NewsLetter

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

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Train, Train, ReTrain, ReTain!

GlobalMET
MARITIME EDUCATION & TRAINING

www.globalmet.org

Inside this Issue

15 Years of GlobalMET

It is 15 years since our network was formed, by 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, meeting in the Hong Kong Polytechnic University in September 1996. This followed four well-attended exploratory meetings during the first half of the nineties, at Dalian Maritime University, Fiji Institute of Technology in Suva, the Far Eastern State Maritime Academy in Vladivostok and at the New Zealand Maritime School. At the Auckland meeting, in December 1995, it was unanimously resolved to establish an Asia Pacific regional association, to be known as the Association of Maritime Education and Training Institutions in Asia Pacific (AMETIAP). The initiative for creating the network came from the Australian Maritime College, which had established the Asia Pacific Maritime Centre with a funding grant from the Australian Federal Government.

Steady growth followed and, in December 2002, a legal entity was incorporated in Australia as AMETIAP (Global) Limited, a not-for-profit, liability limited by guarantee company, with its registered office at the Australian Maritime College. With institutions outside the Asia Pacific region expressing interest in joining, the name Global Maritime Education and Training Association, with the working name GlobalMET and a new logo, were adopted in 2006. In February 2007, the registered name in Australia was changed to GlobalMET Limited.

In June 2008, at its 100th 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. At present GlobalMET has 97 Members, 9 Associate Members, 9 Honorary Members and 5 Individual Members in 35 countries. There are five elected directors, serving a three year term and four co-opted on a yearly basis, as follows:

- Capt Timothy Wilson, New Zealand Maritime School - Chairman
- VAdm Eduardo Santos, Maritime Academy of Asia and the Pacific – Vice Chairman
- Capt Pradeep Chawla, Anglo-Eastern Ship Management – Immediate Past Chairman
- Capt John Lloyd, Australian Maritime College – Secretary/Treasurer
- Capt Richard Teo, Seafood and Maritime Industries Training
- Prof Hideo Yabuki, Tokyo University of Marine Science and Technology
- Mr Roland Tan, Singapore Maritime Academy
- Mr David Fredrik, Malaysian Maritime Academy
- Mr Swapan Das Sarma, American Digital University

Secretarial services are provided under two year contracts by Core Competency Marine in New Delhi. The writer has had the privilege of being involved from the beginning and serves as Executive Secretary.

GlobalMET has and is involved in many activities to develop MET and is currently:

- reviewing and revising IMO model courses 7.01-7.04 to ensure they comply with STCW 2010 - in the final stages;
- drafting a new IMO model course on Leadership and Teamwork - over half done;
- participating in the IMO e-Navigation Working Group;
- developing, in collaboration with Anglo-Eastern, the Deck Cadet Structured Shipboard Training Program Record and Activity books, together with supplementary books for oil, chemical and gas tankers - completed and awaiting printing - the companion publications for Engineer Cadet shipboard training are in the final stages of drafting;
- assisting development of the Department of Maritime Studies at Durban University of Technology; and assisting in the launch of an MOU between the education institutions and Durban Municipality, partners in the Skills Development Task Team of the eThekwini Maritime Cluster;
- assisting with the Singapore Maritime Academy's Maritime Experiential Learning cruises in S E Asia, in which up to 100 maritime students from Asia participate in each of three cruises per year;
- addressing the Green Ship Technology Conference in Singapore in late September;
- participating in the Asia Pacific Manning & Training conferences held in Manila each year – this November a GlobalMET panel of speakers from Australia, Bangladesh, Chile, India, Singapore and the Philippines will discuss MET and a GlobalMET seminar on MET will be held on the following day;
- organising annual GlobalMET conferences/seminars in India - in Pune, Delhi and Chennai in early December this year.

The establishment of GlobalMET arose from the participants' desire to support the aims and objectives of IMO for "safer ships and cleaner oceans", 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.

Now, with a seat at IMO and a growing record of achievements, GlobalMET is set to better serve as a 'voice' for the providers of maritime education and training in addressing many issues, particularly those associated with the delivery of the training essential to the future of an efficient, safe, clean, secure global shipping industry, an industry absolutely critical to the progress of the world economy.

Rod Short
Executive Secretary

Sharper Eyes on Ship Traffic

The leading article 'Safe Navigation in Crowded Waters' in Issue 6 of this newsletter used Singapore Strait as an example of crowded waters. The following article which appeared in the Straits Times on 24 July 2011, describes the new VTIS recently installed.

Singapore, one of the world's busiest ports, has about 1,000 vessels docked at its terminals at any onetime. With a ship leaving or arriving every three to four minutes, cool heads at the control centre are a must.

The people handling this high-pressure task track all vessels passing through the Malacca and Singapore straits using the Vessel Traffic Information System (VTIS). Like an airport's air traffic controllers, they ensure vessels navigate safely through Singapore waters.

Their job has become easier, thanks to a new state-of-the-art VTIS. A new Port Operations Control Centre in Changi Naval Base, outfitted with the latest VTIS, began operating in April this year. It will be officially opened by Transport Minister Lui Tuck Yew tomorrow.

Officers from the vessel traffic management department of the Maritime and Port Authority (MPA) previously operated out of the MPA's Port Operations Control Centres at PSA Vista in PasirPanjang and Tanjong Pagar Complex. Operations at PSA Vista were transferred to Changi in April.

The new VTIS is a substantial upgrade. For one, it tracks up to 10,000 vessels at a time, twice that of it spredecessor. The officers monitoring the sea lanes now have massive 56-inch screens that allow them to view the entire strait at once. Previously, they needed to toggle between several windows on a smaller 20-inch screen.

A closed-circuit television (CCTV) sub-system is integrated into the VTIS, so operators can simply click on a vessel and a camera will automatically zoom in on it.

Senior marine officer Lim Cheng Hai said the operators have till now been relying on their knowledge of which camera zone a vessel is in to manually pan the camera to locate it. The new setup saves about 30 seconds of searching per vessel. The new system is now also able to detect smaller vessels such as leisure craft.

Captain Kevin Wong, assistant director of MPA's vessel traffic management department, said the new capability gives the operators a more complete picture as they can now see both large and small vessels on their screens.

Also, helping deep-draft vessels - those that have keels extending 15 m or more below the waterline – is a breeze as the new VTIS automatically predicts a deep-draft vessel's route and provides warnings if it nears shallow waters.

Said Capt Wong: 'This new system helps release the load on our operators so they can pay more attention to monitoring traffic.'

From next month, a similar system will be installed at the MPA's control centre at PSA Vista. Once that is completed in the middle of next year, the MPA will decommission its Tanjong Pagar Complex control centre. The new system, to cope with further growth in vessel traffic, costs $25.4 million in total to develop and install.

'We are always mindful of future traffic growth, and future challenges and demands. That's why we stay ahead of the curve,' said Capt Wong.

Last year, vessel arrivals in terms of shipping tonnage reached 1.92 billion gross tons, a 7.5 per cent increase from 2009. Container traffic grew by 9.9 per cent to total 28.4 million Twenty-Foot Equivalent Units (TEUs) last year. TEU is the term for freight boxes.

And with the expansion of Pasir Panjang terminal due for completion in 2013, Singapore's waters are set to become even busier - hence the push to upgrade a vessel traffic system in place since 2000.Before the new VTIS was designed, Capt Wong told its Norwegian developers, Konsberg, to 'make the system work for the man'.

He also got his men to provide feedback throughout the development process, which began in June 2009. The result: cutting-edge technology plus little touches, such as the ability to hit a key to locate the mouse icon. Operators said they tended to lose track of their mouse icon amid the clutter of symbols on screen. An online chat function has been added, so duty officers no longer need to shout across the room or goover to an operator's desk when seeking clarification.

The 400 sq m centre in Changi has a curved ceiling and angled walls to enhance the feeling of space. Energy-saving cove lights line the ceiling, providing a warm glow without creating a glare or reflection on operators' screens. 'Every single detail has been thought through,' Capt Wong said. 'This VTIS is an investment well spent because the operators appreciate having a system that makes their work easier, so that they can focus on monitoring traffic.'

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NB: About a third of the world's trade and half the world's oil trade pass through the Malacca Strait and the Singapore Strait.

First Convocation of the First Maritime University

AMET got its University status in August 2007 and was formally inaugurated personally by The Secretary General of IMO Mr Efthimios Mitropoulos in February 2008. There has been no looking back since. Very quickly, its course offerings stretched to encompass the needs of the entire range of marine industry verticals. Within the faculties of Engineering & Technology, Science and Management Studies it has established 19 departments in all, offering 3 Diploma, 10 Under Graduate, 7 Post Graduate courses, apart from M.Phil and PhD programmes. All these are designed for the Maritime domain exclusively. As a result, in 2011 it has its first batches of graduates from Naval Architecture, Shipping Business Management and Post Graduates with M. Tech. in Marine Engineering Management, M.Sc. in Marine Biotechnology, M.Phil in Marine Microbiology and MBA in Shipping Finance graduating out. Others graduating out are from its well established and highly recognized continuing programs of B.Sc. Nautical Science, B.E. Marine Engineering and MBA in Shipping and Logistics Management. Next year it will also have graduates in Petroleum and Offshore Engineering, as well as Harbour Engineering, Marine Electrical and Electronics Engineering and Marine IT and Communications Engineering graduating out. The University today has on its rolls 2727 students, comprising 55 girls and 2672 boys and including 99 foreign students. The academic staff strength is 180 excluding 27 part time visiting faculty and 170 non-academic and support staff.

The first convocation

Convocation, to hand out the degrees was held on 16th July 2011 at its campus. Says Capt Bhardwaj the Vice Chancellor, "This Maritime University could not have anybody else but Capt J C Anand as Chief Guest, who is by miles the foremost mariner this country can have. A Varuna awardee, which is the highest award in maritime sector for outstanding achievements and contributions to the Indian Shipping industry, he rose up from ranks as Nautical Cadet to become a ship owner. He has been the President of Indian National Shipowners' Association. He has established the Indian National Ship Classification Society, viz. Indian Register of Shipping, which is now a full member of the prestigious International Association of Classification Societies. He has been conferred 'Life Time Achievement Awards' by a number of national and international awarding entities. Truly a legend in his lifetime and 'an institution' by himself for the Indian Maritime sector."

Chancellor of AMET University, who conducts the University Convocation, Mr D T Joseph, really needs no introduction to the marine fraternity of this country. A celebrated and charismatic bureaucrat of the shipping ministry, who much after demitting office, continues to enchant the mariners, speaks volumes for him. The Vice Chancellor and the Registrar received the Chancellor and the Chief Guest and ushered them in to put on their academic robes along with the Board of Management and the Deans. The Chancellor then passed the Grace for admitting to the degrees to those whom the Examiners have certified to be qualified. The Chancellor then led the procession to the dais, marching to the signature tunes of AMET played by the Cadets Band, amidst standing ovations by the graduands, their parents, invitees, members of the staff and the Academic Council of AMET University. The function commenced with the Vice Chancellor's Welcome address and presentation of the Academic report and its many achievements.

Declaring the convocation open, the Chancellor then invited the Chairman of AMET and the Chief Guest to deliver their Felicitation address and the Convocation address respectively. The Chief Guest then gave away the awards, prizes and medals before the Chancellor gave away the degrees to in-person and in-absentia candidates whose names were read out by respective program deans and heads of departments. The Chancellor then administered the pledge and conferred the degree thus:- "By virtue of the authority vested in me as the Chancellor of the AMET University , I admit you to the several Degrees in several departments both In – Person and in – Absentia for which you have been declared qualified in this University, and in token thereof you have been presented with these diplomas and I authorize you to wear the robes ordained, as the insignia of your Degree." The Convocation was then declared dissolved by the Chancellor before signing out with the national anthem and leading out the procession once again to standing ovations.

Videotel Announces the Launch of Training Packages Implementing Face-to-Face CBT

A training concept for the shipping industry

UK based producer of maritime safety training software and materials, Videotel, has announced the launch of a number of training packages implementing face-to-face tutoring.

Videotel has developed a training concept for the shipping industry introducing face-to-face tutoring into the company's computer based training (CBT) programmes. The tutor-assisted CBT programs are available through Videotel's new Learning Management System (LMS).

Qualified instructors offer their tutoring which students can avail of while they complete the training. This way the students can participate in a tutored course, benefitting of online support, guidance and feedback, while onboard.

LMS is designed to combine the benefits of computer-based distance learning, such as allowing the students to spend time onboard, with the advantages of verbal and visual interaction between tutor and student.

The software offers real time tutorials online and students can participate in one-to-one exchanges with their tutors as well as group discussions with fellow pupils regardless of where they are in the world.

The tutorials are set to take place at a specified time. Students, who are unable to attend due to operational constraints or time-zone difficulties, can log-in later and watch a recording of the tutorial. This way they can keep up with the course work as well as the discussions.

David Dearsley, former Deputy Secretary General of the International Shipping Federation, is the first expert to take part in the programme. He will tutor the ILO Maritime Labour Convention Tutor-Assisted CBT Course.

"This is an exciting new development in the field of maritime training," says Nigel D. Cleave, Chief Executive Officer of Videotel Marine International.

"We believe Videotel Academy's Learning Management System will provide students with the support and personal contact of an individual tutor at the same time as enabling them to feel part of a wider learning group, so essential and important in maintaining motivation and equally avoiding any possible feelings of isolation."

Source: **Digital Ship**

Marine Air Bags? A Most Unusual Way to Launch a Ship

By **gCaptain Staff**
August 3rd 2011

To learn more about marine airbags and their use for moving and launching large ships, we reached out to Song Tao of Qingdao Evergreen Shipping Supplies Co., Ltd. Let's here what he has to say:

What were the first uses of air bags in the launching of ships?

The history of ***marine air bag ship launching*** dates back to 1981. Xiao Qinghe ship repair and building shipyard, located in Jinan city of Shangdong Province, launched a 60 DWT tank barge with air bag suspension on January 20, 1981. Seven air bags were deployed in that project. One was 2 meters in diameter and 6 meters long and used for elevating. The remaining six air bags were 0.8 meters x 6 meters long and acted as the rollers. The first intention of that trial launch was to develop a prompt, less landform limited ship launching method for warfare purposes.

How has the technology advanced since then?

Over the past twenty years, the airbag ship launching system has made advancements in not only the air bag, but also the ship launching/landing technology. The first generation air bags used a rubber dipped canvas as a reinforcement layer to form the air chamber trunk. Two cone-shaped molds were then used to make the ends and everything was stuck together.

With today's air bags, the whole-enlacing-technology used for manufacturing is done together. Rubber dipped synthetic-tyre-cords are used as the reinforcement layers with the trunk and two cone-shaped ends made at the same time. Everything is then-laced together, so the air bag doesn't have any joints. Due to the development of rubber chemistry, the performance of the rubber employed in the latest air bags is highly enhanced and about 15 times that of the first generation bag with the same specifications.

The launching and landing technology has also developed. In the beginning, only small and flat bottom ships located on a fabricated slope could be launched with air bags. Now this technology is more flexible and less limited by the ship and landform. Now any type of ship with a DWT below 55,000 and in a place with enough launching space can be launched using air bags. The launching slope even can be sloped upward. It has really developed into a cutting edge technology for launching ships, and especially useful for some marine emergencies.

They look very similar to Yokohama Fenders, how do they differ?

The main use of ***Yokohama fenders*** and ***Evergreen air bags*** are definitely different. It is well known that Yokohoma fenders offer an effective fender system providing a soft and stable berthing condition to ships. Evergreen air bags are widely used for ship launching, landing, heavy transport and air lifting. Due to the special use, structures of Evergreen air bags are optimized for safety and built for heavy duty use. The surface layers are enhanced for anti-abrasion and are pierce resistant. Even if they are somewhat wounded, Evergreen air bags can still work safely until repaired. The length of air bags are usually more than 10 meters and two cone-shaped ends make them look like huge sausages. Also, Evergreen air bags never use tires and shackles.

What are the advantageous to using this system over traditional ship launching techniques?

An air bag ship launching system does not need the traditional fabricated slipway so it saves time, investment,

land, etc. Air bags need no extra maintenance and after use they can be cleaned and folded in the corner to wait for another mission. It is easy to find that air bags' elasticity can give more protection to the launched ship. A remarkable character of air bags is that the working height can be changed to redirect the ship or object being launched by adjusting the inner air pressure. For this character it is peerless compared to traditional ship launching techniques.

So what are the other uses for this system?

Evergreen air bags are not only used for ships, floating docks and caisson launching but they are also cutting edge for ship landing, heavy transport, marine salvage, etc. It is a versatile tool for many marine applications.

What was the most challenging mission your system has assisted with?

The most challenging mission we ever participated in was the ancient ship named "Nanhai No.1" salvage project. The project was called the most complicated and expensive salvage project in China's history.

It had been revised 6 times and been demonstrated 4 times during the preparing 4 years. In June 2006, the top 22 experts were collected to demonstrate the latest project which finally got approved after two days of discussion. It was finally decided to the best idea was to build a large caisson to contain the ship, then lift the caisson out of the water and onto land by air bags.

The Nanhai No.1 weighed 2,800 tons under water and when brought out of water, it weighed some 4,800 tons. The caisson was brought out of the water and placed on a submerged barge then carried to a temporary port. All we needed to do with air bags was land the caisson from the barge and move it to its final residence, a specially built museum named "crystal palace". The tides and dropping off weights, along with the caisson moved to land, made the barge's working height and direction change every time. We had to adjust the inner pressure of air bags placed under the caisson to redirect it to close the port or change the height of caisson bottom to reach a better condition for landing. On 12/25/2007 The first attempt to land the caisson was canceled because of a violent 4 meter wave when the caisson was near the port. During the next day's floodtime, it took more than 3 hours to land the caisson on the temporary port successfully with 16 huge air bags. The remaining 365 meters from the temporary port to museum was comparatively easier for the air bags to carry the caisson. On 12/28/2007, we completed our goal when the caisson arrived at its new home, the "crystal palace".

Any disadvantageous to using "Air Bags"?

Air bags ship launching technology can not be used for side-launch of big ships, so it is somewhat limited for ship launching. And it needs more calculation for the launching/landing process.

Is your company working on any new ideas for the future?

Yes. As was mentioned before, air bag ship launching technology can not currently be used for ship side-launch. We are working hard on the improvement of air bags and a design made for ship side-launch. We have two goals to achieve in the near future: one is to enable ship side-launch with air bags and the other is to launch DWT 100,000 ships using air bags.

How can we learn more about the product?

Our website, qingdaoyongtai.com, is a good place to start. We have plenty of marine air bag ship launching/ salvage cases presented there that are of help.

Bridging the Marine Skills Gap

04 Aug 2011

There has been recent criticism of the European Commission Task Force's lacklustre approach to averting the unfolding maritime skills crisis, but there are still grass-roots providers able to show a way forward.

Although much of the Task Force's focus was toward seagoing mariners, there is a related engineering gap which stretches to onshore facilities as well as those engaged in shortsea, ferry and workboat operations.

Michael Cooke MBE, technical training manager of Mabway is very aware of the growing gap: the UK's manufacturing relies on many skilled engineers who are going to reach retirement age in the next few years but don't have anyone to step into their shoes. "We assumed the British engineering training was being looked after by the engineering manufacturers. But we blinked, and these factories closed or left our shores, and the apprenticeships followed them," said Mr Cooke.

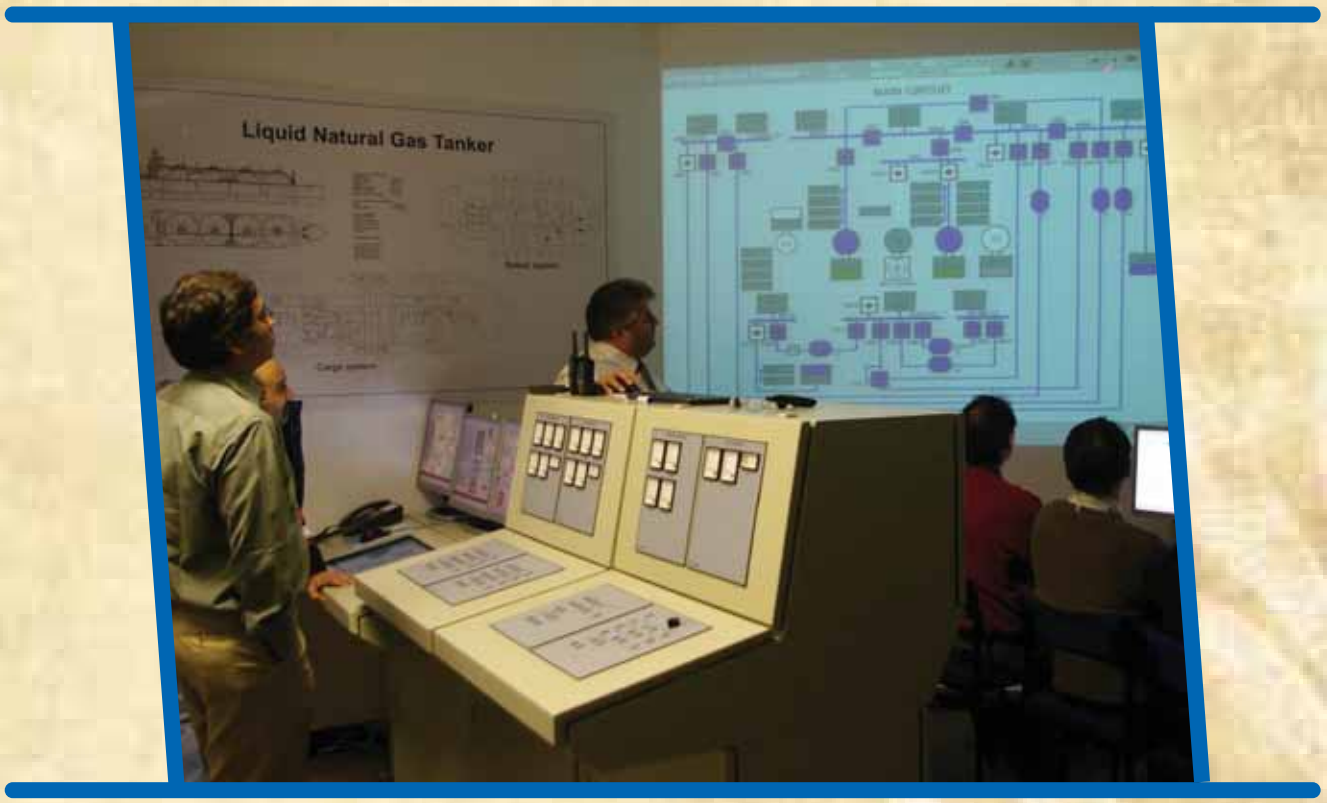
"We have to be able to attract those young people who may not originally think about marine engineering, by opening up a career pathway that starts at the bottom but still reaches to the top," he says.

However, one difficulty is that the needs of the sector are changing dramatically, and this means that some companies are no longer making the most of their existing workforce.

Mr Cooke explains that this is partly because "the gap" that industry needs to be filled has become more and more fluid of late: engineering is changing at the same rate as new engines and their systems are being developed. Certainly the new emissions legislation (Tier III) is pushing engines toward more electronic controls, going far beyond the fuel injection system.

Unfortunately, says Mr Cooke, this means that some older, very experienced and knowledgeable engineers are getting left behind.

"These developments have meant that there's more reliance on electronic circuitry than ever before, but you don't want to let go an experienced employee who might really know and understand marine engines thoroughly – apart from this latest control section. So, rather than try to find an 'electronics' man, it might be more economical and better all round to 'lift' the skills a company already has."



There needs to be more training tailored to industry needs and encouraging a career pathway says Mabway.

Elderly Bulker Sinks

A series of accidents involving ships off the Mumbai coast in the past three years has made officials sit up and deliberate upon the urgent need to bring out stricter regulations for older vessels. In early August, a Panama flagged ship M V **Rak Carrier** sank 20 nautical miles off Mumbai. While the Coast Guard and Navy rescued the crew, 60,000 metric tonnes of coal and 100 metric tonnes of fuel went down. This has triggered apprehensions of an ecological disaster.

The Coast Guard, Mumbai Port Trust and Shipping Ministry are now thinking of stricter norms for St Kitts and Panama flagged vessels which are involved in most of the accidents off the Mumbai coast. The Master and Chief Engineer were arrested. Last July, M V **Khalijia 3**, a St Kitts flagged vessel developed an engine failure and the crew had to be rescued. Later in August, she rammed **MSC Chitra,** causing spillage of 789 metric tonnes of oil from Chitra's tanks and polluting beaches in the city.

Shiptalk

Training Heading Online

The European Maritime Safety Agency (EMSA) is starting to become involved in a number of new initiatives, and has announced the launch of their new STCW information system (STCW-IS).

This is available on-line for public consultation, and contains relevant information on EU's maritime administrations, maritime education, training, certification systems and training institutions as well as EU approved programmes and courses, and career progression schemes available in the EU Member States.

The system provides information on countries which are party to the STCW Convention, and sets out the number of dispensations issued per year, and the career paths for maritime education, training and certification.

The system also provides the contact information for all entities involved in the implementation of the STCW Convention in each country, and the type of certificates of competency issued by those entities can be found.

Plus there is contact information on the maritime training institutions available in each country, their programmes, the number of enrolments and diplomas issued by the institutions, and the type of training facilities made available for maritime education and training.

The STCW-IS is also able to produce general statistics and reports based on the information available in the system, considering EU and non-EU seafarers certified by EU Member States.

Accessing https://portal.emsa.europa.eu/web/stcw shows that the points of focus in the MET Institutions area are:

- Details of the quality management system in place (if any),
- contact information and structure of the maritime training institutions available in each country,
- their maritime education and training programmes,
- the number of enrolments and diplomas issued by the institutions, and
- the type of training facilities made available for maritime education and training.

Maritime Safety, Security and Environmental Challenges

By
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The prime intention of this write-up, besides giving an overall brief analysis of the maritime safety regime, is to discuss and propose a ***research based scientific idea*** that can enhance the current maritime safety performance, the implementation of maritime security and the environmental protection regulatory system.

The most relevant concerns are how to integrate the human factor into:

- Improving the performance of maritime safety, security and environment protection practices on board ship and offshore installations;
- achieving the most effective management techniques pertaining to maritime safety, security and environmental issues for ships and offshore installations within the regulatory frame work.

Introduction

The human element is widely acknowledged as the major cause of safety and security risks in the maritime industry. The intention of this article is to discover the underlying reasons why humans make mistakes and how effectively these mistakes can be prevented. Even though it is unlikely that human errors will ever be completely prevented, there is growing recognition that many human performance problems originate from a system failure within organizations to develop an effective policy for managing human reliability.

After introduction of STCW 95 and the ISM Code in the maritime and offshore industry, it was optimistically believed that maritime safety standards and actual performance will be drastically enhanced. However, despite the enormous funding for providing the resources on maritime education, training, strict regulatory regime and sophisticated automation on board vessels, the safety performance is still a matter of concern.

Human errors begin during the design stage, extending beyond the process and workplace design, into the construction and continuing into the design of management systems for operations and maintenance. Such systems include management and training policies and procedural development, and standard operating procedure (SOP) development. This brief article intends to explain the effect of the human factor, provide insights into current knowledge of human errors and how these can be minimized. It is also intended to enhance understanding of the possible causes of human errors and how to reduce their occurrence by changing the culture of the organization and the day to day approach to handling the processes. Formal and informal workshops may be held throughout the period with the crew on board, to educate them on the basic concept of potential human errors and provide continuous training on how to eliminate the human error element.

Human elements affecting safety are derived from the study of human behaviour, response and performance in crisis scenarios in the normal working environment.

Safety and Security

Safety implies freedom from danger. In practice, maritime safety refers to the level of danger that is acceptable in a real-life situation, when a threat and its consequences are impact on human beings, goods and assets in the system. Different levels of risk threat are attach to different modes and to different activities.

The acceptable level of risk threat is judged according to the choices made by individual(s) in a specific scenario, which may involve the judgement of a marine engineer officer, deck officer, and/or other relevant people on board or ashore.

The safety performance of a technical system is the measurable consequence of the extent to which it behaves as expected, with and without the interaction of human beings.

Maritime security is the series of planned activities to protect human life, assets and maritime transport systems from the real and perceived threats of crime, terrorism, negligence, technical failures, human factors or natural phenomena.

Objectives

The intention here is to identify the factors related to human acts (inherent, intentional or accidental), which may cause potential failure in the established safety and security system/ procedures and the implementation on board a ship or an offshore facility and then to develop a common methodology for investigating maritime accidents and the reporting of these incidents, thereby improving the understanding of human factors related to those events.

When safety performances in the maritime industry are compared with the aviation industry (a much younger industry), the aviation industry supersedes. It is only in recent times, that safety regime implementation and its performance has become a prime concern to the maritime industry and addressed on war footing scale. It must be understood that those working on board are human beings and are not perfect. The length of the stay on board a ship or offshore facility is far more than that of aviation sector personnel in their aircraft. Though it does

not give a clean slate for making mistakes which may lead to catastrophic casualties, it should be considered that a seafarer is also subject to the same human failings as the next best person on the street. What is required is a detailed in-depth study to understand the problems faced on board and ultimately to find ways of overcoming them by training them with the necessary technical know-how, implant dedication, professional pride, discipline and loyalty to the profession and their employers and relevant organizations.

It is essential to understand seafarers as human beings and to take a closer look at some of the human factors that may influence their performance. So far very little attention has been paid to the physiological and psychological factors that affect human performance in the maritime environment, particularly when away from shore comforts for long periods.

Maritime Safety Culture

Maritime safety culture can be defined as a culture in which there is considerable endeavour to reduce risks to the individual, ships and offshore facilities and the marine environment, to a level that is 'as low as is reasonably practicable'. For an organization making appropriate efforts to attain such a goal, the economic and social benefits will be forthcoming, and a sound balance between maritime safety and commercial aspects can be maintained.

The challenge for all of us in the maritime industry is to enhance technical, operational and safety management standards and address those factors responsible for failure in meeting and maintaining these standards at all times. A further challenge is to identify and evaluate factors influencing the **Safety Culture** and to turn them into practical and effective mechanisms for further developing a **Quality and Safety Culture** throughout the maritime community.

Integration of 'Human Element' in Maritime Safety Regime

IMO has developed its strategy to address the human element in support of the IMO strategic plan adopted by resolution A.944 (23) and the human element vision, principles and goals are listed in resolution A.947 (23). This strategy depends specifically on the principles and visions expressed in those resolutions. It aims to be simple, practicable and to address how the understanding of 'human factor' can be improved in the whole stakeholder community in the maritime transport system.

However, to make best use of limited resources, this strategy is directed to providing assistance to maritime regulatory regimes, ship owners, ship managers, seafarers and other stake holders in the maritime industry to enhance safety, security and the protection of the marine environment. In this context, an action plan for the human element has been developed containing a list of human element-related issues, together with specific actions to be taken by various agencies of IMO and regulatory regimes.

Cross Culture Factor in Human Response

The **Cross Cultural Management Practices** on board are the need of the present times as modern ships are deployed with seafarers of different nationalities and various cultures. The officers and ratings of different cultures may have power distance psychological barriers, which can be a major factor in communication failures, causing vacuums in clear understanding of instruction and orders. This can have a severe impact on safety performance on board. So far, very little attention has been paid to cross cultural factor in seafarers training curricula. Learning about seafarers working with different nationalities and cultures should be a compulsory. A well trained, loyal, dedicated and disciplined workforce aboard and ashore is the call of the day for the good performance of the current safety regime on board. The mindsets of ship owners and managers also need to be changed. The decades old approaches need to be revived in order to have a loyal, dedicated and disciplined workforce of seafarers on board. A very serious 'think tank' group should be engaged to address the current challenges on crewing matters, including the education and training.

Fatigue

Fatigue and safety have always gone hand-in-hand and it would be in everybody's interest to seek ways to minimize the 'fatigue factor'. This should particularly cover all those seafarers who have to perform critical functions on board ships or offshore installations.

Fatigue has been recognized all around the world as a major contributor to maritime casualties, accidents and incidents. There have been many incidents where fatigue has been suspected to be contributing or causing transportation and industrial accidents; however, it is not justified to identify 'fatigue' as the main cause and vital link between the 'unsafe acts' and 'decisions making' which leads to the accidents. The fatigue state of the persons involved could be avoided by monitoring the working culture on board. The implementation of standard working hours and adequate rest hours can improve the working efficiency of the seafarers onboard and, up to a certain extent, can eliminate the 'fatigue' factor.

At one time, fatigue was discounted as a potential cause for human error. A common myth existed that fatigue could be prevented by addressing characteristics of personality, intelligence, education, training, skill, compensation, motivation, physical size, strength, attractiveness or professionalism. Also, the lack of scientifically accepted information on how fatigue affects not only mood and feelings, but also individual and team performance, has constrained investigators and analysts. Further, guidance on how to investigate fatigue and build the links between a person's recent history and potential impairment has been lacking. Unlike alcohol and narcotic drugs, which can be measured by, for example, blood tests, there is no unambiguous physical or chemical test which can tell us that a person is impaired to a certain extent by fatigue.

As it has been recognized at IMO that fatigue is a major contributor to maritime causalities, to address it watch-keeping requirements were introduced into the STCW Convention as a part of the 1995 amendments. It was also noticed during this time that there were conflicting requirements between the requirements of the STCW Convention and ILO Convention No.180. In order to resolve the issue and to avoid confusion in the international shipping industry as a result of the requirements of these two conventions, a Joint working group consisting of representatives of both IMO and ILO was convened. This resulted in the development of a single document "Guidelines for the Development of Tables of Seafarer's Shipboard Working Arrangements and Formats of Records for Seafarer's Hours of Work and Hours of Rest"

Conclusion

Although the maritime industry has a long history, safety performance records are relatively quite poor. The industry leaders must seriously address the root causes of poor safety performance. Marine insurance industry and maritime law professionals can contribute more effectively through their research cells and can widen their focus beyond the loss and damage of property and blaming of the parties concerned.

Addressing human factors must be considered to be of fundamental importance and analyzed accordingly. This will not only raise standards, but also bring visible enhancement in safety performance within the maritime industry.

It is logical to link the human factor with human weaknesses, negligence, carelessness and indifferent attitudes. The strength of human intelligence and dare-devilness also need to be considered and seriously addressed.

The above discussed human factors are also applicable to the performance lapses in maritime security and environment protection, both of which are major challenges for the operation of well secured ships (protection from piracy, terrorism, attacks by radicals, etc.) and clean oceans (prevention of marine environmental pollution).

Further research work on the integration of the human factor in maritime safety, security and environmental protection will be highly interesting and challenging.

Tanker Tangles Yacht

The UK Maritime and Coastguard Agency (MCA) issued a press notice stating that a tanker and a yacht collided off the Isle of Wight. Two people from the yacht were thrown into the water and the yacht lost its mast and rigging.

"At just after twenty past three this afternoon Solent Coastguard were informed by Hamble Rescue that the yacht Atlanta of Chester had collided with the tanker Hanne Knutsen off Egypt Point, Isle of Wight.

Two people were thrown overboard by the collision and the yacht lost its mast and rigging. The RHIB Vigilant took one of the people back to shore for medical attention whilst the Southampton Patrol Boat and Hamble Rescue took the second person to a waiting ambulance at Trinity Pontoon".

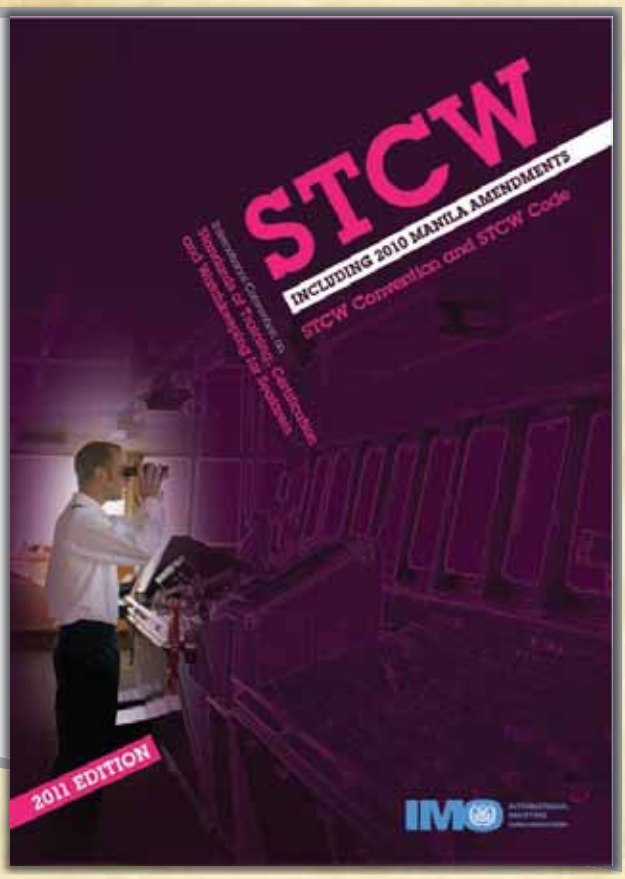
The two people thrown into the water have been rescued.

Editor: *A power and sail interaction. In a traffic lane a sailing vessel is to avoid impeding the safe-passage of a power driven vessel following the lane. However a power driven vessel following a lane is not relieved of her obligation to keep out of the way if there is risk of collision with a sailing vessel.*

Death (STCW) Certificate

Ignore, for a moment, the fact that I think the entire STCW regime needs a major revamp, one that the (new! improved!) STCW 2010 has failed to do; all the STCW 2010 does is promote more of the same old assembly line driven substandard drivel where the aim of the exercise seems to be for regulators to peddle influence, institutes to make money and sailors to get a piece of paper at the end of it all. My final argument in favour of a major STCW revamp is this: the STCW regime has presided, over the last twenty years, almost, over a gradual decaying of seafarer standards. It's basis- and/or its implementation - is flawed somewhere. Or everywhere.

http://oldsaltshaker.blogspot.com Manu's scripts
June 2011



Collision at Singapore Anchorage 25 July Nautica Batu Pahat/Tay Son 4

On July 25 2011 the 13303 dwt freighter Tay Son 4 collided with the 9800 dwt chemical tanker Nautica Batu Pahat in the Singapore eastern anchorage. The Nautica's hull was torn open near the tanks section and engine room while the Tay Son 4 suffered damage to its forepeak and bulbous bow.

Editor: *Safe Navigation in the crowded waters adjacent to Singapore was the topic of the editorial in Issue 6. Traffic in Singapore waters is expected to double by 2024.*

Food for Thought

Sails, kites, crewless ships, non-metal structure, ships that separate into sections ... food for thought:

Demand for ships and the goods they carry around the world will largely dictate the strategies of the shipping industry, as they always have done. New considerations that are likely to play heavily into the design of new ships, however, include the demand for far greater and more demonstrable sustainability, with less of an environmental footprint.

Could the wind be harnessed as once it was as the main motive power for merchant ships? We have already seen the use of wind-assistance employing large kites, but perhaps the availability of new materials for sails, the ability to mechanise sail handling, could see large ships being given a help from this generally available and free source of motive power.

Might the difficulties of obtaining competent seagoing manpower, and the reluctance of people to seek a sea career, persuade designers to a far greater degree of automation than we have today – even to the complete removal of the human crew? After all, if we can remotely control landers on the surface of Mars or the Moon, we can surely remotely control a ship on a deep sea voyage? Indeed, in the 1980s a Japanese project proved that it was perfectly feasible to send a large ship across the North Pacific with nobody aboard her, and in terms of instrumentation and communications there have been great advances in the past thirty years.

Of course, the scourge of piracy would have to be properly dealt with and the law changed from the present definition of a crewless ship as being a derelict, but in practical terms it could represent a useful breakthrough.

Could the time be ripe in 2030 for a change away from steel as the main constructional material, 200 years after iron started to challenge the wooden walls that had reigned supreme since shipbuilding began? We already have interesting designs using "sandwich plate" employing polymers, and which offer great advances in terms of lightness, ease of construction, and ability to withstand shocks and stresses. Could composites, which can be produced to provide the exact characteristics that are needed, emigrate from the world of aviation construction and racing yachts, to commercial ships?

Some suggest that the fantastic development of the container which revolutionised cargo liner shipping in the 1970s could be ready for another great breakthrough. The ships surely cannot get much bigger without becoming impossible to accommodate in a reasonable number of ports. But what about a ship that can be divided up into sections, and which could be used to operate a "milk round" of smaller ports, with a separate bow and propulsion section? Does this sound impossible? Well, just look back 20 years and see what we thought then!

From MerchantNavy@yahoogroups.com 13 July

Are We Getting the Balance Right?

At a time when the crew element sits firmly on top of the shipping industry's most important 'to do' list, it seems an anathema to even contemplate that training should be forced to reappear on the shopping list of ship owner things to remember.

After all the industry has just emerged from a concerted period of wage inflation and crew member poaching and concerns were raised two years ago that rapid promotion policies implemented by some ship owners and ship managers were threatening to place in positions of responsibility, some officers who were just not up to the task. So it comes as a surprise that shipping heavyweights such as DNV's Tor Svensen should start hoisting the 'safety risk' flag in a warning to the industry to stop moving the public focus towards environmental risk and away from human safety and personnel risk.

And he has a point, especially when you consider that not only are there more ships coming out of the world's shipyards, but they are bigger and more sophisticated. So greater attention needs to be placed on training standards and competency levels onboard ship! Year-on-year improvements in ship safety were now turning into a negative trend, he claimed with statistics showing that the accident frequency has started to rise from an historic low. "Technology, rules and compliance will never bring us to the expected level of safety without focusing more strongly on the human element," he said.

Why is there not this level of stringent checking [as in the airline industry] of competency when captains and senior officers move from ship to ship, or from older ship to new ship? Seafarer training is not just about certification but has to be about pure competency and this has to be checked, and checked.

Claims that much of today's training is of poor quality has to set alarm bells ringing in the shipping office and practitioners have to start spending more time on actual training as a start to measure the effects of their training. Regular assessment of competency levels is thus crucial, but managers and owners need to think beyond compliance. Regulations address safety management but there is no guarantee for human performance.

But the industry is facing a dilemma, we all know that. Its invisible image is doing very little to attract quality recruits into the industry and as we are hearing, wage levels are not dropping as it is still a seller's market out there. But just when the industry needs to start treating its seagoing staff as valued company members rather than just a commodity, there is still a reluctance by seafarers to enter into fixed employment contracts as they continue to chase what they believe is a rising wage dollar.

Maybe the time has come to reignite the zero tolerance perspectives that were laid out in the much heralded, but now little heard of Poseidon Challenge. Their goals of zero fatalities, zero pollution and zero detentions were admirable aspirations and maybe they should visited once again. Zero tolerance of inferior vessel safety should also be a key performance indicator on every crew manager's operational dashboard.

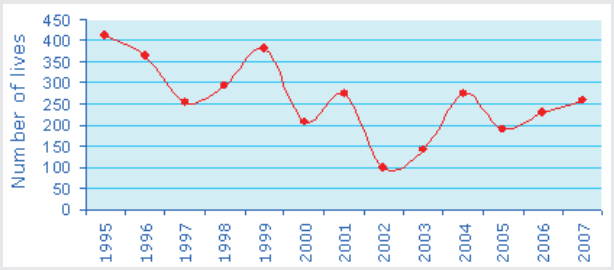
Straight Talk Ship Management International May/June 2011

Ships & Lives Lost

As in all transport sectors, lives are sadly lost as a result of accidents at sea. Disappointingly, there has been a rise in fatal accidents in the last two years, although the loss of life in shipping is in fact relatively modest, and the overall trend is one of reduction in the number of fatalities, which is all the more impressive in view of the growth in the number of ships in the world fleet. However, there is of course always room for improvement, and the industry's goal is for zero fatalities.

The figures below relate to lives lost on cargo ships and cover the entire international industry, which employs over one and a quarter million people, plus many more employed in coastal trades.

Lives lost on cargo ships



Source: **Lloyd's Register Fairplay**

IMO is Embracing Social Media

Something has changed at IMO.

Since June, IMO has embraced social media. It has engaged direct discussions with the maritime community worldwide, providing answers to numerous questions, commenting opinion pieces and providing multimedia reports of technical sessions. It has indeed become more accessible than ever.

No doubt environment will soon be a key focus of the discussions. All over the world, expectations are high to see IMO leads the global maritime community towards more environment-friendly practices and especially to cope with the growing threat of oil spills and accidental pollution. Sea lovers want to know how IMO decisions change their lives for good, or bad.

Behind IMO social media program is Karine Langlois, IMO's new media Officer. She gave Maritime Passive Safety (MPS) an exclusive interview to explain why IMO has joined the conversation.

1. MPS: What has convinced IMO to become active on social media?

Karine Langlois (KL): The logic and pace of communication in our times makes it essential that we increasingly use the Internet and social media. The United Nations Department of Public Information (DPI) is harnessing social media and encourages all UN agencies to adopt this practice. IMO is part of this effort and seeks to implement communications campaigns on a range of issues using social networks. But the primary goal for using social media is to build greater awareness of the Organization and to promote its work and activities.

While there was no official launch for the usage of social media by IMO, our very first online campaign culminated on June 25th to mark the Day of the Seafarer 2011. The universal outreach of social media sought to raise awareness of the vital role that seafarers play in the world economy.

The platforms used by IMO are currently: Twitter, Facebook, LinkedIn, Flickr and YouTube. While we do experiment with SlideShare, Tumblr and the like, we are open to other ones, but we are focusing on the networks mentioned above.

2. MPS: The International maritime community is generally perceived as conservative and moderate. Do you think the maritime players are ready to engage in social media communications?

KL: The shipping industry and the maritime community as a whole are starting to see the impact of online media and with better and faster technology on ships we will see an increase in web and online activities from stakeholders. And, while the industry has traditionally been close-knit, public interest and demand will also encourage the maritime industry to start taking part in online discussions and dialogues.

But, most importantly, social media can no longer be ignored, not even by the maritime industry; the Internet is now the third most-popular news platform, behind local and national television news and ahead of national print newspapers, local print newspapers and radio. In today's new multi-platform media environment, news is becoming portable, personalized, and participatory and the maritime community is starting to participate.

3. MPS: Are you in contact with ship owners through social media?

KL: We are using the same platforms as many ship owners and sometimes exchange on Twitter or LinkedIn. We try to be in contact with communication focal points and share our experiences or best practices on using social media within this industry. We hope to develop a more comprehensive network in the future.

4. MPS: Which national/continental communities seem to you the more ready to take on the social media turn?

KL: It's very difficult to say, from our experience with Day of the Seafarer, we have witnessed amazing initiatives from all over the world. From South Africa and Brazil to the Philippines and Europe, organizational and individual participation was represented from all over the world. Some parts of the world that may not have the same level of technology still managed to send a few "tweets" and photos from events taking place in their countries.

Karine Langlois
New Media Officer at IMO
28 Jul 11

This article was initially published at Maritime Passive Safety.

Watchkeeper: The Rocky Road to e-Navigation

Nobody could ever deny that electronics have provided a huge boon to the shipping industry and its safety. The comforting ability to employ satellites to provide accurate positions, regardless of weather conditions or the distance from land makes shipping more precise and far safer than it was, when a landfall after an ocean passage with no celestial observations was fraught with doubts about the accuracy of the dead reckoning.

The arrival of the electronic chart display system (ECDIS) is but the latest stage in this progression, and those who have spent hours correcting their world folios by hand are grateful for the transition. At the same time, just as every technological advance has provided misunderstandings in addition to advantages, the use of ECDIS is accompanied by snares and potential pitfalls for the unwary (and untrained). Just as the "radar assisted" collisions demonstrated the importance of proper theoretical and practical training in the use of the new device, and every advance from ship to ship VHF communication to AIS has seen its share of accidents contributed to by improper use of the equipment, so a number of accidents have shown the need for the same application of training to ECDIS.

What might be described as a worrying trend in the use of electronic navigation systems has been exposed by the German accident investigation bureau BSU, as it probed the stranding of a German flagged heavy lift ship on a reef in the western Pacific. The course of the ship was plotted manually on a paper chart of the area, then transferred to the ship's electronic system, and this was in use at the time of the incident. It seems clear that what was apparent on the large paper chart effectively became invisible on the far smaller electronic projection, and a course shaped a mile off the reef somehow saw the ship stray right over the obstruction. The cause of the stranding was attributed to "transcription errors", but it is probably true to suggest that it would not have happened had the new device not have been employed, and if the vessel was being navigated on paper charts.

This is by no means the first accident of its kind, and the problems seem to be twofold. First, there is the fact that if the small electronic screen is not to be cluttered, much of the information contained on the larger paper version must be "edited out". Accidents have occurred when this "editing" has included something vital, such as a buoy or beacon, a coloured marking indicating a shoal, or some other vital navigational "need to know" information. Unfamiliarity with the equipment supplied aboard a particular ship and inadequate type-specific training have been blamed for such problems.

On certain and even more disastrous occasions, it has been whole remote reefs and tiny islands that have become invisible in the electronic chart version being used by the ship, which has come to a grinding halt where the electronic chart showed no hazard in the vicinity.

Secondly, the scale of the chart shown on a screen no bigger than the size of the average desktop computer seems to militate against the best possible use of this important and useful aid to navigation. Some professionals have suggested that the "miniaturisation" of the chart in electronic form is self-defeating, and if it is possible to manufacture the large screens which TV manufacturers are anxious to sell, it should be perfectly possible to provide an ECDIS screen effectively the same size as the paper chart. You learn, it is said, by "trial and error". The trouble is that with shipping, our errors tend to be expensive!

Date: 30.08.11 Articles written by the Watchkeeper and other outside contributors do not necessarily reflect the views or policy of BIMCO.

Training is Essential for the Enforcement of the Maritime Labour Convention

MLC 2006 formula requires special training

Dominick Devlin is a special advisor on the Maritime Labour Convention (MLC, 2006) and he is one of the experts involved in the Maritime Labour Academy, a programme of specialized courses aimed at strengthening the capacity of governments, shipowners and seafarers in the application of the Convention. In this interview, Dominick Devlin explains why the MLC, 2006 formula requires special training and why this is essential for the enforcement of the Convention.

What is so innovative about the Maritime Labour Convention 2006 to require such a specific training programme?

The MLC, 2006 is an immense endeavour and there has been nothing like it since 1919, when the first international labour convention was adopted. The MLC, 2006 places together about 36 existing Conventions, it consolidates them, and when countries ratify it they are not allowed to "pick and choose" between the various parts, like in some other ILO Conventions.

What makes it easy for these countries to ratify is a principle of firmness and flexibility: firmness on making sure that the rights of the seafarers are enforced but with a considerable degree of flexibility for the governments, in the way that they will deliver those rights.

On the other hand, it is a Convention that relies very much on having an efficient and strong enforcement process, including the enforcement in countries that haven't ratified the Convention but whose ships, flying their flags, visit the ports of a ratifying country (port State control).

What is the role of inspection for the enforcement of the Convention?

The MLC, 2006 for its success depends on the people on the ground: flag State inspectors at the first line, port State control at the second line. Shipowners, seafarers and seafarers' organisations, for example, can also help the enforcement process. This is why we are having these courses. We have to make sure that our inspectors are effective. Many participants in our courses will have long experience in maritime inspection, but, although very useful, their experience is not sufficient.

What we need now is to have inspectors who are able first of all to understand that they will not be looking at the Maritime Labour Convention 2006 itself, but at the national laws implementing the Convention. They will have to learn how the Convention works and where to find the precise requirements that are to be complied with, and this is a new element which they didn't have before. In addition to that, there is the human element, of course.

It is easy to inspect a machine, while it is harder to obtain information interviewing a seafarer in private, because they may often be reluctant to talk about possible problems relating to their working and living conditions. So there is a whole new technique that has to be learnt, due to these two elements: the human element and the fact that the requirements to be inspected against are contained in national provisions, including (in some cases) collective agreements, as the requirements for the Convention will be found in national laws and also in other measures, such as collective agreements.

And how are the social partners involved in the process?

This Convention is giving a role not only to inspectors to ensure compliance, but also to the seafarers, through the complaint system, and to the shipowners, through the Declaration of Maritime Labour Compliance. Shipowners, in fact, are responsible for indicating how they are going to implement the Convention on board, although their proposed procedures for ensuring compliance have to be inspected and approved by the competent authority or recognized organization.

The role of shipowners and seafarers in the enforcement process is very important. But the success of the MLC, 2006, will ultimately depend upon the widespread ratification and implementation of the Convention, based on a proper system of inspection in every country: inspection primarily at the level of the flag States, which should be harmonized as far as possible.

But we have to remember that flexibility means that there will be differently worded requirements from law to law. In this connection, there is the added safeguard, at the second level of inspection, namely port State control. In this regard, the MLC, 2006 has its own approach: a strong system of port State control that aims at catching substandard ships visiting a country's port, without unduly impeding the operations of ships complying with the Convention.

Source: **ILO 27 Jul 11**

Are Airline Pilots Forgetting How to Fly?

Industry is suffering from 'automation addiction,' industry insider says

By **Joan Lowy**
August 30, 2011

WASHINGTON — Are airline pilots forgetting how to fly? As planes become ever more reliant on automation to navigate crowded skies, safety officials worry there will be more deadly accidents traced to pilots who have lost their hands-on instincts in the air. Hundreds of people have died over the past five years in "loss of control" accidents in which planes stalled during flight or got into unusual positions that pilots could not correct. In some cases, pilots made the wrong split-second decisions, with catastrophic results — for example, steering the plane's nose skyward into a stall instead of down to regain stable flight.

Spurred in part by federal regulations that require greater reliance on computerized flying, the airline industry is suffering from "automation addiction," said Rory Kay, an airline captain and co-chairman of a Federal Aviation Administration committee on pilot training. "We're seeing a new breed of accident with these state-of-the art planes," he added. Pilots use automated systems to fly airliners for all but about three minutes of a flight: the takeoff and landing. Most of the time pilots are programming navigation directions into computers rather than using their hands on controls to fly the plane. They have few opportunities to maintain their skills by flying manually, Kay's advisory committee warns.

Fatal airline accidents have decreased dramatically in the U.S. over the past decade. However, The Associated Press interviewed pilots, industry officials and aviation safety experts who expressed concern about the implications of decreased opportunities for manual flight, and reviewed more than a dozen loss-of-control accidents around the world.

Discouraged from flying

Airlines and regulators discourage or even prohibit pilots from turning off the autopilot and flying planes themselves, the committee said.

Safety experts say they're seeing cases in which pilots who are suddenly confronted with a loss of computerized flight controls don't appear to know how to respond immediately, or they make errors — sometimes fatally so.

A draft FAA study found pilots sometimes "abdicate too much responsibility to automated systems." Because these systems are so integrated in today's planes, one malfunctioning piece of equipment or a single bad computer instruction can suddenly cascade into a series of other failures, unnerving pilots who have been trained to rely on the equipment. The study examined 46 accidents and major incidents, 734 voluntary reports by pilots and others as well as data from more than 9,000 flights in which a safety official rode in the cockpit to observe pilots in action. It found that in more than 60 percent of accidents, and 30 percent of major incidents, pilots had trouble manually flying the plane or made mistakes with automated flight controls. A typical mistake was not recognizing that either the autopilot or the auto-throttle — which controls power to the engines — had disconnected. Others failed to take the proper steps to recover from a stall in flight or to monitor and maintain airspeed.

"We're forgetting how to fly," Kay said. In the most recent fatal airline crash in the U.S., in 2009 near Buffalo, N.Y., the co-pilot of a regional airliner programmed incorrect information into the plane's computers, causing it to slow to an unsafe speed. That triggered a stall warning.

The startled captain, who hadn't noticed the plane had slowed too much, responded by repeatedly pulling back on the control yoke, overriding two safety systems, when the correct procedure was to push forward. An investigation later found there were no mechanical or structural problems that would have prevented the plane from flying if the captain had responded correctly. Instead, his actions caused an aerodynamic stall. The plane plummeted to earth, killing all 49 people aboard and one on the ground.

Two weeks after the New York accident, a Turkish Airlines Boeing 737 crashed into a field while trying to land in Amsterdam. Nine people were killed and 120 injured. An investigation found that one of the plane's altimeters, which measures altitude, had fed incorrect information to the plane's computers. That, in turn, caused the auto-throttle to reduce speed to a dangerously slow level so that the plane lost lift and stalled. Dutch investigators described the flight's three pilots' "automation surprise" when they discovered the plane was about to stall. They hadn't been closely monitoring the airspeed.

Last month, French investigators recommended that all pilots get mandatory training in manual flying and handling a high-altitude stall. The recommendations were in response to the 2009 crash of an Air France jet flying from Brazil to Paris. All 228 people aboard were killed.

The 'human factor'

An investigation found that airspeed sensors fed bad information to the Airbus A330's computers. That caused the autopilot to disengage suddenly and a stall warning to activate. The co-pilot at the controls struggled to save the plane, but because he kept pointing the plane's nose up, he actually caused the stall instead of preventing it, experts said. Despite the bad airspeed information, which lasted for less than a minute, there was nothing to prevent the plane from continuing to fly if the pilot had followed the correct procedure for such circumstances, which is to continue to fly levelly in the same direction at the same speed while trying to determine the nature of the problem, they said.

In such cases, the pilots and the technology are failing together, said former US Airways Capt. Chesley "Sully" Sullenberger, whose precision flying is credited with saving all 155 people aboard an Airbus A320 after it lost power in a collision with Canada geese shortly after takeoff from New York's LaGuardia Airport two years ago. "If we only look at the pilots — the human factor — then we are ignoring other important factors," he said. "We have to look at how they work together."

The ability of pilots to respond to the unexpected loss or malfunction of automated aircraft systems "is the big issue that we can no longer hide from in aviation," said Bill Voss, president of the Flight Safety Foundation in Alexandria, Va. "We've been very slow to recognize the consequence of it and deal with it." The foundation, which is industry-supported, promotes aviation safety around the world.

Airlines are also seeing smaller incidents in which pilots waste precious time repeatedly trying to restart the autopilot or fix other automated systems when what they should be doing is "grasping the controls and flying the airplane," said Bob Coffman, another member of the FAA pilot training committee and an airline captain.

Paul Railsback, operations director at the Air Transport Association, which represents airlines, said: "We think the best way to handle this is through the policies and training of the airlines to ensure they stipulate that the pilots devote a fair amount of time to manually flying. We want to encourage pilots to do that and not rely 100 percent on the automation. I think many airlines are moving in that direction."

In May, the FAA proposed requiring airlines to train pilots on how to recover from a stall, as well as expose them to more realistic problem scenarios.

But other new regulations are going in the opposite direction. Today, pilots are required to use their autopilot when flying at altitudes above 24,000 feet, which is where airliners spend much of their time cruising. The required minimum vertical safety buffer between planes has been reduced from 2,000 feet to 1,000 feet. That means more planes flying closer together, necessitating the kind of precision flying more reliably produced by automation than human beings. The same situation is increasingly common closer to the ground.

The FAA is moving from an air traffic control system based on radar technology to more precise GPS navigation. Instead of time-consuming, fuel-burning stair-step descents, planes will be able to glide in more steeply for landings with their engines idling. Aircraft will be able to land and take off closer together and more frequently, even in poor weather, because pilots will know the precise location of other aircraft and obstacles on the ground. Fewer planes will be diverted.

But the new landing procedures require pilots to cede even more control to automation.

"Those procedures have to be flown with the autopilot on," Voss said. "You can't afford a sneeze on those procedures."

Even when not using the new procedures, airlines direct their pilots to switch on the autopilot about a minute and a half after takeoff, when the plane reaches about 1,000 feet, Coffman said. The autopilot generally doesn't come off until about a minute and a half before landing, he said. Pilots still control the plane's flight path. But they are programming computers rather than flying with their hands.

Limited opportunities to fly manually

Opportunities to fly manually are especially limited at commuter airlines, where pilots may fly with the autopilot off for about 80 seconds out of a typical two-hour flight, Coffman said. But it is the less experienced first officers starting out at smaller carriers who most need manual flying experience. Airline training programs are focused on training pilots to fly with the automation, rather than without it. Senior pilots, even if their manual flying skills are rusty, can at least draw on experience flying older generations of less automated planes.

Adding to concerns about an overreliance on automation is an expected pilot shortage in the U.S. and many other countries. U.S. airlines used to be able to draw on a pool of former military pilots with extensive manual flying experience. But more pilots now choose to stay in the armed forces, and corporate aviation competes for pilots with airlines, where salaries have dropped. Changing training programs to include more manual flying won't be enough because pilots spend only a few days a year in training, Voss said. Airlines will have to rethink their operations fundamentally if they're going to give pilots realistic opportunities to keep their flying skills honed, he said.

The International Air Transport Association says the most common type of airline accident is one in which planes stalled or otherwise lost control in flight. It counted 51 such accidents in the past five years.

The following comment is from Douglas Bell, Deputy Director, Bahamas Maritime Authority, 1 September 2011

This is a timely reminder of over reliance on automated systems. What is surprising is that the airline industry is repeating the mistakes of earlier years. Some years ago, 20+, the problem was identified and it was determined that planes should be designed to give pilots a closer connection with the plane's operating systems. Clearly those lessons have been forgotten.

In shipping we have a similar situation in the engine room. Engineers have fewer and fewer opportunities to work on the ship's machinery due to increased reliability, more automation and better planned maintenance by shore personnel. When something does go wrong, the ship's engineers are not well equipped to deal with it due to lack of practice. Fortunately, engine room problems seldom lead to the catastrophic consequences described in the article.

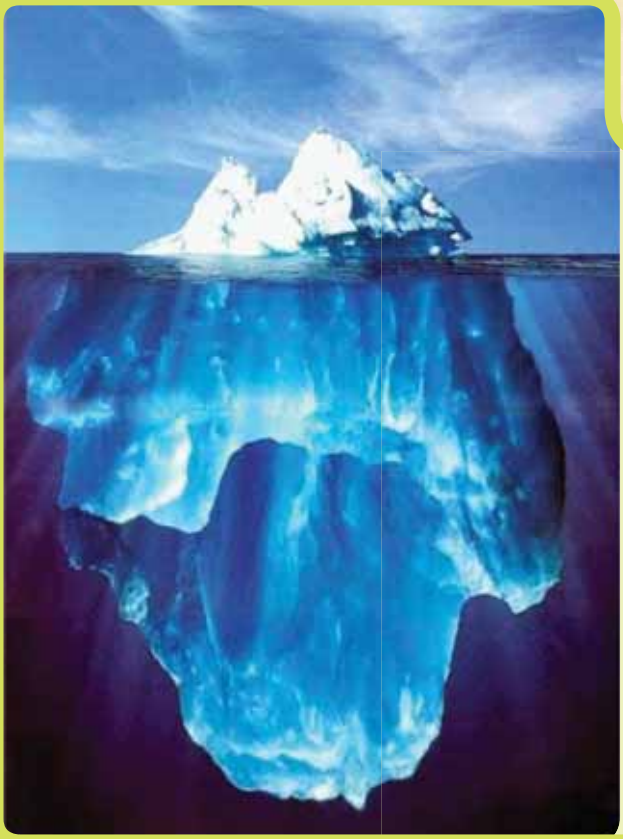
As far as navigation is concerned, we must ensure that we do not fall into the trap of 'we can therefore we must'. In other words, just because something is possible it does not mean that we have to do it. The navigator must be given a much closer connection with the actions of the ship than reading information from a screen. The need to look out of the window to assess the conditions around the ship must remain an essential part of bridge watchkeeping.

GlobalMET IM A/Prof Luis A Perez Uriarte

Associate Professor Luis A Perez Uriarte of the National Merchant Navy School (Escuela nacional de marina mercante - ENAMM) "Almirante Miguel Grau" in Callao, Peru has joined GlobalMET as an Individual Member. Last year ENAMM celebrated the 40th year of its establishment and 219 years of continuous maritime education and training in Callao. Today its mission has been extended to the academic training of professionals in the fields of Merchant Marine, Maritime and Port Administration, and graduate education and training, contributing significantly to maritime interests and national development.

A/Prof Luis A Perez Uriarte specialises in teaching the IMO conventions, safety, statutory certification, class inspections and other topics. Since 1997 he has also served as a marine inspector for the Panama Maritime Authority and the China Corporation Register of Shipping.

It is a pleasure to welcome A/Prof Luis A Perez Uriarte and to assure him of the benefits of involvement in our growing community of MET expertise.



We See Only in Part

The following was kindly forwarded by a reader of the newsletter, Mr Soh Eng Sim in Singapore:

This came from a Rig Manager
For Global Marine Drilling
In St. Johns, Newfoundland.
They actually have to divert the path
Of these things away from the rig
By towing them with ships!

Anyway, in this particular case
The water was calm and
The sun was almost directly overhead
So that the diver was able to get into the water
And take this picture.
They estimated the weight at 300,000,000 tons.

THE TITANIC DIDN'T STAND A CHANCE AGAINST ONE OF THESE - NOR DOES ANY OTHER SHIP!

Keizersborg - IMO 9102904 Photographer Thomas Kloster, 8 March 2011.

At Sea!

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