

# NEWSLETTER

JULY – 2011

ISSUE NO. | 06 |

## TRAIN, TRAIN, RETRAIN, RETAIN!

### Inside this Issue

Safe Navigation in Crowded Waters	2
Launch of Indian Flagged Trading- Training Ship - a Global First	3
Mr. Koji Sekimizu	4
Safety, Security & Environmental Challenges for Floating Lng Facilities in Asia & Australia	5
Regional Training Centre in Djibouti – MOU Signed	8
International Day of the Seafarer at PNG Maritime College	9
New from MTS: Man Overboard	10
Maritime Director Comes Aboard	12
New Edition of Survival at Sea Available	13
GlobalMET - A Voice for Global Maritime Training	14
SkySails	15
"IMO: One Hundred Years After the Titanic" Selected as World Maritime Day Theme for 2012	16
World Oceans Day	17
How ShenNeng 1 Sends a Wake-up Call on Safety	18
Svenson Calls for Improved Competence Levels	20



## Safe Navigation in Crowded Waters

The photograph on the front page of this issue shows United Arab Shipping Company's 307 metre, 6921 teu, 2008 built, Marshall Islands flag 'Al Rawdah' hard and fast on Batu Berhanti Reef, in Indonesian waters on the southern side of Singapore Strait. The stranding occurred at 2200 on 20 June 2011 with the ship east bound towards the S China Sea.

Less than two nautical miles to the west, the similar sized 'Maersk Kendal' stranded on the well charted and marked Monggkok Sebarok Reef at 0715 on 16 September 2009, with the ship westbound towards Tanjong Palapas in Johor, to the west of Singapore.

Both ships are large, fitted with modern navigation aids and make frequent transits of Singapore Strait. Batu Berhanti and Monggkok Sebarok reefs are well charted and marked.

The UK's Marine Accident and Investigation Branch concluded that failure of bridge teamwork contributed to the grounding of 'Maersk Kendal'. It is too early for a report on the 'Al Rawdah' stranding, however the media did report the master as saying he was concentrating on the heavy traffic.

In May 2010, at 0600 a collision occurred in the Traffic Separation Scheme some 6 nautical miles east of Singapore between the Malaysian 105,000 dwt tanker 'Bunga Kelena 3' and the 25,500 dwt bulk carrier 'Waily', registered in St Vincent and the Grenadines. Some 2000 tonnes spilled from a damaged cargo tank on the tanker.

The photos on this page show 'Maersk Kendal', the damage to 'Bunga Kelena 3' and to 'Waily'.

Less than a month later the 106,000 dwt 'Bunga Kelana Dua', eastbound approaching Singapore Strait was involved in a collision with a Chinese bulk.

No doubt the MAIB's conclusion that failure of bridge teamwork contributed to the 'Maersk Kendal' grounding could also be applied to all of these incidents.

According to its Maritime and Port Authority, Singapore attracts some 140,000 ships annually – almost 400 per day. A 2009 study of the traffic in the Strait estimated 257,000 vessel transits and arrivals annually. The study also showed that, based on efficiency and safety indicators, the traffic level could be increased by 75%, assuming existing processes and operations continued and there were no advances in technology.

At its narrowest the Traffic Separation Scheme is only 2200 metres wide. The traffic is expected to double by 2024 and the number of interactions between vessels to increase to 15 every 10 miles. In addition to the very heavy traffic, heavy rain squalls, many background lights and smoke haze, add to the difficulties.

STCW 2010 provides for knowledge, understanding and proficiency in bridge resource management for navigation at the operational level and for knowledge and ability to apply effective resource management in controlling the operation of the ship and care for persons on board at the management level.

The issue for maritime education and training is how to best assist with ensuring the high levels of competence required for safely transiting choke points such as the Singapore Strait. As it is, a very small proportion of the number of vessels transiting these choke points are involved in collisions or strandings, but this does not justify the trainers sitting on their laurels, especially in view of the forecast increases in traffic.

An electronic revolution is having a profound impact on marine navigation. There will be greater dependence on electronic navigation in difficult navigational situations, Singapore Strait being a prime example. There is also likely to be more control from the shore.

Not enough is being done to address the implications for maritime education and training. There is serious need for a collective approach to study current and forecast needs, one that includes representatives of all parties involved in the safety of marine navigation, including the masters and watchkeepers who undertake the very heavy responsibility of navigating ships through these crowded and increasingly congested waters, and to adapt MET accordingly.

*Rod Short*





## Launch of Indian Flagged Trading-Training Ship - a Global First

Planned training at sea during periods of sea going service required for watch-keeping officer certificates of competency are of prime importance in the development of the skills, knowledge and experience, needed and mandated for officers, and acknowledged as an integral part of the overall programme of training.

However, lack of adequate training berths on ships, has been a major concern of the shipping industry, globally.

Quoting Resolution 13 of the 2010 Manila Conference on the STCW - Accommodation for trainees:

*"NOTING with concern the reported and anticipated shortage of qualified officers to effectively man and operate ships engaged in international trade,*

*RECOGNIZING the need for today's increasingly sophisticated ships to be entrusted to seafarers who are competent in all respects to operate them in a safe, secure, efficient and environmentally-sound manner,*

*RECOGNIZING ALSO that minimum mandatory seagoing service forms part of the requirements prescribed in the STCW Convention and Code for operational level and support level certification,*

*RECOGNIZING FURTHER that the lack of adequate accommodation for trainees on board ships constitutes a significant impediment to properly training them and subsequently retaining them at sea, thus adding to the aforementioned shortage,*

*URGES shipowners, ship managers and shipping companies to provide suitable accommodation for trainees on board their ships both existing and new."*

AMET, as the first maritime university of India, comes forward yet again, to alleviate this grave concern by launching its very own, first of its kind endeavor, a cruise-cum-training ship, m.v. "AMET MAJESTY".

This trading training ship will provide approved sea time training to 90 deck cadets and 120 engine cadets under an exclusive and planned training regime with dedicated instructors, assuring quality and effectiveness and complying with maritime administration requirements.



## Training Ship

AMET University has acquired a state of the art passenger-cum-RoRo cargo ship and renamed it "AMET Majesty". This ship is certified to carry 1150 passengers on international voyages. The Directorate General of Shipping, Government of India, has approved this ship in principle to train 90 Nautical Cadets and 120 Engineering Cadets for a period of 6 months of their required post sea training, mandatory to appear for the competency examination conducted by them.

## Training Advantages on this Ship

As the trainees will be individually trained by the dedicated Instructors and Training Officers on board the training ship, the trainees will have better chance for the development of the skills, knowledge and experience, needed and mandated for officers, and of doing well when they appear for their certificate of competency examinations. They will also be more confident to take up their responsibilities when they are subsequently employed as independent watch keepers in navigation and engineering.

The Indian maritime industry associations of INSA (Indian National Ship Owners Association), FOSMA (Foreign Owners Representatives and Ship Managers Association) and MASSA (Maritime Association of ShipOwners, ShipManagers and Agents) have evinced great interest and expressed full support for this novel venture. In as

much as freeing up their own training berths, they are also convinced of the high quality training that will be imparted on board through dedicated training instructors, facilities and environment.

## First Indian Flagged Cruise Ship

The potential of the tourism sector to stimulate economic and social development, thereby transforming economies, has been internationally acknowledged. Tourism has been placed on a priority platform in India with the governments at the centre and the states making directed efforts to exploit the tourism resources offered at the national and local level.

'Cruise Tourism' represents one such avenue, where far reaching developments have been witnessed worldwide with India having no claim to even a marginal positioning.

AMET University combines the training initiative with cruising, to bring to India, **its first ever**, Indian flagged cruise vessel to promote cruise tourism in India.

The Honourable Union Minister for Shipping of the country, Mr. G K Vasan, formally launched the vessel at Chennai Port on 8<sup>th</sup> June 2011 and lauded AMET's initiative, while promising all support to the venture.

The vessel commenced its commercial cruise operation on the 9<sup>th</sup> June 2011 with much popularity and fanfare.

## Mr. Koji Sekimizu

Secretary General Designate of IMO



Mr. Koji Sekimizu of Japan has been elected as the Secretary-General of the International Maritime Organization (IMO), with effect from January 1, 2012, for an initial term of four years.

The vote took place during the 106<sup>th</sup> session of the 40-Member strong IMO Council, which is meeting from

27 June to 1 July 2011. The decision of the Council will be submitted to the IMO Assembly, which meets for its 27<sup>th</sup> session from 21 to 30 November 2011, for approval.

Mr. Sekimizu, 58, is currently Director of IMO's Maritime Safety Division. Mr. Sekimizu studied marine engineering and naval architecture and joined the Ministry of Transport of Japan in 1977, working initially as a ship inspector and moving on to senior positions in both maritime safety and environment related positions within the Ministry. He began attending IMO meetings as part of the Japanese delegation in 1980 and joined the IMO Secretariat in 1989, initially as Technical Officer, Sub-Division for Technology, Maritime Safety Division, becoming Head, Technology

Section in 1992, then moving to become Senior Deputy Director, Marine Environment Division in 1997 and Director of that Division in 2000, before moving to his current position in 2004.

Congratulating the winner, IMO Secretary-General Mr. Efthimios E. Mitropoulos said he looked forward to "working closely with Mr. Sekimizu between now and the end of the year to introduce him to the current state of organizational affairs so that the transition of administration from me to him will be as smooth, harmonious and successful as possible."

"For him to succeed in the hugely demanding and heavy task the Council entrusted him with today, he will need all the understanding, support and co operation of the entire membership and the Secretariat to enable him to provide direction and steer the Organization prudently and wisely in the challenging times that lie ahead. While I have no doubt that the membership will provide all that I just suggested (as they did to me, over the last seven and a half years, for which I am ever so grateful), I can assure him that the Secretariat will stand by him to support him in any way possible and under all circumstances," Mr. Mitropoulos said.

Mr. Lee Sik Chai (Republic of Korea) Mr. Andreas Chrysostomou (Republic of Cyprus) Mr. Neil Frank Ferrer (Republic of the Philippines) Mr. Jeffrey Lantz (United States of America) Mr. Esteban Pacha Vicente (Kingdom of Spain)



## Safety, Security & Environmental Challenges for Floating LNG Facilities in Asia & Australia

### Presented by:

Jai Acharya

GlobalMET Individual Member

MSc (Maritime Studies); BE (Hons) EEE; FIE; CEng.

Technical Director, STET Maritime Pte Ltd

### Introduction

LNG is natural gas that has been cryogenically liquefied by an industrial proven process of cooling to  $-161^{\circ}\text{C}$ , significantly reducing the volume to 1/600 of the original volume for transportation. Thus a large quantity of the natural gas can be transported by ships loaded with the liquid form of the natural gas.

LNG is colourless, odourless, nontoxic and does not linger in the environment. When it is spilled on water or soil, it disperses rapidly in the air without leaving any residue.

### LNG Value Chain

The four major stages of the LNG value chain are self explanatory as stated below:

- Exploration/Production
- Liquefaction/Storage
- Shipping/Transshipping
- Regasification

### Overview of LNG Carriers

Specially designed ships are used to transport LNG to the receiving terminal ashore or offshore. Some of the special features of LNG ships include:

- Constructed of specialized materials and equipped with systems designed to safely store LNG at temperatures of  $-161^{\circ}\text{C}$ .
- Constructed with double hulls. This construction method not only increases the integrity of the hull system but also provides additional protection for the cargo tanks in the event of accidents.



- Coast Guard regulations and the "International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk" (International Gas Carrier Code) require that LNG ships meet a Type IIG standard, which is an intermediate-level safety design standard for hazardous cargoes that includes requirements on double-hull designs and materials, subdivision, damage stability, and cargo tank location.

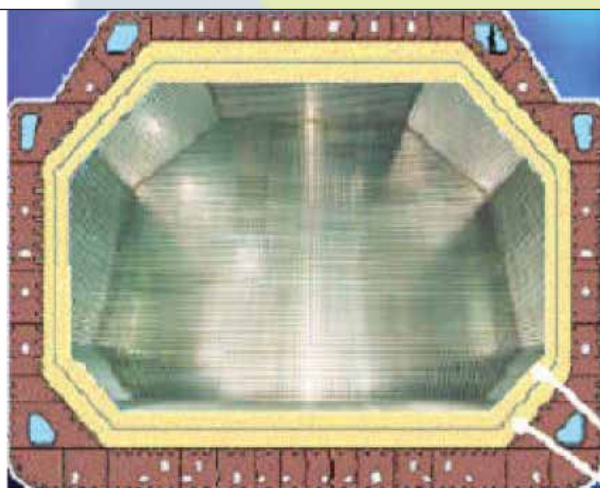
In general, LNG ships are classified according to the type of system that contains the LNG, Either a Moss system or a membrane/prismatic system, as shown below.

Each of below is a typical containment system for LNG Carriers.

The difference between the two designs is that the Moss system uses spheres built from aluminium that contain the LNG and have a structural integrity independent of the ship. For the membrane systems, the LNG is contained within thin, stainless steel membranes directly supported by the hull structure.



(i) Moss Spherical Design



(ii) Membrane/Prismatic Design

Figure 1

## Size and Capacity of Emerging LNG Carrier Designs

LNG carriers are being designed to carry as much as 265,000 m<sup>3</sup> of LNG. The new 215,000 m<sup>3</sup> membrane carriers are often referred to as Q-flex designs, and the 265,000 m<sup>3</sup> membrane carriers are often referred to as Q-max designs. Table 1 provides an overview of the general size and dimensions of current and emerging LNG carriers for both membrane and Moss-type cargo tank configurations.

There are several variations of the new larger capacity LNG carriers being developed. For example, several new LNG carriers are being designed to include regasification capabilities. With the advent of flexible pipeline and unloading buoy systems, gasification of LNG on the LNG carrier can now be conducted offshore and the natural gas pumped through a flexible riser system down to a sea floor natural gas pipeline and then to shore. This enables LNG unloading to occur many miles offshore. In some cases this can provide alternatives to on-shore import terminals, which are being considered by the U.S. Coast Guard in several LNG DeepWater Port (DWP) applications.

The regasification configured carriers are commonly referred to as Regasification LNG Carriers (RLNGCs). Figure (2) provides a drawing of a planned 205,000 m<sup>3</sup> LNG regasification carrier. The main difference between an RLNG carrier and an LNG carrier is that the front cargo storage tanks are often reduced in size to accommodate regasification equipment in the bow, which reduces overall LNG storage capacity. This change in the size of the forward cargo tank can be seen in Figure (2). The regasification equipment and buoy docking system reduce the average LNG cargo capacity by about 10,000 m<sup>3</sup> for both the 215,000 m<sup>3</sup> and the 265,000 m<sup>3</sup> membrane carriers. While an RLNG carrier contains less LNG, the overall structural design, size, and dimensions are very similar to the emerging large capacity LNG carrier designs, especially the membrane carriers noted in Table 1. Therefore, the results presented in this report are applicable to many of the large regasification LNG carriers being considered and proposed for use at many locations.

A second variation of emerging, large-capacity LNG carriers are vessels commonly called Storage and Regasification Vessels or SRV's. These vessels are designed to remain

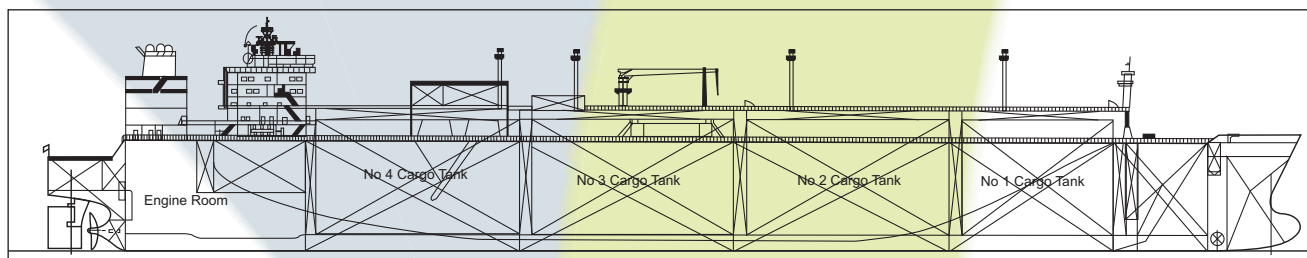
offshore and act as floating LNG terminal. They are connected through a buoy and riser system, similar to the RLNGC system discussed above, to a sea floor natural gas pipeline that goes shore. The SRV's store LNG supplied and transferred from smaller LNG carriers, regasify the LNG on-board, and then pump the natural gas through the buoy and flexible riser system down to a sea floor natural gas pipeline. While many proposed SRV designs are similar to the emerging large capacity LNG carrier designs already described, some SRV's have unique designs, configurations, and operational characteristics developed for specific sites and needs. Therefore, while the results presented in this report may be substantially applicable and representative of some SRV designs and configurations, they may not be applicable to others site-specific assessments will be required to determine if the results presented in this report would be applicable to a specific SRV.

From the data presented in Table (1); a couple of key points should be noted. One is that the new larger LNG carrier designs are becoming longer and wider, not necessarily deeper. Because of channel depth limitations in many ports, the new ships are designed to have similar drafts as current LNG carriers. The overall heights are slightly greater with the tank height above the waterline versus 15 m for current LNG carriers. Another point is that the volume of LNG per cargo tank is increasing from nominally 30,000 – 40,000 m<sup>3</sup> for the current fleet of carriers to as much as 53,000 m<sup>3</sup> for the larger LNG carriers. This means that spill rates and the spill volumes from the new large capacity LNG carriers could be larger.

The Asia Pacific region is undergoing fundamental changes affecting both the oil and gas sectors. The demand growth from China and India dominates the overall regional growth and is now affecting global oil prices. Meanwhile, the region is experiencing positive refining margins despite a fundamental capacity surplus, giving false signals to the refining sector and encouraging additional unneeded investments. The region has limited commercial or strategic storage and there are prospects now for the first time to encourage middle-east investments or commitment to usage for commercial storage in the region - particularly Singapore.

**Table 1 Emerging LNG Carrier Size and Capacity**

Class	Membrane Designs			
	145,000 m <sup>3</sup>	155,000 m <sup>3</sup>	215,000 m <sup>3</sup>	265,000 m <sup>3</sup>
Tanks	4	4	5	5
Length (m)	283	288	315	345
Width (m)	44	44	50	55
Draft (m)	11.4	11.5	12	12
Class	Moss Designs			
	138,000 m <sup>3</sup>	145,000 m <sup>3</sup>	200,000 m <sup>3</sup>	255,000 m <sup>3</sup>
Tanks	5	4	5	5
Length (m)	287	290	315	345
Width (m)	46	49	50	55
Draft (m)	11	11.4	12	12.5



**Figure 2 – Example of a 205,000 m³ Membrane Regasification LNG Carrier**

Singapore now has joined a growing list of LNG consumers and examining the options for LNG imports. The LNG business is also changing rapidly with new terms and conditions, unheard of in the past.

For Singapore there are many interesting opportunities available to both increase energy security and at the same time undertake projects which make commercial sense in storage and LNG sectors. But there is a clear need to plan the moves carefully and shepherd the processes to successful conclusions.

As the LNG production, shipping and storage are being developed at a rapid pace, the challenges for asset safety, security and environmental protection have to be well addressed with clear planning for risk management in each segment.

From the environment perspective, natural gas is the cleanest burning fossil fuel and significantly reduces particulate and carbon dioxide emission by 30-60% in comparison to heavier hydrocarbon fuels. When spilled on water or land, LNG will not mix with the water or soil or leave a residue, but evaporates and dissipates into the air. However, being a relatively new source of energy, new environmental challenges can not be ruled out.

Australian Administration of the environment regulatory regime, which is always pro-active on environmental issues, is managed under the co-operative arrangements of the Commonwealth and States and Northern Territory. Processes for environmental assessments are well established and provide for public consultation.

Similar established processes for environment assessment are developed and implemented by the EU, USA, Canada and Asian countries like Singapore, Malaysia, Korea, Japan, India, Indonesia, China and Middle-East countries like Qatar.

### Recurring Global LNG Activities

There have been several events/conferences/forums/workshops hosted on LNG globally. These events have brought together energy law-makers, experts/professionals from many countries to exchange ideas on the developing global LNG market and benchmarking on safety, security and environmental protection matters. In general, they served as a platform to explore issues such as:

- Global natural gas resources.
- The Size and scale of existing and proposed supply projects.

- Export and import terminal facilities.
- Global LNG transportation.
- New and growing markets.
- Elements of the LNG value chain.
- New and emerging technology applications.
- Safety and facility security.
- Opportunities and barriers to investment.

These gatherings have successfully identified concerns and issues that producing and consuming nations need to address so that a robust, effective and efficient global LNG market can continue to develop.

## AUSTRALIA

### LNG Safety and Security

LNG is a Cryogenic liquid and is not flammable or explosive in liquid form. When LNG is warmed up and turned back in to natural gas, it is flammable within a narrow range. If the mixture of natural gas with air contains less than 5% of natural gas, it can not burn because it is too dilute. If the mixture of natural gas and air contains more than 15% of natural gas, it can not burn because it is too rich. LNG has been safely handled for several years and the new technology has facilitated further measures to ensure safety onshore and offshore. Australia has been supplying LNG since 1989 and has an enviable record for safety and reliability. Over 2200 shipments have been successfully concluded without any safety incident.

### National Offshore Petroleum Safety Authority (NOPSA)

The NOPSA began its operations on 1<sup>st</sup> Jan 2005. It covers Commonwealth, State and Territory water and is accountable to Commonwealth, State and Northern Territory Ministers. The NOPSA aims to improve safety across the offshore petroleum industry and deliver best practice safety regulation for Australia.

### Australia's Safety Regime

The Australian offshore petroleum industry operates under safety case regime.

A safety case is a sophisticated, comprehensive and integrated risk management system in which operators accept responsibility for the ongoing management of safety. The regulator's key functions are to promote safety and health, and to inspect work places in the industry. Safety cases are central to this and form the rules by which the safe operation of the facility is governed.



### Australia's Maritime Security

From 2004, the Australian Government implemented a series of initiatives to further strengthen the offshore maritime security. The key initiatives included amendments to the Maritime Transport Security Act 2003 to include offshore facilities and establishment of the Border Protection Command.

Under the Maritime Transport and Offshore Facilities Security Act 2003, the offshore oil and gas facilities are required to have security plans based on a security risk management similar to those required by ship and port facilities.

The Border Protection Command was established on 31<sup>st</sup> March 2005 to link Australian Defence Force capabilities with existing civil maritime surveillance and regulatory roles that are undertaken or co-ordinated by the Australian Customs Service. The underlying principle for these initiatives is that the Australian Government has direct responsibility for terrorism prevention, interdiction and response in all offshore areas in Australia.

### ASIA

#### LNG Safety and Security

The Asian exports routes are susceptible to attacks or accidents. The majority of the oil and gas exports pass through the Strait of Hormuz, Malacca Straits and Suez Canal. The proposed/planned pipeline routes are also likely to be under threat of global terrorism.

Presently, 17 million barrel/day crude and products flow through the Strait of Hormuz and 11 million barrel/day through the Strait of Malacca, which are already subject to piracy. The situation is unlikely to improve as offshore LNG production, trade and shipping expands through busy maritime lanes of Asia.

The political uncertainty and risks can not be overlooked due to volatile situation in Iran, Iraq, Pakistan, Afghanistan, North Korea and other countries.

The lack of good governance and stable institutions make the situation even worse.

So far, there is no interdependent well defined safety net for gas (LNG). As the LNG stocks vary greatly worldwide, the level of dependence also varies greatly, thus the solutions for safety and security also vary. Due to globalization of the LNG market, the underground storage in North America and Europe could result in tensions in the Asian market.

The above study is a part of future opening in research on LNG exploration, production, liquefaction, regasification, shipment/transshipment, inshore/offshore storage and distribution.

It is quite interesting to go into the depths of maritime segments of LNG science and technology and formulate innovative ideas and solutions through dedicated research work on this subject.

### Regional Training Centre in Djibouti – MOU Signed

A Memorandum of Understanding (MOU) to allow the International Maritime Organization (IMO) to fund the building of a regional training centre in Djibouti, to promote the implementation of the Code of Conduct concerning the Repression of Piracy and Armed Robbery against Ships in the Western Indian Ocean and the Gulf of Aden (Djibouti Code of Conduct), was signed on Monday (30 May 2011), in Djibouti.

The MOU was signed by His Excellency Mr Mohamed Moussa Ibrahim Balala, Minister of Equipment and Transport, Republic of Djibouti, and Mr Koji Sekimizu, Director, Maritime Safety Division, IMO, at the opening ceremony of a high-level meeting, held to formulate a regional coordination process for maritime security training and to endorse the regional training centre.

After the signing ceremony, the meeting went on to adopt a resolution to establish the mission and objectives of the regional training centre in Djibouti; the coordination process for regional maritime training; and the process for the programming of regional training.

The training centre will be built using funds donated by Japan to the IMO Trust Fund for the implementation of the Djibouti Code of Conduct, which has been signed by 18 countries in the region.

The signing marks the end of a lengthy planning process and building work is expected to commence, on land donated by the Republic of Djibouti, by the end of June 2011.





## International Day of the Seafarer at

# PNG Maritime College

The PNG Maritime College held a dawn service for the IMO's International Day of the Seafarer on Saturday 25<sup>th</sup> June 2011 at the waterfront of the main College campus. The service was held a year after the Secretary General of the IMO announced that the 25<sup>th</sup> June would be celebrated as the International Day of the Seafarer, whilst officiating at the Diplomatic Conference in Manila, held to ratify the STCW 2010 Manila Amendments. The motion was passed as Resolution 19 of the Diplomatic Conference and following on from 2010 as being the IMO "Year of the Seafarer", every year will now have the International Day of the Seafarer on 25<sup>th</sup> June.

All the Students and many guests made the effort to rise early on Saturday morning to celebrate this special day. From 0500hrs a group of students began with a series of traditional songs and hymns as the crowd gathered by the waterfront. The whole student body were resplendent in their uniforms, which added a real sense of occasion to the event.

By 0600hrs everyone was gathered together and a student parade was held before the PNG Flag was raised to the singing of the PNG National Anthem. Reverend Dick Malphon of the Lutheran Church began the formal proceedings with an opening prayer. This was followed by a speech from the Principal, Mr Richard Coleman, who reminded the gathering of the sacrifices made by seafarers in the past and present. He made particular reference to unarmed seafarers serving on ships at times of war to keep populations nourished and supplied with essential goods. Also, he made reference to the seafarers held captive by acts of piracy, and those held unjustly in prison when accidents occur, often when no avoiding action could be taken. Lastly, Mr Coleman made reference to the daily sacrifices that all seafarers make to ensure that trade continues all



over the world and that countries and their peoples receive the goods and services that they may take for granted.

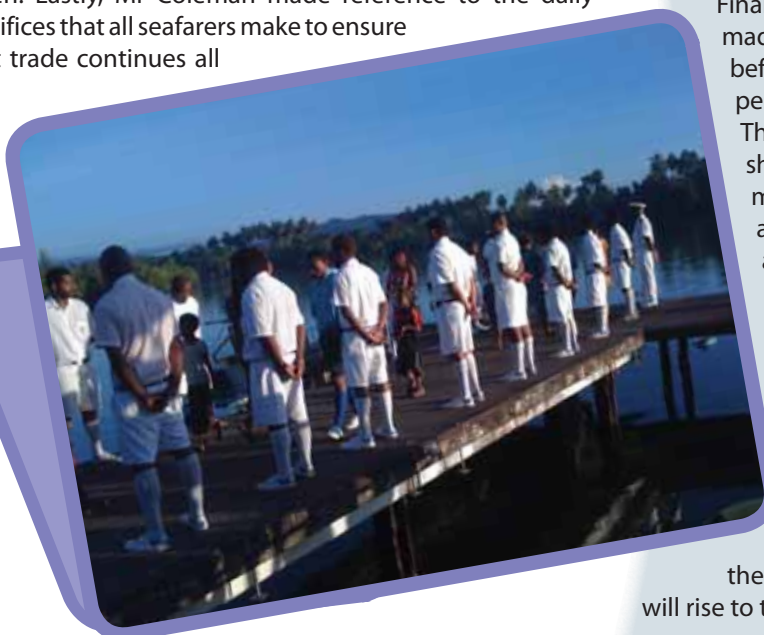
This speech was followed by another from a college student, Mr Clement Arisikera of the Solomon Islands, who gave a personal insight to the friends and families gathered on what it means to be a seafarer. How they miss their loved ones, and cherish the times they are together. Referring also to the families ashore, he related on their anxiety to have their bread winner and parent away for extended periods so that they may have more of life's essential things, such as a roof over their head, education for their children and food on the table every day. This speech was greatly appreciated by those gathered to celebrate this day.

There followed a hymn by some of the students with a very professional musical back up from other students on keyboards and guitars. The official ceremony ended with a closing prayer by Pastor Zachariah of the United Church, who made particular reference to the safety of seafarers at large.

Finally, an offering of wreaths and flowers were made into the waters surrounding the college, before flares were set off (having first gained permission from the Civil Aviation Authority). Then the student musicians and singers really showed off their talent by launching into modern PNG music, which everyone enjoyed and commented on how very talented they all were. Guests and students then mingled freely and were given a light breakfast and refreshments provided by the staff of the College Mess.

Everyone agreed it was an exceptionally well organised and presented ceremony, which was a tribute to the students and staff of the PNG Maritime College. In 2012 the students will be hard pressed to top the event held in 2011, but you can be sure they will rise to the challenge.

– from Richard Coleman



## New from MTS: Man Overboard

\*This is a real letter received by GlobalMET Member Maritime Training Services.  
Personal names and company identities have been changed to protect their privacy.

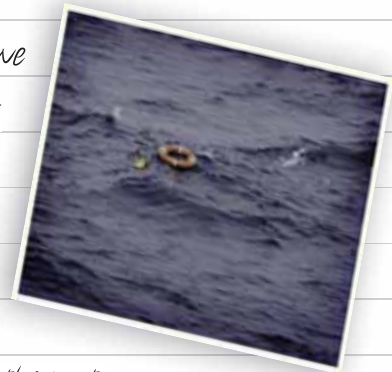
At Sea to Gibraltar

Dear Maritime Training Services:

I am A/B Torres a Filipino Seaman of M/V Olympia.

This is about the accident that happened to M/V Blue last February. We are one of the vessels who tried to rescue the crew of the M/V Blue.

When we arrived that night to the location of the accident we saw a man floating in his immersion or survival suit. Our first approach was a little bit far away, so we couldn't reach him or even throw a heaving line or life ring.



The second approach was lucky enough for him and he could grab one of the life rings which had a heaving line that we threw to him, but the weather or sea was rough and the vessel kept moving up and down.



We got him along the vessel, and everybody is shouting to him not to let go of the line, but he can't hold the line because he is in a survival suit and his hand couldn't hold the line to fast himself. He even tried to climb up the monkey ladder we have for him but can't hold the ladder because his hand is in a survival suit.

Then we saw him let go the line and try to take off the survival suit, but God when the big wave came and he was washed far away from us. We go around again and again but it is so frustrating we couldn't get near to him, then we came around again and we just saw only a survival suit.

I was crying why he took off the suit, God knows we tried to save him, he is our brother, he also has a family like us waiting for him at home.

*Until now I am very upset, I cannot forget the picture of that man who had in his hand the hope of surviving. If we had only the know-how or even a little more training maybe we could have saved him because our very best was not enough to save that man's life.*

Sir / Madam every week we are viewing safety films, isn't it time to have or include a rescue operation video tape so every seaman knows even a little knowledge how to rescue a man on the water, especially in bad weather, high freeboard and poor maneuver of a big vessel?



I am praying not to let this happen again in any part of this world, but who knows maybe next time my life is on the line and maybe yours too.

One thing more I remember is when that man is holding that line everybody is shouting maybe he got more confused. I suggest that only one person with a megaphone should give instructions to the survivor what to do!

*I am hoping this will attract your attention and thank you very much for your time reading this letter!*

Sincerely yours,  
A/B Torres



## Maritime Director Comes Aboard

Mark Gooderham has left the shores of Vanuatu to embark on a new voyage as the Maritime Director at Challenger Institute of Technology, a GlobalMET Member in Fremantle, Western Australia.

Challenger appointed Mark Gooderham earlier this year after an intensive international recruitment process.

Mr Gooderham commenced at Challenger in March following a very successful tenure as CEO of the Vanuatu Maritime College.

"In Vanuatu I was mainly involved in training domestic seafarers and fishing communities, whereas Challenger trains both domestic and international seafarers," Mr Gooderham said.

Mr Gooderham has extensive maritime experience, having spent a number of years in maritime education in the UK and New Zealand and has been employed as a senior officer on various international ships.

"I was also involved in the national formulation of the Foundation Degree programme in Nautical Studies across the UK, a programme that has seen a large increase in the quality of maritime trainees in the UK."

"This experience will help me to examine the present relationships with industry and hopefully also forge new links in order to help address the skills shortages present in so many areas the Centre covers."

Mr Gooderham is passionate about maritime training and is enthusiastic in his praise of Challenger Institute.

**"Challenger's maritime training in Fremantle has many strengths - close industry contacts across the range of courses offered, industry qualified lecturers, high standard training facilities, including a fleet of vessels, simulators and various well equipped workshops and laboratories," he said.**

"These comprehensive facilities have helped to make the multi award-winning marine tourism course an industry leader, with graduates finding employment in many areas of marine tourism, such as diving or tour guiding.

### There is an enormous demand for seagoing and marine professionals

There is an enormous demand for seagoing and marine professionals to service the State's burgeoning offshore oil



and gas industry as well as the hundreds of tankers and bulk carriers that export WA's iron ore and other minerals. There has been a dire maritime skills shortage for many years, but the increased mining activity in the west since the global financial crisis has made these shortages even more acute.

Challenger Institute is the only educational institution in the State to offer maritime courses for certificates of competency at international levels. At present, about 2000 students attend the maritime facility every year.

**Challenger Institute: great careers... excellent prospects**

## New Edition of Survival at Sea Available

AMSA has updated the publication to include new technologies, methods and survival advices

AMSA Chief Executive Officer Graham Peachey launched the new edition of *Survival at Sea* at the Great Barrier Reef International Marine College, Cairns.

Under the International Convention on Safety of Life at Sea, or SOLAS, all ships over 500 gross tonnes are required to have survival instructions such as *Survival at Sea* in the recreation rooms, crew cabins, lifeboats and liferafts. In Australia, this is implemented by Marine Orders Part 25, which also requires Australian cargo ships less than 500 gross tonnes to carry the manual.

In launching the new edition, Mr Peachey explained how the manual is applicable to all users of the sea.

"*Survival at Sea* is not purely for large vessels, but relevant to all users of the ocean – be they commercial or recreational.

"It is written in simple, practical language and provides important information on the use of life-saving equipment and practical survival techniques, where circumstances may require resourcefulness and knowledge to survive at sea until help arrives," Mr Peachey said.

The book was launched as part of the Fourth Pacific Regional Maritime Search and Rescue workshop.

The first edition of *Survival at Sea* was published in 1978 and this revised publication is the sixth edition. AMSA officers have updated the publication to include new technologies, methods and survival advice.

AMSA would like to thank the Australian Maritime College for undertaking an independent review of the new edition to ensure it contains the most up-to-date and relevant information.



In addition, AMSA would like to thank the Great Barrier Reef International Marine College for their involvement in the workshop and book launch, and the opportunity to tour their state-of-the-art facilities.

The sixth edition of *Survival at Sea* is available for purchase from all AMSA offices.

Source: AMSA

Tags: Survival at Sea, AMSA



## GlobalMET – A Voice for Global Maritime Training

This article was published on Baird Maritime's site  
<http://www.bairdmaritime.com> on 6 June 2011



From its beginnings as an Asia Pacific-based regional association of marine education and training (MET) institutions, GlobalMET has spread worldwide, and is building a collective “voice” for maritime education and training for interacting with industry peak bodies.

GlobalMET wants to involve the MET providers themselves in establishing global standards of education and training and associated certification, in order to keep up with developments in this rapidly changing industry and bring together a number of educational traditions from across the globe.

### GlobalMET – A History

The initiative to form an Asia Pacific regional association of marine education and training institutions grew out of a series of informal gatherings, initiated by the meeting of heads of a number of institutions in the Asia Pacific region, convened and hosted by the Australian Maritime College in 1989. Four meetings followed: at Dalian Maritime University in China, Fiji Institute of Technology in Suva, Far Eastern State Maritime Academy in Vladivostok and at the New Zealand Maritime School in Auckland. The Secretary General of the International Maritime Organisation expressed strong support and senior IMO officials attended the meetings.

At the Auckland meeting in December 1995, it was unanimously resolved to establish an Asia Pacific regional association. Consequently, representatives of some 18 maritime education and training institutions in Australia, China, Hong Kong, Japan, Papua New Guinea, New Zealand, the Philippines, Russia and Singapore met in the Hong Kong Polytechnic University in September 1996 and inaugurated the Association of Maritime Education and Training Institutions in Asia Pacific (AMETIAP).

In addition to the support from IMO, support for the initiative also came from the Hong Kong Shipowners' Association and the Hong Kong maritime unions.

In December 2002, GlobalMET was incorporated in Australia as AMETIAP (Global) with the registered office at the Australian Maritime College.

The name Global Maritime Education and Training Association, with the working name GlobalMET and a new logo, were adopted in 2006, to reflect the growing global role with more members based outside the Asia Pacific region. In February 2007, the registered name in Australia was changed to GlobalMET.

In June 2008, at its 100<sup>th</sup> Session, the IMO Council approved GlobalMET's application for NGO Consultancy Status, and this was endorsed by the IMO Assembly at its meeting in November 2009.

MET providers are now also able to have input into working and correspondence groups such as the current Correspondence Group on e-Navigation led by Norway and which encompasses the training associated with the e-navigation revolution.

GlobalMET now has over 100 members in 35 countries.

### Objectives

The establishment of GlobalMET arose from the participants' desire to support the aims and objectives of IMO for “safer ships and cleaner oceans” and recognition of the vital importance of maritime education and training in fulfilling the needs of expanding trade and economic growth, and the urgent need for collective efforts in maritime education and training to promote greater safety at sea and protection of the marine environment.

GlobalMET's objectives are to:

- Provide a forum for the exchange of views among members;
- Foster, develop and maintain close cooperation between and among members on matters relating to maritime education and training including maritime research and development and other matters of mutual and/or collective interest;
- Extend assistance consistent with its policies and capabilities to any member upon the latter's request;
- Formulate a common stand on issues of interest related to maritime education, training, research and development;
- Improve, or assist in improving, the services provided by members through the efficient and economic utilisation of resources;
- Represent the general membership in its collective dealings with regional and international organisations;
- Acquire, collate, process and disseminate relevant data and material of common interest to all members.

“Efficient, safe, clean, secure shipping is absolutely critical to the world economy and to world peace,” explained Rod Short, Executive Secretary of GlobalMET. “Maritime transport handles over 90 percent of international trade. The manning of some 45,000 ships engaged in international trade is done by less than one and a half million seafarers. So much is owed to so few!”

“The trend is increasingly to recruit relatively low cost labour from developing countries. The industry is a leader in the globalisation of its employment. Crews can be comprised of people from several cultures, with very different educational backgrounds. There is serious need



for a more effective, globally recognised quality system of education, training and certification that meets the needs of employees and accords with the needs of a rapidly changing and fundamentally important industry. The educators themselves must be fully involved in identifying the needs and building appropriate responses. GlobalMET, as a global network, is in a position to bring a collective approach on the part of the MET providers.

"With increased awareness of the need for improvements in MET, the growing strength of the network and more effective marketing of the benefits of membership, the number of members can be significantly increased, the aim being to eventually include the large majority of all MET institutions. When that stage is reached, GlobalMET can be a true 'voice' for MET."



Cargill has signed a contract with the Greek shipping Anbros Maritime SA (Anbros) on the installation of the world's largest kite on its bulk Aghia Marina. The Aghia Marina transporting agricultural and industrial raw materials. The 170 meter long ship was built in 1994, has a cruising speed of up to 14 knots and can accommodate a cargo of 28,500 tons. Thus, it is the largest cargo ship, which is developed by using the SkySails GmbH (SkySails) wind propulsion technology.

Cargill announced last February that it has signed a supply agreement with SkySails, which aims to reduce greenhouse gas emissions in the shipping industry through the use of wind energy. The Hamburg company SkySails has developed an innovative, patented technology that produces using a large kite flying in front of the ship so much power that is consumed in ideal wind conditions up to 35 percent less fuel.



"We are delighted to work with Anbros together and announce the Aghia Marina as the largest cargo ship with a SkySails propulsion can be," said Roger Janson, director of the maritime transport sector at Cargill. "As one of the world's largest shippers of bulk cargo, we take our commitment to environmental responsibility very seriously and actively looking for ways to improve the industry standards in various fields. We have for many years an excellent relationship with Anbros and are pleased that they recognize the potential of this technology both from an ecological as well as from an economic perspective."

According to the agreement 320 m<sup>2</sup> big kite in the first quarter of 2012 will be installed on the Aghia Marina and several weeks later to be fully operational. Anbros has joined Cargill and SkySails in the development and testing of the technology.

Over the next five years, the SkySails system on the Aghia Marina, Cargill has chartered long term, is used. SkySails will train the crew of Aghia Marina in the handling and operation of the towing kite propulsion. The SkySails towing kite is connected by a rope to the ship and flies at a height between 100 and 420 m characters in the form of an "8". It is controlled via a control cable automatically by computer, so that the wind is

"Anbros Maritime is proud to sign the contract with Cargill and SkySails, with the common aim to reduce the use of wind energy, greenhouse gas emissions and bunker costs in shipping," said George J. Angelakis, managing director of Anbros."

## “IMO: One Hundred Years After the Titanic” Selected as World Maritime Day Theme for 2012

**Council:** 106<sup>th</sup> Session, 27 June to 1 July 2011

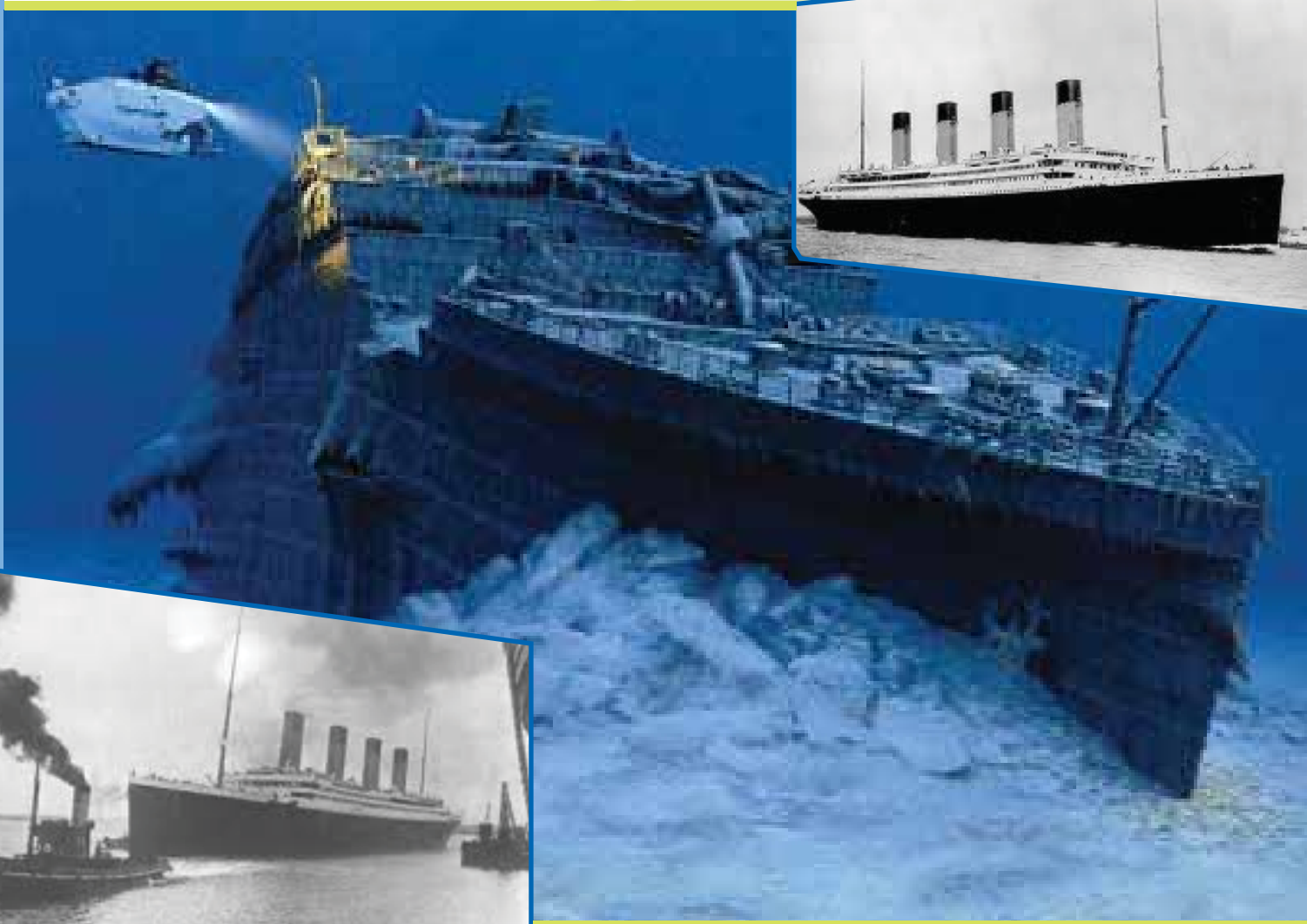
The IMO Council has endorsed a proposal by IMO Secretary-General Efthimios Mitropoulos to adopt “IMO: One hundred years after the Titanic” as the World Maritime Day theme for 2012.

“The time has come for us to return to this Organization’s roots and *raison d’être*, i.e. safety of life at sea,” Mr. Mitropoulos said.

One of the consequences of the sinking, in 1912, of the Titanic, in which 1,503 people lost their lives, was the adoption, two years later, of the first International Convention for the Safety of Life at Sea (the SOLAS Convention). The 1914 version of the Convention was gradually superseded, respectively, by SOLAS 1929, SOLAS 1948, SOLAS 1960 (the first adopted under the auspices of IMO, then known as IMCO) and SOLAS 1974. SOLAS 1974 is still in force today, amended and updated many times.

Mr. Mitropoulos said the selection of the theme proposed would provide an opportunity to:

- take stock of improvements in maritime safety during the 100 years since the sinking of the Titanic;
- pay tribute to the memory of those, who lost their lives in the freezing waters of the North Atlantic on that fatal night of 14 April 1912;
- highlight that the sacrifice of so many of the Titanic (passengers and crew) has not gone in vain;
- examine whether the lessons drawn from amongst the most costly (in human lives lost) accidents of the last 100 years have been learnt to the full;
- examine the safety record of shipping and identify those areas that have contributed the most to its improvement over the years;
- identify the most contributory factors (systems, concepts, mechanisms, etc) in the quest for ever-enhanced safety in shipping;
- examine which areas, within the overall spectrum of maritime safety (constructional, operational, cargo, human element, etc.), should be given priority consideration in the years to come; and
- pay tribute to all those who, in the course of the 100 years, have contributed to improvements in maritime safety.



## World Oceans Day

World Oceans Day has been celebrated on June 8<sup>th</sup> since its proposal at the 1992 Earth Summit in Brazil. Although it has been unofficially celebrated since 1992, it was only in 2008 that the United Nations recognized the day dedicated to the honor, integrity, and importance of our oceans.

UN Secretary-General Ban Ki-moon called on all governments and people around the world to play their part in ensuring the protection of oceans for the future generations. He released a statement in which he outlined the severe challenges today's oceans face, from depleted fishery resources, the impacts of climate change, deterioration of the marine environment, the decreasing labor conditions for seafarers, and what he referred to as an increasingly important issue of migration by sea.

Irina Bokova, Director-General of the UN Educational, urges that we must change our position of acquiring knowledge of oceans for exploitive purposes, to a better understanding of how to manage and protect the important ecosystems our oceans are home to.

### Things to consider after the observance of World Oceans Day:

#### 1. Stay informed – think blue

Learn what the issues are, keep up to date with them, take time to think about them, and how they might affect you.

#### 2. Feel blue

Enjoy the ocean. Walk barefoot on the beach. Take your children to the beach. Go for a swim. Learn to surf.

#### 3. Eat blue

Only buy or order sustainable seafood, and urge your seafood restaurant to do the same. Always say no to shark fin soup.

#### 4. Be a blue wise consumer

Think about how your purchases affect the oceans. Buy environmentally friendly products so you don't pollute and poison the oceans with chemicals.

#### 5. Respect our seas and their inhabitants

Practice responsible diving. Observe boating rules and watch out for marine life.

#### 6. Don't litter

Take home your garbage, pick up litter, don't drop cigarette butts (they are toxic to fish and are not biodegradable) and don't leave fishing lines behind, they strangle marine life.

#### 7. Get involved and make a difference

Remember the story of the starfish – taking the time to put one starfish back in the sea makes a difference to that starfish. Plan your own save our seas campaigns.

#### 8. Rethink the shark

Change your perceptions about sharks. There are over 400 species of sharks and they all need your help.

*(Tips brought to you by Carnival Cruise Lines)*



**5**  
oceans



## How ShenNeng 1 Sends a Wake-up Call on Safety

Merchant Navy blog 4 June

**A large part of the maritime industry operates on the assumption that those who work on ships do not need sleep like the rest of humanity**

**THE maritime industry is renowned for its obstinate adherence to tradition and its folklore is rich in stories of the hardships suffered by those who go down to the sea in ships. That tradition is alive and well today but it is incidents such as the grounding of *ShenNeng 1* on Australia's Great Barrier Reef that bring that harsh reality to life.**

The 1993-built, 69,110 dwt bulk carrier *ShenNeng 1* ran aground on what is a World Heritage area with a particularly sensitive ecosystem. The hull was seriously damaged by the grounding, with the engine room and six water ballast and fuel oil tanks being breached, resulting in a small amount of pollution. It took nine days to refloat the vessel. And the accident left a hole in the reef 3 km long, which could take 20 years to recover.

The investigation into the grounding by the Australian Transport Safety Bureau revealed that the vessel's chief mate, who was on watch at the time, had two-and-a-half hours of broken sleep during the 38 hours preceding the accident.

The human body is designed to function optimally on a cycle of 16 hours' wakefulness and eight hours of sleep. More than 4000 pieces of research validate the degradation of human performance after 18 hours of wakefulness, yet a large part of the maritime industry continues to operate on the assumption that those who work on ships are somehow immune to the necessities of life. Those people, it seems, do not need sleep like the rest of humanity. They can just keep working.

The ATSB investigation showed that the chief mate woke at 0300 hours on the morning of April 3, 2010, to take his station for the vessel's pilotage. After the vessel berthed at 0720 hours, he met relevant shore personnel and loading began an hour later. He remained on duty, supervising the loading and de-ballasting throughout the day, grabbing a meal when he could, and checking the ship's stability.

At 0100 hours the following morning he left the second mate in charge and went to bed. He was woken two hours later when a surveyor came on board and remained awake to oversee the completion of loading and the necessary paperwork formalities before the ship departed at 1100 hours. The pilot disembarked two hours later and the chief mate managed to grab another 30 minutes sleep before going on his fateful watch at 1600 hours.

In what other industry would persons who are so obviously sleep deprived be put in a position to take responsibility for the management and safety of high value assets that have the potential to cause unimaginable damage and put at risk the lives of others?

This is not an isolated case. The industry is plagued with similar stories. The reality is that most get away with it. It is only when an accident such as *ShenNeng 1* occurs that we get a glimpse of the tip of the iceberg.

Pilots are in the almost unique position of being able to witness the operation of ships when under way. I talk to colleagues around the world and the story is always similar. The industry is rife with accounts of seafarers who, because of the ships' schedules, operations or crewing, struggle to keep awake.



The ordinary practice of good seamanship would imply, among other things, adherence to the Standards of Training, Certification and Watchkeeping Convention and Code which specify requirements for fitness of duty, including the need for 10 hours' rest within a 24-hour period.

The world of shipping today is such that, had the master taken his ship to anchor to comply with the STCW and ensure his crew was properly rested before continuing the voyage, he clearly would have put his future employment prospects at risk. Had the chief mate demanded proper rest before he went on watch, he too would have risked a similar fate. Again, this is a familiar story heard by pilots all over the world.

*ShenNeng 1's* chief mate was a diligent, conscientious, hard-working and loyal employee. What will be his reward for such dedicated service? Yes, the accident was caused in large part because of his omissions but the point is, he behaved like every chronically fatigued human being behaves.

The altruistic motives of the good folk at the International Maritime Organization in developing rules to keep unacceptable practices in check are not, in many cases, matched by those whose motive is profit. However, if there was no profit motive, there would be no shipping industry. So, there is an obvious need for greater effort and a sharper focus on bridging the gulf between the rule makers and the rule breakers.

Would there be a difference if the International Safety Management Code required management to place a clear notice throughout each ship stating that it fully supported the master in ensuring that, before proceeding on duty, all crew are properly rested in accordance with the STCW? Or would this be another exercise in futility?

Talk to any pilot and they will tell you that overwhelmingly, the focus of ships' crews is on compliance — ensuring the paperwork is right so as to pass an ISM audit or a port state control inspection. However, what the paperwork describes and what happens in reality are two different worlds.

Unfortunately, a similar scenario exists on the Great Barrier Reef where pilots will openly tell you how they flog their fatigue logs to meet the requirements set by AMSA, but the reality is far different. In fact, fatigue has played a key role in most of the groundings of piloted vessels on the Great Barrier Reef.

So, this is shipping in the modern world. And as the modern world gets hungrier for Queensland's abundant natural resources, shipping along the Queensland Coast and through the Great Barrier Reef is predicted to increase substantially — with that comes an increased risk of accidents.

The Australian Maritime Safety Authority's response to accidents has always been the same — incremental amendments to rules and policies that respond to the deficiencies identified in the latest accident. The current AMSA administration deserves some sympathy. It's been left a poor legacy by its predecessors. However, what is desperately needed now is someone with the vision and the fortitude to take that giant leap forward to restructure the whole safety system in the Great Barrier Reef so as to give the public confidence that the challenges of the future can be properly met.

*Steve Pelecanos is a maritime consultant, holds a number of positions on national and international maritime bodies and continues to work on-roster as a pilot at the port of Brisbane.*



## Svensen Calls for Improved Competence Levels

**Tor Svensen, president of DNV at Nor-Shipping**

The positive trend in which the accident rate was decreasing has now stopped. In fact, it has been reversed, and navigational errors still play a dominant role. In addition, we are facing a future of more sea transportation, more ships and more technologically advanced ships.

Due to the combined efforts of the industry, including owners, charterers, classification societies and port state authorities, the accident rate decreased year by year for more than 20 years. This trend stopped almost a decade ago, and over the past few years an increased rate has been reported.

"The shipping industry is facing different challenges. There is now a high focus on the environment, and this is leading to major changes. In my mind, it is now time to reinstall the balance between safety and environmental risk. Zero tolerance for loss of life is equally as important as zero environmental damage," Mr Svensen said when talking to the press at Nor-Shipping today.

**"The industry will always have to balance safety and other priorities, but the negative trend in accident rates indicates that we are no longer managing to get the balance right," he said.**

DNV has for years collected and analysed data related to all aspects of safety at sea. Thousands of feedback forms have been addressed to major shipowners, and these have been completed and returned by all levels of these organisations – both onshore and on board vessels.

"We cannot design ourselves away from the human elements," is Tor Svensen's reaction to the safety developments described above. "Safety can never be completely regulated. Individual competence and behaviour will always be key elements in managing safety."

Three important areas require focus in order to achieve further safety improvements:

1. Improving the safety culture
2. More effective and targeted training
3. Regular competence assessments of onboard personnel

"As in all industries, there are conflicting goals in shipping too. Recognising this, I believe we first of all have to focus on improving the safety culture. Secondly, the quality of training and development of more tailor-made training modules based on actual experience and competence requirements are other key issues. Finally, training has to be followed up and regular competence assessments for at least all the main officer positions are needed," Mr Svensen concluded.



## Global Maritime Education & Training Association

### GlobalMET Limited

Australian Company Number 103 233 754

[www.globalmet.org](http://www.globalmet.org)

Chair:  
New Zealand Maritime School  
2 Commerce Street  
Private Bag 96028  
Auckland  
New Zealand

Executive Secretary:  
Rod Short  
P O Box 307 Waikanae  
Kapiti Coast 5250  
New Zealand  
[maritime.edu@paradise.net.nz](mailto:maritime.edu@paradise.net.nz)

### Secretariat

P O Box 307 Waikanae  
Kapiti Coast 5250  
New Zealand  
Tel 64 4 905 6198 Fax 64 4 905 6190  
[maritime.edu@paradise.net.nz](mailto:maritime.edu@paradise.net.nz)

B III 3276 Vasant Kunj  
New Delhi India 110070  
Tel 91 11 26124221 Fax 91 11 26894188  
[secretariat@globalmet.org](mailto:secretariat@globalmet.org)  
[www.globalmet.org](http://www.globalmet.org)