A.P. Moller revealed its plans for its new fleet of 18,000 TEU "Triple-E" giant containerships which it will introduce in the Europe-Far East trades from 2013. Scale economies, which drive down the cost to the carrier for each of the boxes the vessels will carry, are accompanied by a range of technical measures which make the huge ships more sustainable. They may be blue, but these will be green giants.

Just one container wider than the current "E" class led by the *Emma Maersk*, whose true capacity kept people guessing for two years after the class was introduced, these monsters will be the longest ships yet built, yet are expected to use the range of "hub" ports already equipped with cranes able to handle their height and width. There is a great deal of clever design here.

Is the Maersk bid for supremacy the start of a trend that will see the same sort of "gigantism" spreading throughout the liner world? Or is it a bold move by a single giant company that has established a helpful accord with a technologically advanced shipbuilder, with prices reflecting a "volume discount" for a large series? There



Maersk Triple E Class

seems little doubt that the ships will be technologically advanced and will operate as well – if not better – than their predecessors. But will the bold move work, in that their success will depend upon the ability of the company to attract the business to fill each monster, and that of course depends to some extent on the vibrancy of the trade?

There might be a certain amount of concern about the ability of the main ports to handle such an increase of cargo in a single ship and to clear it without delay, and the arrangements necessary to shift the number of containers by road, rail and feedership. The "Triple-Es" must be seen as just one element in the supply chain, albeit one that is somewhat dominant!

Not everyone subscribes to the theory of such an increase in scale. There are questions that might be asked about the inflexibility of these huge ships, constrained by their dimensions to a very limited range of ports, at least for the foreseeable future. There are some major carriers which argue that the ability to deploy their ships interchangeably on a bigger range of routes makes smaller ships less of a gamble in today's volatile and uncertain world.

Some recall the great leap in crude oil carrier size which brought in a modest number of half-million tonners during the 1970s, only to see their scale economics fail, largely because of their great size and resultant lack of flexibility.

There again, Maersk might be cheered by the recent example of the cruise sector, with the evident success of the RCCL "Oasis" class giants, which are experiencing remarkably full utilisation since their introduction. If the business is there, the bigger the units, the better, might be the prevailing wisdom. If it is not ... then the bigger will be the embarrassment!

But let us hope that the giant ships will enjoy the sort of welcome that is reserved for truly eye-watering technological developments, which will reflect positively upon the shipping industry in general. "Good news" stories for shipping are always needed!

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

From the Merchant Navy blog 16 February

High Rewards, Potential High Risks

Asia has some of the world's most congested waters and ports fraught with hazards. Of the world's 10 busiest ports, no fewer than eight are located in Asia. In Hong Kong waters, there were 157 collisions, 36 groundings and 26 sinkings reported in 2009 alone. Adding to the challenges are the local seasonal weather conditions, with periods of dense fog reducing visibility to zero, torrential rain and typhoons which are increasing in number.



Captain Gustaf Grönberg, Star Cruises' Fleet Captain and Senior Vice President Marine Operations. Photo: Star Cruises

To succeed in Asia, cruise lines must understand the distinct challenges of operating in the region. Gustaf Grönberg, Star Cruises' Fleet Captain and Senior Vice President Marine Operations, says that cruise lines can dramatically reduce the risk of catastrophic human error by aggressively examining their company culture. Star Cruises has entered its 15th year without a navigational accident insurance claim.

Accidents do happen – and common themes figure in the majority of mishaps: a breakdown in communications, inexperienced



Star Cruises now includes a dedicated workstation on the bridge for the pilot, which enhances teamwork, communication and situation awareness. Photo: Star Cruises

seafarers on the bridge, and fatigue and stress. Captain Grönberg says there must be a 'total commitment' to safety -- from the executive suite to the surveyors in the field -- through teamwork, training, openness and professionalism.

Safety culture

"To have a safety culture, the cruise company must be a 'learning organization,' where people continuously strive to do things better, are encouraged to make suggestions for improvements and know that they will be listened to," Captain Grönberg underlines. Management's commitment must be so strong that safety is on everybody's mind throughout the organization. The above would be an ideal operation, but in reality we always have to find the right balance between commercial interest and safety and this can put the Captain under a lot of pressure when making important decisions.

The commitment of shore-side top management to safety is the most important thing. Any CEO can loudly make a public commitment to safety because today nothing less is accepted. But commitment means much more than a statement and requires follow up through the whole organization.

Captain Grönberg feels that the cruise industry has a lot to learn from the aviation industry. It is a fact that society does not accept shipping's approach to error management because we see Masters, Pilots, Chief Engineers and others being thrown in jail after being blamed for an accident. "The issue is not why an error occurred, but how it failed to be corrected," says Captain Grönberg. This is the approach taken by the aviation industry and it has resulted in big improvements in safety. Many people in the general public are aware of this approach in aviation and are now intolerant of 'one person error' accidents in other industries.

Error management

The risk of making an error can be reduced by having well trained, experienced and motivated mariners. However, even the most senior, experienced and conscientious mariner will eventually make a mistake. Managers need to build-in protections in their SOPs (Standard of Operating Procedures) against large-scale accidents due to a single error. Star Cruises has made efforts in its navigational procedures to put in place defences to prevent a single-person error resulting in a serious accident.

An honest error is acceptable, but not following SOPs is considered to be negligence and unacceptable. In a proper safety culture there must be a clear dividing line between acceptable and unacceptable behaviour. There must be strong encouragement to report near misses and own up to errors. The reporting systems should be simple to use, and the objective is to promote a continuous learning approach. People need to feel that they can report such incidents without fear of being blamed.

The foundation of SOPs is that even the most experienced and conscientious mariner is capable of making a serious error. SOPs should be developed to detect an error at an early stage and minimize its consequences. A good safety culture is achieved when people are following the SOPs because they want to – not because they have to. This can best be achieved when the SOPs are developed jointly with the people on board.

Does the ISM Code help to reduce errors?

No it does not – Captain Grönberg is clear about that. The purpose of the ISM Code is 'to minimize the scope for poor HUMAN DECISIONS that contribute directly or indirectly to a

casualty or pollution incident through the application of better management'. But decision making is a human process and the ISM Code does not address human factors at all! This is a serious deficiency. Reducing errors can only be achieved by learning why we make errors. Human Factors are now high on the training agenda.

Accident prevention is not simple and the ISM Code on its own will not make much difference. If it were simple, accidents would have disappeared from the industry years ago. Management must resist the temptation to write manuals and other safety regulations, issue a statement supporting the safety effort, and then await the day when accidents stop happening. There is a temptation to believe that what's in the binder matches the reality, but it is not always so.

If the management's commitment is high, the ISM Code will be properly followed and implemented. Necessary improvements for safer operation will continuously be made through feedback from the users with a positive impact on the accident rate.

Is a safety culture expensive?

Safety involves monetary costs, but a lack of investment in safety could be very costly and mean the end of the company. People on board should be made aware of the costs and consequences of an accident occurring, and commended and rewarded for maintaining an accident-free record. This ensures savings for the company on insurance premiums. Also all the costs of an accident are not covered by insurance. A safety culture is good business according to Captain Grönberg.

People are the most important component in any safety programme. Investment in training and offering good working conditions which motivate people and retain them are the best investment for the company. A high staff turnover is a serious threat to safety.

A reduction in insurance premiums and avoidance of costs associated with an accident not covered by insurance are the positive results. Investing in safety improves morale, resulting in the retention of officers and maintaining the good reputation of the company. The risk of accidents increases firstly if the ship is not manned by qualified and experienced people and secondly if sufficient funds are not made available for Maritime Resource Management training. There must be a commitment



SuperStar Virgo. Photo: Star Cruises

by management to providing motivation and encouragement to those serving on board.

Investments in safety

In 1998, Star Cruises established its own tailor made bridge simulator to mirror the shipboard bridge (cockpit configured) arrangement and equipment. At the same time, we completed the installations of sophisticated VDRs on board the ships and established a process to ensure that correct lessons are learned from an incident. The capability to record, retrieve and analyze real incidents and re-create the incidents in the simulator raised the effectiveness and impact of training to a new level.

The 'cornerstones' are the Pilot Co-Pilot system, closed loop communication and a strong emphasis on the working of the 'challenge and response system' on the part of all members of the bridge team. All our Captains and officers have been assessed for their ability to accept advice from subordinates. Also, in a multicultural working environment like the bridge, we actively address the issue of 'power distance' to ensure the operation of the 'challenge and response system'. All Captains and officers are audited on the full range of bridge equipment every time they return to the ship after a vacation. We never rely on only one person being able to conduct a specific task.

Some people argue that the simulator is not like 'real life' but when we make decisions we base them on our 'mental picture' we have at the time and not on 'reality'. On the ship we also use our 'mental picture' of the situation for decision making and this is no different from the simulator. Training in the use of various back-systems for critical operations is a vital part of the use of a simulator as well as testing challenging environmental situations in various ports, conducted together with the local pilots. A great advantage during MRM training is that theoretical lessons can instantly be practised 'in real life' which increases the quality and effectiveness of the training.

Each person is unique and cannot be programmed like a machine. The fact that some people make more mistakes than others has led to some high-risk industries, such as the airline, nuclear power and space industries and the military, etc., using psychological assessments to rule out error prone persons. Since 1997, Star Cruises has been conducting similar tests as a part of its recruitment process for deck & engine officers. All our ships are operating in some of the world's most congested waters every day, including Hong Kong and Singapore, and we know what is at stake. We want to recruit the best people and we see that the money spent on such a programme is very well spent.

We have to continue our efforts to reduce the incidence of human error and its consequences. These efforts need to incorporate developing knowledge with the aim of reducing opportunities for human error and preventing, detecting, and mitigating the effects of human error at every level, from ship designers to operators. This is an ongoing task. There is no doubt in my mind based on my experience in Star Cruises that it is worth the effort. With the benefit of hindsight, I can confidently state that, though there is much still to be done, progress has been made. We need to continue this effort, Captain Grönberg concludes.

Text: Gustaf Grönberg interviewed by Cruise Update DNV Publications No of 2011

Date: 2011-03-06

An Essay about my Professional Aims and Career Goals



Jai Gopal Acharya, Technical Director, STET Maritime Pte Ltd, Singapore

At present, I am working as a Technical Director with STET Maritime Pte Ltd (A company of ST Electronics).

Having obtained post graduate degree of MSc (Maritime Studies) recently from the world class University NTU (Singapore) and a graduate degree in Electrical Engineering with Honours from Birla Institute of Technology & Science Pilani [BITS Pilani] (India), a top class Institute of Technology & Science in India, affiliated with M.I.T (USA) and Certificate of Competency as First Class (Motor) Marine Engineer, I have accumulated thirty-three (33) long years of active experience in the Maritime Industry.

I have achieved the Life Fellowship of Institution of Engineers (FIE) India and the status of a Chartered Engineer.

Having sailed onboard a variety of merchant vessels in national and multi-national shipping companies, I obtained a COC (Certificate of Competency) as First Class (Motor) Marine Engineer and attained the position of Chief Engineer. My career in merchant shipping as a marine engineer officer gave me a great opportunity to gather a wealth of varied hands-on experience in shipboard operation.

Having a deep passion for higher studies, I am determined to go for further studies and pursue for research based PhD in maritime related safety, security and environmental challenges. My specific research interest is in **“Performance Optimization of PSC & FSI by integration of the human element in overall safety regime”** and “human factors affecting implementation of International

Safety Management (ISM) Code and International Ship and Port Security (ISPS) Code onboard ships and floating fix/mobile offshore projects.

I have already been approved for the enrolment as a PhD student at Australian Maritime College, University of Tasmania (AMC – UTAS) - (Australia) for the relevant maritime research topic - “Performance Optimization of Port State Control (PSC) and Flag State Inspections (FSI) by integration of the human element in overall safety regime”.

My professional aim after completing research work in maritime safety is to attain a position in the main stream of global maritime safety research consultants and to be a part of the team responsible for contributing towards the attainment of Singapore’s position as Global Maritime Knowledge Centre on/before the year 2022.

Having deep involvement in Maritime Surveys, Inspections, Audits and Consultancy, I have been given overall responsibility to oversee all technical matters of STET Maritime Pte Ltd.

I have been involved in conducting of Classification and Statutory Surveys including approval of ships’ drawings plan, assessing the damage stability and conduct of casualty incident investigation on behalf of IBS and ICS who are approved Recognized Organization (RO) for the Panama Maritime Authority.

Being a qualified and approved internal & external auditor, I have conducted ISM and ISPS audits on behalf of Panama Maritime Authority and other Flag States for many vessels and shipping companies. I am a qualified internal auditor for ISO 14001:2004.

I have been entrusted to lead and play pivotal role for initial and developing phase of the ship management business including Technical and Crew Management Business of STET Maritime and also involved in the sale, purchase and ship registration in Singapore and other flag states.

Prior to joining STET, I was involved in ship repairing and as a Ship repair manager of reputed companies in Singapore, I was involved in repairs supervision and had managed numerous ship repairing projects for marine and offshore industries. It helped me to achieve the precise understanding of ship building, preparation of plans and supervision of retrofitting and new installations.

As an entrepreneur in past years, I have a wide experience of business development in ship management and maritime services.

As an Individual Member of GlobalMET, I will have access to a network of elite academicians, researchers and professionals in maritime education, research and training which will enhance my capabilities in ongoing research work.

The direct interaction with fellow members of the GlobalNET and its allied organizations will enable me to share the precious knowledge and experience in fast changing maritime industry and its academia.

Blackout Recovery, Oil Pollution (control and containment), Safety and Emergency Equipments with Logbook Training (BROPSEEL©)

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Keywords

Marine Engineering Students, Training, Engine Room Simulator, Cargo Ship, Emergencies.

Abstr

Engine Room Simulator (ERS) is a powerful and the new generation teaching and training tool based on Information and communication technology (ICT) and used very effectively in the field of education.

This paper describes various modules using Engine Room Simulator (ERS) as a realistic teaching and training tool in education of an Under Graduate Marine Engineer student.

During the third (3rd) year of Four year Bachelor of Science in Marine Engineering (BSME) Course, the student is trained on the ERS in tackling and handling of various Disasters and Emergencies as a Marine Engineer Officer in the Engine Room of a sailing Cargo Ship in the Merchant Navy.

These are utilized as implementation examples in his higher education, thus preparing him for a future as a sailing Marine Engineer Officer. On the ERS, he or she experiences operation of different Electrical and Mechanical Marine Machineries involving Fault finding, rectification in dealing safely with Emergencies to gain correct knowledge, skills and confidence.

“1. INRODUCTION”

Perhaps catastrophe is the natural human environment, and even though we spend a good deal of energy trying to get away from it, we are programmed for survival amid catastrophe.

Germaine Greer

and

There are two big forces at work, external and internal. We have very little control over external forces such as tornadoes, earthquakes, floods, disasters, illness and pain. What really matters is the internal force. How do I respond to those disasters?

Leo Buscaglia

Combining the above two famous Quotations and adopting this wisdom as the basic concept in the training process of a Marine Engineer student for the modern day cargo ships in the Merchant Navy, it can be said for a person, that the more the student trains, learns and practices while on land, that much less problems the student will face when out at sea and more smoothly the student will sail and be able to work efficiently and competently on board the cargo ship.

This will result in being able to tackle all problems, rectify them, follow all regulations and thus succeed as a Marine Engineer.



Figure 1. Marine Engineering students being given briefing about the Engine Room Simulator (ERS).

The methodology of 'Blackout Recovery, Oil Pollution (control and containment), Safety and Emergency Equipment with Logbook training (BROPSEEL©)' is used to train Marine Engineering students, so that in future they can carry out an actual and a real-time autonomous operation of the Machineries and Engine Room Plant on a sailing motorized cargo vessel and effectively deal with any troubles, disasters and emergencies that they go through while sailing on the High Seas and be able to save Life, Environment and Property (ship and cargo).

“2. SPECIFICATIONS OF SOFTWARE AND HARDWARE”

The ERS consists of three consoles and one Main Switch Board. One console (with Twin Monitors) each is for: Ship Diesel Power Plant (SDPP), Ship Electrical Power Plant and Ship Auxiliary Machinery (SAM). Various conditions can be created and Defects can be introduced remotely from the Instructor Command and Control station into SDPP, SEPP and SAM consoles.

This enables the student/trainee to learn to carry out different operations, do Fault finding and then carry out trouble shooting with necessary rectification.

Following Hardware, Software, Items and other Equipment are used in BROPSEEL©,

1. Engine Room Simulator (ERS) – One set installed in a suitable sized room/hall with the appropriate internal décor. (Type ERS 4000, Burmeister and Wain (B&W) Main Diesel Engine 6S60MC, 16,680 BHP, 105 RPM, ERS Manufacturer: Transas Co. Ltd., DNV approved).
2. Close Circuit cameras-Two no's and Television Monitor/CCTV- One set.
3. One Projector and a Large size wall screen (size: 4 meters 6.0 meters)
4. Public Address system (One microphone, appropriate amplifier and Two speakers)
5. Instructor – One no. and holding Chief Engineer Certificate of Competency Marine Engineer Officer Class One (Motor)/ MEO Cl 1(m).
6. One undergraduate (3rd Year) Marine Engineer student, in Boiler Suit/Engine room overalls and Equipment: Protective Helmet (with Strap), One Pair of Ear Mufflers and Cotton Gloves, One Torch piece and a 6" Adjustable Spanner. (In a pair of socks only).
7. White board with White board markers and Wiper – One no. Each.
8. Four interconnected Telephone Instruments. One each for: ERS, ERS Instructor, Ship Handling Simulator and Ship Handling Simulator Instructor.

9. Two no's Life jackets and two no's helmets.
10. Emergency Light – One no. 11. One wall mounted Clock.
12. Three Chairs. 13. Portable Fire Extinguishers. (One each of Cabon Dioxide, Foam, Dry Chemical Powder/DCP type and two Hand-Held Cease Fire type).
14. Fluorescent/ Phosphorescent Stickers, Name Plates, Sign Boards and various posters, as follows:
 1. Full Mission Engine room Simulator. MAN B&W 6S60MC,
 2. Safety First. 3. Prevent FIRE 4. Prevent Pollution. 5. No Hot Work 6. Caution - 440 volts!. 7. Exit. 8. Entrance. 9. Restricted area. 10. No Smoking. 11. A Safe Worker is a Good Worker. 12. Better to be Safe than Sorry. 13. Wear Personal Protective Gear. 14. Fire Extinguishers. 15.+ First Aid Box.+ 16. Do not Open. 17. Do not Stop. 18. Men at Work. 19. Work in Progress. 20. Follow Safe Working Practices. 21. Instructor. 22. Telephone. 23. Do not Start 24. Think Safety 25. All Accidents must be reported.



Figure 2. BROPSEEL© - Diesel Generators being synchronized after Black out by a Marine Engineering student.

“3. SOUND EFFECTS”

High Decibel sound is produced in a variation that ranges from high amplitude of Banging, Thudding, Clanging etc, inter-mixed in various proportions with an equally high frequency of Howling, Screeching, Whining and Screaming etc. to name a few qualities of audio effect in an actual and a real operating Engine Room Plant normally on board of any Merchant Navy Cargo Ship/Vessel with the Main Propulsion from an Internal Combustion engine (Motor).

Such a sound effect with the virtue of an Integrated Circuit sound card and linked loudspeaker with the software is used in the Engine Room Simulator, the trainee/students wears the Personal Protective Equipment (PPE) as well as carrying a Hand Torch and Adjustable Spanner.

The volume of individual speakers is adjusted such, so as to enable sound of each individual piece of Machinery or Equipment to be made out as it starts to join the din of sound or stops operating.

Over and above this is the Public Address (PA) system on which/by which the Instructor (from the Instructor Control Room) guides, orders, cajoles, reprimands and/or instructs the Student while the student is inside the ERS. The Instructor also monitors the actions of the Students and Machinery by way of similar monitors in the Instructor Room and also watches the physical behavior of the student through two close circuit cameras which are fitted inside the ERS. He introduces various defects or machinery failures in order to make the Student experience all conditions.

In ERS, a student experiences something more real which can actually be seen and heard working and this is where the

knowledge the student has gained from the theoretical academic classroom studies with Books can be implemented in totality within a real and actual time frame conditions of operation on a Cargo Ship.



Figure 3. Marine Engineer student being assessed, guided and graded from Instructor's Command and Control Station with the help of audio-visual equipment”.

“4. MODULES”

The Marine Engineer student experiences and practises as per the various modules/topics listed in “Table 1. Modules consisting of the various Disasters, and Emergencies in a Cargo Ship's Engine Room, with the corrective action taken (for a few vital operations)”. Thus, the student is able to improve his response time and this method ensures that there is no panic or confusion and the correct procedure is followed without any accidental injury and loss of man or material.

The student also practises taking accurate readings as per the required watch hours and noting down in a LOG BOOK (including handing over and taking over of watches, as per the new STCW proposed).

Table 1. Modules consisting of the various Disasters, and Emergencies in a Cargo Ship's Engine Room, with the corrective action taken (for a few vital operations).

Sr. No.	TYPE OF EMERGENCY	CORRECTIVE ACTION
1	BLACK OUT	Emergency Generator starts and goes on load automatically, with in 45 Seconds ('SOLAS/Safety of Life at Sea' rules)/Start immediately
2	OIL POLLUTION	Use 'Shipboard Oil Pollution Emergency Plans (SOPEP)'
3a	EMERGENCY EQUIPMENT Emergency Generator requirement	To be started immediately
3b	Emergency Fire Pump requirement for FIRE FIGHTING	To be started immediately
3c	Foam system requirement for FIRE FIGHTING (oil fire)	To be started Immediately
3d	Carbon Dioxide release/ flooding requirement for FIRE FIGHTING	Activation only upon direct command of Ship Captain
3e	FLOODING	Pumping out of Sea Water to be started Immediately
3f	Boat Station, Fire station and all Engine Room Alarms	Respond Immediately
4.	Filling of LOG BOOK	Notes down accurate readings of machinery neatly



Figure 4. Engine Room Simulator in a Black Out condition

“5. CONCLUSION”

This methodology integrated with the Educational Technology in form of an Engine Room Simulator, ensures teaching and training of a Marine Engineering Student in the important areas and modules.

‘Blackout Recovery, Oil Pollution (control and containment), Safety and Emergency Equipment with Logbook training (BROPSEEL®)’ is an ideal methodology and teaching tool on which a Student can freely and fearlessly try out or make attempt to understand the basic as well as advanced concepts of Marine Engineering, as well as being able to correctly handle Emergency and Life saving equipment as well as successfully deal with Emergencies.

Eventually, teaching and training is imparted satisfactorily using a few other modules besides BROPSEEL® (which started on 12th October, 2007 and continueing till now in 2011) and more than 750 Indian Under Graduate Marine Engineer students of Tolani Maritime Institute (TMI), Induri, Pune have been trained so far. This Marine Engineering Student upon graduation joins the cargo ship in Merchant Navy as a confident and skilled Marine Engineer Officer.

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- [1] International Maritime Organization (IMO), Book Title, SOLAS (*International Convention for the safety of life at sea*).
- [2] International Maritime Organization (IMO), Book Title, MARPOL (*Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships, 1973, as amended*).
- [3] DG Shipping: Maritime Education, Training and Assessment (Meta) Manual Vol- I and 2., Publisher: Shroff.



Figure 5. The Engine Room Simulator

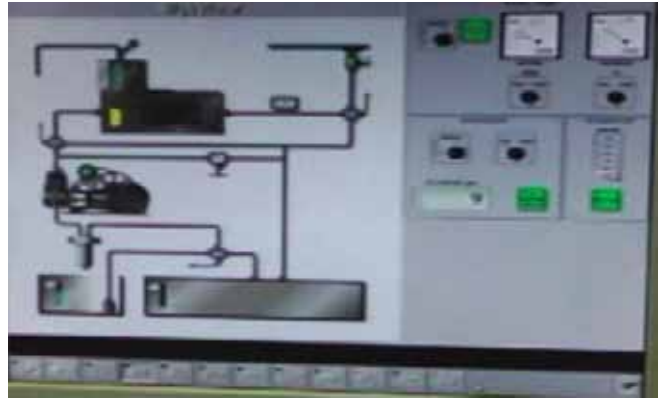


Figure 6. Engine Room MARPOL Equipment (Bilge Pump and Oily Water Separator)

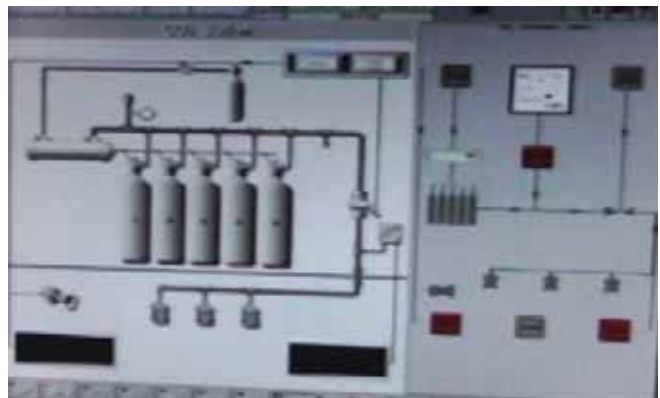


Figure 7. CO₂ Battery in Ship's CO₂ room



Figure 8. Trainees recording readings of Main Engine and Auxilliary M/c on Logbook



Figure 9. An illustration of a sheet from a typical Engine Room Logbook of a Ship

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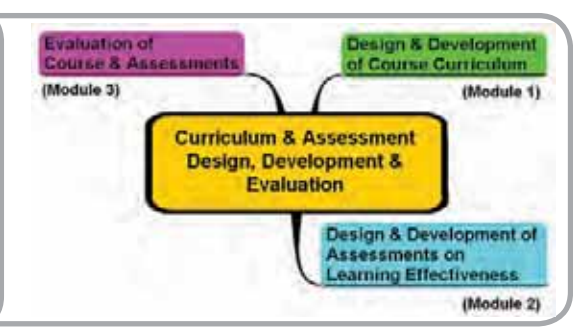
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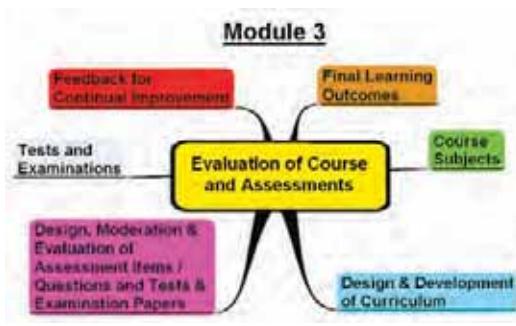
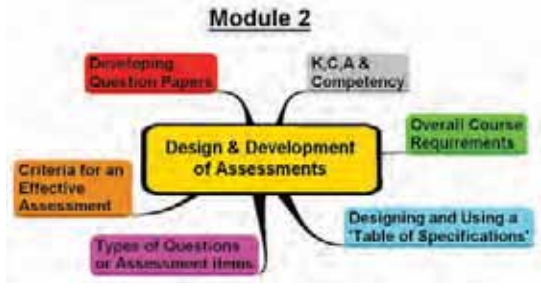
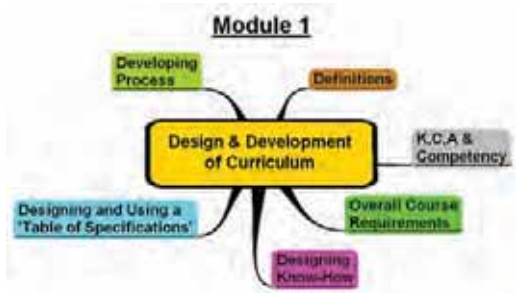
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The novice teacher will learn:
How to design assessments on learning effectiveness to match a given curriculum and then how to evaluate the course as a whole, and

The experienced teacher will learn:
How to identify gaps in the course design, between course objectives, curricula and assessments used, and then eliminate them to further improve the course



Q-CADDE Course



- Benefits of attending the course**
Participants will be able to:
- Design a curriculum showing how Graduates would meet the Course Objectives
 - Design & develop technically sound questions & assessment items
 - Design & develop question papers to match the Table of Specifications
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 - Judge the need & adequacy of a well designed course
 - Help students to learn 'How to Learn' using the syllabus provided



Course could be facilitated:

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- 2+2+1 days over 3 weeks



For further information write to:
subirmukerji@gmail.com

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Thanks to all who have contributed.
Articles submitted by Members
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for Issue No 5 which is due out in May.



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