

The MET Network with NGO Observer Status at IMO

GlobalMET 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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Editorial

The Harvard Business Review recently reported on where in the world, the digital economy is moving the fastest (HBR.org/2015/02). These movements in digital economy propelled some innovations into the maritime industry like ECDIS, for aiding navigational competence and various simulation models and applications for command - bridge operations, stevedoring and cargo handling techniques. Although these digital innovations provided training in advanced shipboard management and navigation, our multinational and multi lingual industry did not achieve any notable benchmark to minimise or eliminate mistakes in the digital applications within the multi-lingual literacies of the complex maritime industry. One wonders then whether reliance on new digital equipment, without being fully digitally literate may have led to the several reported incidents at sea. These incidents are serious growing concerns.

Cultural globalisation in the market place has made English as the dominant language of knowledge production as expressed by Y L Koo (2013) in "Language and Culture in Multilingual Contexts". The English Language is the lingua franca in the maritime industry. However, to cope with the swiftly evolving technology of the 21st century, language and literacy skills per se are no longer sufficient. Koo (2013) expressed that workers situated in multiple, intersecting and culturally diverse contexts are increasingly required to have aggregate of literacies such as linguistic, intercultural, multimodal, critical-creative, subject content, technological, civic and inter personal literacies to negotiate the complexity of local-global institutions, organisations and communities. How true for seafarers and personnel in our maritime industry indeed! We have taken for granted for so long that the maritime applications of the English language we use as Lingua Franca (ELF) is sufficient for our complex industry. Not any more, as has been experienced by the many near-misses and incidents between pilots, tug masters and ship's bridge team management.

Some highlights in this issue are:

- ◆ Aline de Bievre from the IMO writes about her experience at a meeting in Denmark, with e-navigation and communications. Her comments have a direct impact on the nature of digital literacy and the multi-modal literacies that must be addressed as complexity of operations expand its boundaries in a new work order that is evolving. Harmonisation of English as lingua franca (ELF) and the way we all communicate in ship operations and associated activities must realise the critical and mindful pluriliteracies. English as social capital in our industry has not been adequately explored, despite those who might think otherwise. In our industry, within the multi-layered, intercultural and multi-cultural encounters, it can be seen that English is not just a whole entity or unit and the weight of meaning is not singly borne by linguistic grammatical features (least of all) alone. Gunther Kress expresses this notion clearly in "Writing the future: English and the Production of a Culture of Innovation (1995, 1996)" and his "Review of Literacy in the New Media Age, (2003)"
- ◆ Professor Noriyuki on the fine work by women in maritime at the National Institute for Sea Training NIST in Japan. Three of his teaching staff have contributed to his communique. Indeed we hope that there will be more women joining the seafaring communities in Japan and other seafaring nations.
- ◆ Iman Figrie at ALAM, explores the career pathways of MET practitioners where Master Trainer's accreditation may become a necessity to provide and sustain the quality standards of maritime education and training. When each expert maritime professional takes on the task of facilitating the transfer of their experience, knowledge and skills to the learner, each must himself/herself be formally educated and trained in educational science and methodologies.

Editor's note: Readers may wish to write about their professional development for teaching and administration staff at their various institutions.

GlobalMET will in 2015-2016 provide continuous professional development (CPD) for maritime teaching staff in Competency Based Learning and Competency Based Education, Training & Assessment. This CPD will provide the impetus for change that will ensure that institutions move from traditional knowledge based delivery to facilitation of competency based training, certification and licensing.

Editor's note: Read Richard Teo's article on "A journey of hope and aspiration", a three-part narrative of the GlobalMET - TKF project, an initiative recommended by the ADB-Fisher Report

As GlobalMET pursues its objective to establish a Centre of Excellence (COE) in the community of shipping, it is worthwhile to note comments by Dr Annie Koh (Vice President for Business, Singapore Management University (SMU) on "culture of sharing" between universities. She expressed that through a culture of sharing, universities build excellence through academic entrepreneurship and the need to encourage competition plus cooperation, particularly with industry partners (source: Company Directors 2/2015). This model of culture of sharing would surely empower maritime institutions and industry partners to create and foster excellence for maritime education, human capital and the industry.



Figure 1 - Human Capital progression in Maritime through CPD

From these platforms, a COE as the pivotal point of contact for maritime industry practitioners, policy makers, economists, professionals and researchers could provide for relevant knowledge, promote quality competences, best practice, support capacity building and encourage peer to peer interchanges and discourse.

Discussions and views on the development, structure and services to be offered by the COE are encouraged via this Newsletter, or write directly to the Executive Secretary for the Editorial Committee.

For the Executive Secretary,

By **Capt. Richard Teo**
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National Institute for Sea Training (NIST) of Japan



Figure 1 - Dr. Noriyuki Matsuzaki

Introduction

The National Institute for Sea Training (NIST) Japan, is a government institution. It provides the necessary training to fulfil the requirements of the STCW Convention and national legislation. NIST is the main provider of the sea training for students of the merchant mariners' schools such as the Tokyo University of Marine Science and Technology, Kobe University, National College of Maritime Technology and Marine Technical College except fisheries schools. Part of sea training is also provided by shipping companies.

NIST operates five training ships. These comprise two tall ships (NIPPON MARU & KAIWO MARU) and three motor powered ships (TAISEI MARU, GINGA MARU & SEIUN MARU), designed exclusively for sea training purposes.

If you would like to know about us. Please visit our web-page <http://www.kohkun.go.jp/en/index.html>

I appreciate this great opportunity to introduce our female deck and engineer officers and also our new educational efforts in the institution.

Officer Miyako Wagatsuma



Figure 2 - Officer Miyako Wagatsuma

Since childhood, I loved the ocean very much. I have entered the Tokyo University of Marine Science and Technology (TUMSAT) because I would like to protect the ocean and to know more about it. Through various experiences and encounters with people when I was a student, I noticed that most Japanese are not so conscious that their country is surrounded by the ocean, and that their knowledge and the interest in the ocean were

little. Therefore, I decided to learn about the marine environment and maritime industry and how to manage and sustain these for the future generations in this country. I now hope our children will have more familiarity and interest in the ocean.

I participated in a month-long, on-board training as a third grader at TUMSAT and sailed around Japan on a training ship. This one-month training experience was like a dream come true, because I felt different winds and waves every day and every moment. From this experience I came to think that I would like to be a seafarer in the future.

Two years later, I became a deck officer of a training voyage ship. I thought this occupation was my calling, and felt that way when I was offered the job.

I have now worked as a deck officer for 3 years. There are more female officers and engineers engaged in this organization than other shipping companies. Therefore I do not feel any inconvenience with life on-board, even though there isn't any ladies' drying room. I have no issues with this.

The deck officer of the training ship is required to take care of cadets in addition to general work as a deck officer on board the ship. Duties include preparation of the navigation bridge and tank management (fresh water). Even though I am a female, the job responsibility is not different from a male officer, and I don't wish so. I try to do my best all the time, and will ask for assistance whenever necessary.

There are also a lot of interesting discoveries in the on-board training and daily life with cadets. Cadets learn wonders of nature and importance of coexisting with nature through the on-board training at sea.

I want them to know how wonderful it is to have a dream and help their dream come true.

Professor Maki Kado (Ms)



Figure 3 - Professor Maki Kado (Ms)

My name is Maki KADO (Ms.). I am the Junior 1st Engineer (senior instructor of marine engineering course) on the Training

Ship TAISEI-MARU. This training ship is operated under the supervision of the National Institute for Sea Training (NIST) of JAPAN. I am pleased to narrate this story of my seafaring career.

I decided to enter the Mercantile Maritime University because I thought I could gain the knowledge and skills of marine and naval science specifically at this university. During the studying period at the University, we have on-board training periods at NIST for one to three months (in total 12 months). I had little knowledge in marine engineering, so everything was fresh in my first on-board training as a first year student. I wanted to learn, understand and operate the ship's engine and to maintain the plant and machinery. I thought it would be fun to work as a marine engineer. This triggered my wish to become a marine engineer in fact.

Currently, the shipping companies employ few female seafarers. It has however, been increasing little by little. Most Japanese shipping companies employ only a few female seafarers because of the lack of ladies' sanitary installations and other amenities. I encountered these difficulties when I was a cadet.

Some female officers had already worked at NIST. Therefore, it was not difficult to imagine how females would work at sea as an officer, engineer and as an instructor on a training ship. This was why there was no anxiety to be employed by NIST as a female engineer.

It is assumed that there are some difficulties for females to work as a marine engineer because of our lesser physical strength. I realized that this factor was not a hindrance. Whenever I lacked physical strength, I used appropriate electric and hydraulic tools to assist, just like most males anyway. When I am not tall enough and can't reach certain equipment, it is appropriate to use a stepladder. In fact, I can work more smoothly in small places than a man. I have worked hard with these limitations, and had good support from other engineers and crew. I appreciate that I have been able to work as a marine engineer without being so conscious of the gender differences.

NIST provides the on-board training for qualifications of maritime licenses, for cadets of Mercantile Marine University or colleges in Japan. My responsibility is planning and coordination of the on-board training program, specifically for the engineering department, in accordance with the STCW convention. Recently, we have started providing training for Engine Resource Management and Electro-Technology qualifications which were implemented in accordance with the Manila amendments in 2010.

The responsibilities of the Junior 1st Engineer are at the management level and differ from operational level such as 3rd or 2nd engineer. I team up with subordinate engineers to provide

education and training for the cadets under the supervision of the Senior professor of engineering. It is necessary to perform and demonstrate leadership and communicate with senior and junior engineers all the time even if I am a female engineer. Indeed, it is not easy to manage people and duties, but these challenges will make me more professional as a marine engineer and instructor.

Some graduating cadets visit and tell us their experience and current status with very lively expressions.

I am delighted that the cadet graduates, who were brought up in the NIST training ships, are playing primary roles in the domestic and international shipping industry. This fact cheers me and I feel the great worth of my job.

If female cadets are employed in shipping companies that employ female seafarers for the first time, they will meet severe evaluation in the job as female seafarer. I intend to send them my supporting message, and encourage them to increase working opportunities for female seafarers in the maritime industry.

I support and promote increasing employment opportunities for female cadets who are eager to work in the maritime field.

Japan is one of the biggest merchant shipping fleet operating nations. I will maintain my greatest mission to distribute excellent ship-officers into the world shipping industry. I will succeed as I press on hard to fulfill this ambition.

Professor Kazumasa Shimoda



Figure 4 and 5 - Professor Kazumasa Shimoda & Cadet using eLearning methods

We have been working on a study on how to provide effective training for cadets in the training term. As a new program, we have developed a prototype e-learning system on TAISEI MARU III and KAIWO MARU II, two of training fleets of National Institute for Sea Training (NIST). The new e-learning system is usable without connecting the Internet. Moreover, the system applies the flipped-classroom teaching etc technique and methodology.

By

Dr. Noriyuki Matsuzaki

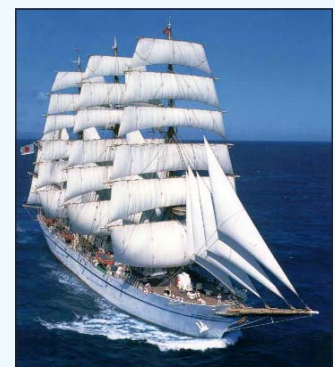
National Institute for Sea Training (NIST) of Japan, writes to GlobalMET to give us the latest update at the NIST



Figure 6, 7 and 8 - Training ships Ginga Maru



Taisei Maru IV



Nippon Maru

Competencies of a Master Trainer



If you think training is expensive, try ignorance” Unilever.

The purpose of this article is informative in nature with the intent being to persuade maritime institutions to pursue master trainer skill (MTS) attainment for their facilitators.

One of the most important questions an institution of learning can ask itself is-- “How do you recognize a master trainer or facilitator” (Biech, 2008). In the ATD (Association for Talent Development) book, *The Best of ATD, Vol 2., Chapter 20, 25 Competencies of a master trainer*, suggests a master trainer must possess skills in “... delivering training... facilitation and trainer... virtual training, training for multiple cultures—to help.... skills [that] keep pace with the evolving profession... and knowledge necessary to engage... learners” (preface).

The book suggests that of beginner, intermediate and advanced trainers -- the first two may only possess about 3/25 or less than 12% of the required advanced master trainer (MT) 25 competencies. As a consequence, it goes without saying that if such a learning institution wants to differentiate itself from the competition-- organizational programs aimed at “enhancing facilitators’ skill sets” should be able to identify benchmarked required master trainer competencies (MTC) and then facilitate a program aimed at closing those gaps. To emphasize those individuals and programs capable of delivering such demanding requirements, ATD has differentiated them by the designation CPLP (Certified Professional in Learning & Performance). The CPLP is based on an ATD Competency Model shown below in figure 1, “the CPLP credentials also provides talent development professionals the ability to prove their worth to employers and to be confident in their knowledge of the field” (<https://www.td.org/Certification>, accessed 29/01/15).

Top 5 Reasons to Become CPLP Certified

- ◆ Build and validate your skills.
- ◆ Increase your earning potential.
- ◆ Differentiate yourself in a competitive job market; knowledge and performance.
- ◆ Broaden your career opportunities.
- ◆ Join an elite professional community.

That said, one of the first things regarding qualifications like the CPLP is costs and possibly a campaign encouraging cheaper alternatives and methods. The focus, however, should first be on the soundness and legitimacy of MTC program and its potential impact on stakeholders and the brand, then the required

capabilities to deliver such training and lastly, cost and ROI. Let us begin our focus here by asking should MTC even be a part of Maritime Education and Training (MET) to begin with or is that taken care of already by the IMO Train the Trainer (TOT) and Assessor Programs (AP)? If so, surely concepts like ADDIE, Blooms Taxonomy (at the support, operational and management level), Gagnes 9 Events and a number of other competency systems and assessment mappings schemes have to be a part of any MT skill set. At this point it seems instructive to compare master trainer versus IMO TOT competencies as to their relation, utility and getting the job done in MET.



Figure 1 - ATD Competency Model, © 2015 by The Association of Talent Development (ATD). All rights reserved

The comparison chart below attempts to map ATD master trainer required skills against corresponding MET TOT and AP required skills for the purpose of seeing whether the IMO TOT requirements suggest one has obtained the required competencies to be called a “master trainer”.

Table 1 - Comparison of ATD Master Training Competencies and IMO 6.09 Train the Trainer

ATD Master Trainer Competencies	IMO 6.09 Train the Trainer Course Objectives	IMO 6.10 Assessor Course Objectives	Description
Performance Improvement (PI)	Develop teaching strategies based on suitable learning theories.	<ul style="list-style-type: none"> - Developing written tests - Performance criteria, ship - Performance improvement plan - Maintenance of standards 	Deals with the application of systematic processes of human performance analysis, design, development, solutions and the monitoring of results
Instructional Design (ID)	<ul style="list-style-type: none"> - Understand and describe how STCW requires competence based training - Design a course of study 	<ul style="list-style-type: none"> - Competence based standards 	Designing and creating formal and informal learning solutions appropriate for strategies and incorporating technologies to maximize results

Training Delivery (TD)	<ul style="list-style-type: none"> - Plan an effective teaching environment - Use a range of teaching methods effectively - Produce a relevant lesson plan 		Delivering the formal and informal learning in a certain manner to obtain desired results
Learning Technologies (LT)	<ul style="list-style-type: none"> - Use appropriate training aids [course needs updating of virtual and e-learning aids] 		The identification, selection, application and adaptation of appropriate and specific learning technologies
Evaluating Learning Impact (ELI)	<ul style="list-style-type: none"> - Evaluate teaching and learning 		Gathering, analyzing evaluating learning information and its impact
Managing Learning Programs (MLP)			Providing required leadership and adjustments to implement the learning strategies
Integrated Talent Management (ITM)			Building and aligning the organization's culture, capability and capacity
Coaching (CG)			Make full use of a rapid interactive process for goals, decisions, actions and improvement
Knowledge Management (KM)			The capture, distribution and archive of KM for sharing and collaboration
Change Management (CM)			Applies processes for the individual, group and organization to shift desired states

As one can see, the comparisons that can be made are approximate only and lacking in direct correlation when trying to compare them to that of the ATD MTC, for example many in the TOT and AP seem to be at a descriptive or understanding level and demonstration-- quite a bit below the higher levels like analysis, synthesis and such as required by a MT; a number of ATD MTCs are referred to as "Areas of Expertise" (AOE) and imply something greater than mere knowledge and understanding and beyond the Bloom Taxonomy terms of Comprehension or Understanding; more like Analytical and Synthesis where deeper understanding for those creating and delivering material is required in order to be called a MT. In addition, several MTC could not be directly articulated with corresponding TOT or AP competencies. This may be because the focus seemed to be less on human performance analysis, talent management, change management and such as with ATD. Also not considered in the Table (as there were no corresponding TOT competencies to compare with) were the several "Foundation Competencies;" Business Skills, Global Mindset, Industry Knowledge, Interpersonal Skills, Personal Skills and Technology Literacy.

In conclusion, "knowing what we don't know," improving our core competencies and driving innovation are key to improved ROI and the bottom line. As such, the ATD CPLP or CIPD U.K. equivalent (Chartered Institute of Personnel and Development) should be part of MET MT development. While the IMO TOT and AP courses have application in MET and industry-- they in no way suggest that an individual has then acquired competencies to be called a MT as denoted by the ATD CPLP certification! Just as attainment of a COC in no way expressly suggests an individual has acquired the necessary business fundamental skills to run a company or drive innovation.

Recalling why one would want the CPLP in the first place, the aforementioned reasons near the beginning of this article are germane and summarized again here; build and validate skills, differentiation and marketability (knowledge and performance) and belonging to a professional community. Branding, return on investment (ROI) and something called Social ROI are all increased as a result of a professional certifications like the CPLP. Again, the recognition by the Maritime Industry for Certificates of Competency (COC) for seafarers should be testament and acknowledgement that asking those involved in demanding jobs like MET with large impact to also obtain higher level skills and competency certification beyond mere understanding and comprehension.

ATD (formerly ASTD) was 70 years in 2013, started its first international partnership with Japan in 1957 and today has more than 41,000 members in 126 countries on six continents; raising standards, impacting through community, content, and customer experience (Annual Report 2013).

References and Further Reading

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By

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Engine Room Watchkeeping



Continued from Newsletter Issue 42

Pumps

Pay special attention to sea water pumps, boiler feed and circulating pumps. Study the main and auxiliary feed line.

Ejector pump, condensate pump, sewage discharge pumps are typical and so pay more attention to them. Bilge and ballast pumps. Keep pump filters clean. At times casing gets damaged by bottom nut of shaft assembly getting loose so study the construction of pumps on your ship. Gear oil and screw pumps run well if only you keep filters clean and never run dry a pump having rubber stator.

- ◆ On ships having T/G keep vacuum pumps in good condition.

In steering gear hot areas, keep air supply fan running. This can be stopped if ambient temp is less than 10degC. Keep portable pumps in good condition because they are useful in time of need.

- ◆ On bulk carriers the Wilden pumps are very useful. Make an inventory of pump shaft seals and keep spares. Do not forget hot water circulating pump.

Do not over grease pump motors. Check the couplings and bushes. Identify which pump motors are interchangeable. It is important to mention here to periodically check below the floor plates. You can find out weeping pipes, feel bottom bushes of pumps and soundness of bilge lines and content of the bilge wells etc. during this tour but tell someone so that he can keep an eye on you.

Refrigeration/Air Conditioner

This machinery runs silently and nobody bothers until we have some problem. Carryout weekly, leak tests from various connections.

On older ships you can have pin hole leakages at return manifold.

Wherever there is oil there usually is a leak. So keep area below the compressors clean to detect leakage. Keep shaft seal as spare.

Normally fish and meat room have heaters for defrosting so there is no problem but vegetable room does not have heater. So manually defrost the vegetable room unit cooler once a month by using water. Specially pay attention after supply of provisions.

With the A/C, keep air filters clean and make provision for effective draining of water (condensate). Pay attention to blower bearings and V belts. When system is running, liquid level in receiver should be about one quarter. Check the loading and unloading mechanism. Keep condenser clean especially if using sea water as the cooling medium.

If control room A/C is cooled by sea water, check that pipes are not blocked (especially after running through river passage). Do not allow air to enter refrigeration systems. This results in blocking of valves especially on return line and then you will have to resort to hot gas defrosting. My third engineer tells me that last time in an EU port, the inspector told him to keep Meat and Fish room cut off at minus 21.5 deg C. So please bear this in mind.

On reefer containers, check for any pipe breakage and rubbing of pipe against clamping. Usually a leak develops at such places especially if fin type condenser coil is rubbing against its support. If leakage develops here it is difficult to repair (plug the tube) because normally fin type condensers are not carried as spare.

Regarding fridge systems, familiarize with defrost timers and how to use them manually and similarly the room temperature cut in/off device (how to use it). At times after taking provisions, a room will run long and in such cases you can adjust the cut off at a higher temp and get back to usual setting after 1-2 days. It is mandatory to keep a record of all coolant/gas systems (only approved gas/coolants – non HCFCs) with their normal content and whenever any leak is rectified or coolant/

gas added to system because the PSC inspector may inspect this log.

These days all ships are preparing a list of all equipment such as AC and Fridge compressors showing what currently allowed refrigerants they are using and details of leaks, their testing and venting, if any, and in this manner the legislation is taken good care of. These details are being regularly checked by PSC. Dedicated recovery units are also being carried by all ships and these are checked by PSC.

Editorial note:

From this year, 2015 it is illegal to use hydrochlorofluorocarbons (HCFCs), including the ozone-depleting refrigerant gas R22 in refrigeration, heat pump and air conditioning (AC) systems. R22 is commonly used in AC systems pre-dating 2004.

(Source: Out-law.com)

Incinerator/15ppm ows

Familiarize with the functioning of these equipment and **use them**. Evaporate water from waste oil tank and then burn the sludge. If you find convenient shore reception facility, use it to discharge sludge and keep receipt. Enter same in oil record book.

Minimize leakage into bilges and clean bilge tank if it gets dirty. Don't let any oil go into bilge tank. Use primary tank. Keep bilge wells clean and test their alarms. Don't keep sludge and bilge contents more than 25% when making a port. In some ports in Europe, the limit is even lower which please check before arrival such ports (like Malmo). Keep burning sludge regularly, say, 0.4M3 every alternate day. Keep waste oil tanks heating coils clean so that good evaporation can be achieved (at times 1.5M3 per day). Write this evaporation also in oil record book(c-12.4). On ships where Aux boiler is used to burn sludge, clean boiler smoke side as required (check by opening one door).

It is important to check all **small tanks** in engine room such as scavenge drain tank, F.O. and L.O. sludge tanks and F.O. and L.O. drain tanks. Check what lines are going into them and how to empty them and where. How much is the normal rise each day in these tanks. Try steering room bilges and bow thruster room bilges also. Test bilge high level alarms where provided. Do not be ashamed at going below the floor plates and tracing lines. On older ships, bilge lines get holed below floor plate. Check IOPP Certificate and ensure all tanks are accounted for in ORB. Check where the condensate from main engine air cooler goes. These days you also need to keep a list of equipment using Freon -22 and write the ROB of same at month end in ORB and also in a separate file (check your company instruction on this).

Exhaust Gas Economiser

Check for water flow by keeping circulating pump pressure gauge good. You can close the root valve after checking pressure. But if you keep it open, check the connecting pipe properly for no breakage. Same is for Main L.O. pump pressure gauge. Water wash economizer once in 2 months and blow soot every watch (follow company instructions). Keep soot tank clean and its pipes in good condition (not blocked or corroded). Can add caustic soda to tank before using soot tank to prevent corrosion. On ships having T/G, pay attention that all headers are getting water by operating header vents. Keep a good control on hotwell temperature and level. If hot well temp is high, feed pump will give trouble. Keep feed pump filters or filters in hotwell clean because small clearances in feed pump impeller will block them and there will be problem in delivering water. Normally we finish at the economizer and do not see upward. Check the funnel top for drain pipe to be clear and uptakes not corroded at some suitable anchorage. On car carriers, be more careful and in some private berths in Japan you will need to put the mesh on uptakes whilst alongside private berths.

To be continued....

By **Mahendra Singh**
Chief Engineer

Who says that Shipping is a Conservative Industry?



Having returned from a two-day meeting of minds on “e-navigation” hosted by the Danish Maritime Authority (DMA) on board the Pear I Seaways cruise ferry, which carries passengers and vehicles from Copenhagen to Oslo and back again all year round, I was left in no doubt that new, ground-breaking developments are on the horizon in marine navigation and traffic management.

The DMA is about to embark on a new project that could revolutionise the way information is shared in and around the maritime sector for smarter traffic management at sea. The “EfficienSea 2” project aims to lay the groundwork for the creation and implementation of the “Maritime Cloud”, a service-oriented communication framework that would be based on available communication systems and include a maritime identity register to enable “the maritime internet of things” – i.e. a comprehensive e-maritime and e-navigation environment for the benefit of the full mix of legitimate maritime stakeholders. Setting a governance standard will also be a critical part of this pioneering project, which will cover a host of other important e-navigation related technical work and trials to reduce the risk of accidents in dense waterways, as well as increase the efficiency of the transport chain and minimize administrative burdens.

The project will be carried out over the next three years in cooperation with 32 partners from the shipping, maritime, R&D and academic communities in 10 countries and from international organizations, such as the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA). It has an allocated total budget of Euro 11.5M, of which Euro 9.8M is European Union-funded.

The term e-navigation refers to “enhanced” navigation by improved information exchange through electronic means, enabling the seamless and real-time transfer of data between ship and shore, shore and ship and between ships in a given sea area. Much work has been done by the International Maritime Organization (IMO) over the past eight years to put flesh on the concept of e-navigation, which is principally concerned with enhanced berth-to-berth navigation and improving accessibility of related marine services for sustainable safety and security at sea and protection of the marine environment. Based on this work, the IMO’s principal technical body, the Maritime Safety Committee, last year approved a Strategy Implementation Plan or “SIP” for e-navigation.

Which precise form implementation will take, will in part depend on the outcome of various “test bed” or demonstration projects already underway or newly planned in various parts of the world,

such as the Malacca and Singapore Straits, the North Sea Region, the Baltic and the Mediterranean Sea, with projects conducted under an array of fancy names like Marine Electronic Highway, AccSEAS, EfficienSea and MonaLisa-Marine Navigation by Intelligence At Sea. From the viewpoint of IMO, it will be important to ensure that outcomes are coordinated with a view to achieving harmonized implementation based on internationally agreed standards to suit the needs of a global industry like shipping. Aware of this imperative need, the Maritime Safety Committee, also last year, approved guidelines on the harmonized reporting of test beds.

Also significant is that the Committee, in approving the SIP, agreed that the development of e-navigation solutions should focus on five priorities, namely:

- ◆ standardized and automated reporting systems;
- ◆ harmonized and user-friendly bridge designs that are “human-centred”;
- ◆ improved reliability, resilience and integrity of bridge equipment and navigation information;
- ◆ integrated presentation, in graphical displays, of available information received from communications equipment; and
- ◆ improved communication of available Vessel Traffic Services.

These are remarkably clear yet very ambitious objectives. It will be interesting to see how e-navigation solutions will develop in the years to come. Will they succeed in enthusing the upcoming generation of marine navigators and users of shore-based shipping traffic information and management services? Watch this space!

Aline De Bievre has had a long career as a maritime journalist and reporter on IMO regulations for the international shipping press. She joined the Secretariat of the International Maritime Organization in London as a technical writer in 2008, with special responsibilities for drafting speeches for delivery by the Secretary-General at IMO meetings, writing presentations for senior directors at external events and editing key IMO documents. She is a long-time Member of The Nautical Institute and a Fellow of The Royal Institute of Navigation.

(Reproduced from Bow Wave Issue 691 – Brave New World Edition – 16 Feb 2015)

By **Aline De Bievre**



A Journey of Hope & Aspiration



The Chartered Institute of Logistics and Transport

FCILT Chartered Fellow



Continuation - A Journey of Hope and Aspiration Part 2.

Takeaways

Competency Based Learning (CBL) and Competency Based Education, Training and Assessment (CBETA)

Outcome Based Education (OBE)

Andragogy, Pedagogy, Action Reflection Learning, Focus Groups, Cross Functional Groups



Figure 1 - The Task

Double Loop Learning

Chris Argyris of Harvard University and Monitor Company Group states that learning may be defined as the detection and correction of error. In most cases only single loop learning occurs where errors are corrected without altering the underlying governing values. However double loop learning occurs when errors are corrected by changing the governing values and then the actions. A simple example is a thermostat that can be programmed to reset the temperature itself instead of just turn on or off at a pre-set temperature

This was one of the fundamental principles that enthused the workshop. It was also the manner in which the participants of the workshop tackled the project and the task in hand. It helped each participant gain insight into and enhance their competence for helping themselves and others to detect and correct difficult, potentially embarrassing, or threatening problems. It also showed how the learning context is used to design the learning experience in the delivery of the missing competences.



Figure 2 - The Outcomes

Action Reflection Learning (ARL)

This approach developed in Sweden (MiL Institute) during the 1970s and later in the USA was based on Prof. Reg Revans' principles. He created this learning for the UK National Coal Board in 1945 based on the formula:

$$L = P + Q \text{ (where Learning = Programmed knowledge + Questioning insight)}$$

Revans' Law then stated,

"For an organisation to survive, its rate of learning must be at least equal to the rate of change in its external environment"

(More on this when you attend the GlobalMET teacher-facilitator training programme in 2015/16)

Action research (AR) and action reflection learning (ARL), combined was a very effective approach for this project, consisting of practice, change, development and implementation. The participants were drawn enthusiastically towards this methodology to identify the shortfalls or gaps in the training and development for seafarers and then to meet the development and training needs for the competences within the gaps. The action learning and research into the current practices brought forth improvement opportunities to formulate strategies as timely interventions for MET and the regulatory administration to correct these discrepancies. The regulatory administration and the industry then must implement necessary public policy to uphold the changes.

As each focus group concentrated on their areas of interest and made the necessary actions to discover the gaps through research and direct questioning amongst themselves and external sources that they were able to reach, the gathering and collection of data became quite intensive.

From data collected, each focus group was able to identify the gaps and formulate learning and assessment strategies to provide for the delivery of training for each discipline and level of qualifications. To a very high degree the focus groups were engaged in several aspects of competency based learning. Some very relevant applications for successful outcomes were based on:

- ◆ Adult learning – andragogical approach (Knowles 1980)
- ◆ Learner centred strategies – transformational learning
- ◆ Collaborative learning and participative inquiry
- ◆ Work-based learning – WBL (work-place essential key performance goals & objectives) to industry standards or benchmarks.
- ◆ Performance based learning – engaging learned knowledge and application skills that were demonstrable by each participant, satisfying the domains of learning and dimensions of competency.

The delivery of training for the gap competencies must be performed by methodology in accordance with STCW requirements, that is, by Competency Based Learning (CBL) – Competency Based Education, Training and Assessments (CBETA).

Competency Based Learning or Competency Based Education Training & Assessment

This elusive learning and doing methodology has slipped away unnoticed as almost every institution continues to deliver by pedagogical approach, demanding memory learning, knowledge transfer (subject-centred), from text books and subject matter, strictly time tabled, teacher-centred, didactic, top down, by lectures mainly in a classroom environment and authoritarian dissemination of information and knowledge. These required compulsory memorising of data and information that had to be regurgitated, thus privileging examinations. These examinations, written and oral (viva voce) were graded with minimum pass marks of 50%, 60% or 70%, in most cases, indicating an insufficiently developed and trained i.e. a “*not yet competent*” entity. These forms of assessments, mostly were not aligned to any agreed benchmark or performance criteria (performance-centred, Knowles 1980 pp 44-45) and did not fully satisfy the conditions that must be reliable, valid, fair, consistent and authentic evidence of competence.

Current curriculum in many cases did not align directly to the standards and determined competences of the STCW code; i.e. not benchmarked to the competences per qualifications. Why is this so? Could competences be attained or achieved when not:

1. Identified clearly as a benchmark?
2. Described and nomenclatured accordingly - No clearly defined descriptors?
3. In accordance with standards - No performance criteria laid down?
4. Assessed with real-time evidence of performance having been attained?
5. 100% ability applying the required knowledge, skills and praxis in performing the task or tasks required to attain the competence?
6. Using universal competence outcome designed assessment tools that were rigorous, reliable, fair, flexible, authentic, consistent and valid, and so on? (*Guidelines for assessing competence in VET 2012*)

Faced with these questions, the workshop included intensive learning and praxis of CBL-CBETA. This was reinforced by CHED's publication “*Trilogy of Outcome based Education, 2014*”.

Ultimately all forms of MET must not only meet the populist of the domains of learning (Bloom, Krathwol 1956, 2002 & Harrow, 1972) but also satisfy the five dimensions of competency. The latter dimensions have been largely ignored by most MET institutions and regulatory jurisdictions, due to insufficient knowledge, skills and praxis of CBL – CBETA. The IMO instructions for writing model courses does indicate this gap. It was also seemingly obvious that there was little depth of understanding on how best to transform the learning and doing, applying the shift in paradigm from traditional pedagogy to CBL/CBETA, applying andragogy for learners who are adults and not children. Mariners young and old are mature learners who have experiential skills and knowledge and are in control of their destiny. This distinction meant that mariners need to be able to manage their learning. Facilitators in MET institutions must realise this and help their learners from the time they are enrolled as cadets. There is that compelling need to learn to manage their learning effectively. The transfer of the competences must be absolute and hopefully, not namby-pamby as seen in many cases.

Gaps

As each group worked on their respective areas of work, it was obvious that gaps in the delivery of competences was an issue. Gaps in regulatory administration occurred between the various bodies engaged in the areas of:

- ◆ Standard Curriculum
- ◆ Teacher development and training to facilitate the MET requirements of CBL/CBETA/OBE
- ◆ Standard of delivery of courses, training programmes and other training needs
- ◆ Assessments and examinations methodology and skills
- ◆ Overall administration and quality assurance in award of CoC and Licenses



Figure 3 - Building Human Capital in Maritime

Suggested Further Reading

Anderson, L.W., Krathwohl, D.R., Airasian, P.W., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J., & Wittrock, M.C. (Eds.). (2001). *A Taxonomy for Learning, Teaching, and Assessing*. New York: Addison Wesley Longman

Bloom, B.S., Engelhart, M.D., Furst, E.J., Hill, W.H., & Krathwohl, D.R. (Eds.). (1956). *Taxonomy of Educational Objectives – The Classification of Educational Goals – Handbook 1: Cognitive Domain*. London, WI: Longmans, Green & Co. Ltd.

Forehand, M. (2005). Bloom's taxonomy: Original and revised. In M. Orey (Ed.), *Emerging Perspectives on Learning, Teaching, and Technology*. Retrieved on July 7, 2009, from: http://projects.coe.uga.edu/epltt/index.php?title=Bloom%27s_Taxonomy

Guidelines to assessing competence in VET (2012) 4th Ed, Training WA, Government of Western Australia

Knowles, M. etal (1984) Moving from pedagogy to andragogy in Hiemstra R & Sisco B (1990) *Individualizing Instruction*, San Francisco: Jossey-Bass

Pappas.C (2014) 9 tips to apply adult learning theory to eLearning Inc.

Krathwohl, D.R. (2002). A revision of Bloom's taxonomy: An overview [Electronic Version]. *Theory into Practice, Volume 41, Number 4, Autumn 2002, pp. 212-218*.

In the next instalment:

Where to from here?

By

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Preventing Collisions: Construing & Complying

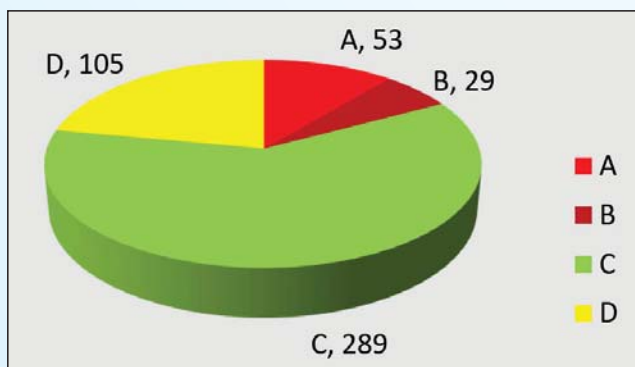
A Look at Rules 13, 14 and 15 from the Convention on the International Regulations for Preventing Collisions at Sea, 1972, as amended.



This Convention was last amended effective December 2009 with Annex IV revised. The next amendment is expected from January 2016 when Part 'F' gets added with Rules 39 to 41 to comply with IMO's III scheme, this change will be independent of the existing Rules.

Rules 13, 14 and 15 are placed in Section 'ii' of Part 'B' and apply only and only **'to vessels in sight of one another'** as per their placement and so stated in Rule 11. This is not clearly known, as many navigators continue to apply these three Rules, incorrectly, even in conditions of **'restricted visibility'** when vessels are **'not in sight of one another'**. In such latter conditions **'action to avoid collision'** should ideally be as per Rule 19(d) with Rule 19(e) acting as a last back up.

A simple question to differentiate the horizontal sectors or cut off limits of these three Rules quite frequently gets very variable answers. For example, Rule 15 of IRPCS states, **'when two power-driven vessels are crossing so as to involve risk of collision, the vessel which has the other on her own starboard side shall keep out of the way'**. What is **'her own starboard side'** sector gets a mixed answer response. Of the 476 responses in public workshops, 53 or 11.1% state **'anywhere from right ahead or 000° relative bearing till the starboard beam or 090° relative bearing'**



and 29 or 6.1% state **'anywhere from close to right ahead or 003° relative bearing on the starboard bow till right astern or 180° relative bearing'**.

This is alarming, 17.2% of officers holding a certificate of competency cannot comprehend the crossing sector clearly.

An exercise to help study and analyse these 3 Rules is given next to help achieve better understanding followed later by the best answers and comparison diagrams to check the exercise results. As such it is recommended the exercise be answered first before looking at the answers.

Before attempting the exercise please revise paragraph 9 of Annex I on horizontal sectors of lights. In addition IMO resolution MSC.1/Circ.1427 of 28th May 2014, quoted below, should be studied before attempting the analysis exercise.

Annex I, section 9(a)(i) – Horizontal sectors

COLREG Annex I, section 9(a)(i) would require the full intensity of the side lights to be maintained in the forward direction of 1° outside the prescribed sector with the practical cut-off between 1° and 3°. This is needed to enable other vessels to determine a "head-on-situation" as per COLREG rule 14.

Annex I, section 10(a)(i) – Vertical sectors

The vertical sectors of electric lights, as fitted, with the exception of lights on sailing vessels, should ensure that at least the required intensity is maintained at all angles from 5° above to 5° below the horizontal when measured at even keel.

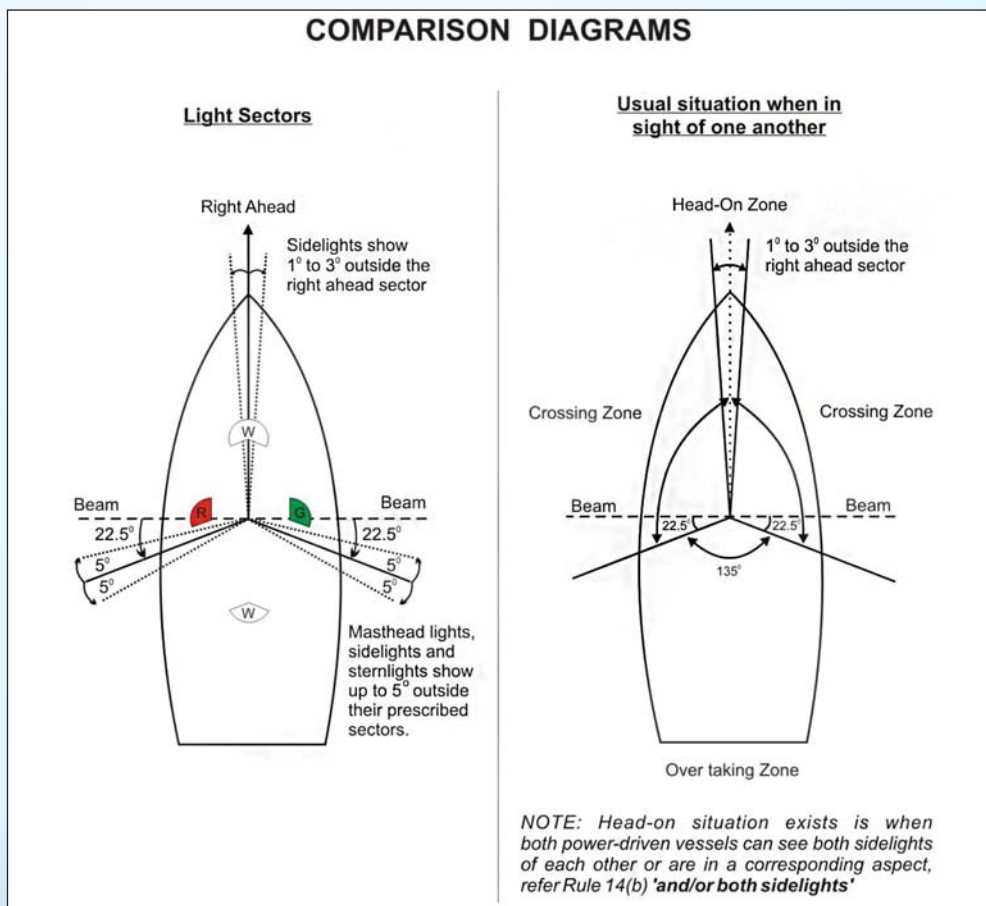
The blank exercise chart is given below with 5 sample answers, all answers to be determined and filled in after studying the rules and linking to the light sectors.

Rule no	The Rule applies to which vessels and how many?	Does the Rule use the term 'involve risk of collision'?	Does the Rule use the term 'doubt'?	Is the relative approach sector directly defined, defined by implication or may be determined by elimination – what are the sector angles?	Is there a corresponding light sector associated with the horizontal limits of the sector applicable to the Rule / situation? Please elaborate.
'13' Overtaking		No			The overtaking vessel can see only the sternlight of the vessel being overtaken.
'14' Head-on situation	Only to power-driven vessels, two vessels.	Yes			
'15' Crossing situation			No		

The chart with best or deemed correct answers is given below.

Rule no	The Rule applies to which vessels and how many?	Does the Rule use the term 'involve risk of collision'?	Does the Rule use the term 'doubt'?	Is the relative approach sector directly defined, defined by implication or may be determined by elimination – what are the sector angles?	Is there a corresponding light sector associated with the horizontal limits of the sector applicable to the Rule / situation? Please elaborate.
13 Overtaking	All vessels, the Rule implies 2 vessels	No	Yes	Defined, overtaking vessel approaching from more than 22.5° abaft the beam of the one being overtaken.	The overtaking vessel can see only the sternlight of the vessel being overtaken.
14 Head-on situation	Only to power-driven vessels, two vessels.	Yes	Yes	Defined, both vessels should be able to see both the sidelights of each other, which is a maximum of 3° on each side of the right ahead. Refer MSC.A/Circ. 1427 of 28-05-2012.	Yes, stated in paragraph 'b' clause: "and/or both sidelights" , this is the key. The sector cut off rests on sidelights. If vessels have 2 masthead lights then 'and both sidelights' , if 1 masthead light, then 'or both sidelights' .
15 Crossing situation	Only to power-driven vessels, two vessels.	Yes	No	Not defined: Whatever is not 'head-on' or 'overtaking' will be 'crossing'.	One vessel's single side light would be seen from the other.

To conclude, the above exercise should assist navigators get the sector concepts correct in mind, which would help them to analyse the situations correctly to start with and apply the correct Rules. The below diagrams should further help etch the concepts in the mind.



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People Learn and Develop

Some anecdotes

I was blinded by work and my drive for achievement.” The world gasped in awe when I first showed the results of my research. I felt a national pride and tasted the confidence that we Koreans could achieve things too,” he told a packed news conference.

The charges centred on the collection of human egg cells for his research and whether they were obtained voluntarily.

Dr Hwang apologised to the nation for ethical lapses in his work. He said he had not been truthful about the source of some of the eggs and had been too focused on results.

He said he was resigning from his official posts to show his contrition - but would continue as a researcher on the stem cell project.

Source: BBC News November 2005

The Conflicts Between Interest and Integrity

Case 1: Atlantic Eagle

Positions on the chart were falsified and log books and records were then completed in a manner aimed at ensuring consistency with the chart rather than being accurate, factual and indisputable as required.

Case 2: Alam Pintar

After the collision the master of Alam Pintar failed to report the collision and denied knowledge of the incident to authorities. On arrival at Hamburg, documents and records were found to have been falsified or destroyed.

Case 3: MV Rena

The master and navigating officer admitted making alterations after the grounding to the ship's GPS log, its passage plan and its computer to mislead investigating authorities.

Case 4: Rickmers Dubai

The vessel hit a towed un-lit barge whilst navigating in the traffic separation scheme (TSS) off Dover in the early hours. Based on the report, lookout was not on the bridge. The bridge navigational watch alarm system (BNWAS) was switched-off. The duty officer was listening to music on the bridge.

The master was not informed about the accident neither nor the relieving officer even though vessel was instructed by the shore traffic services (VTS) to save their voyage data recorder (VDR) data. Second officer denied about hitting the barge.

Hours later, vessel was instructed to stop and anchor off the TSS for further investigations.

Learning is a fundamental survival mechanism (The Human Element p 61). As a result, it is more – or less of a danger to everybody concerned, for without the right guidance, people learn the wrong things (The Human Element p 61).

The main purpose of maritime academies is to inculcate and instil values amongst its students: skills and competencies are next. Perhaps 80 percent of the time spent on campus should be on values and the remaining 20 percent on developing new skills.

Shipping is customer-centric. The relationship amongst various stakeholders is based on trust. We expect people to be honest in discharging their duties at all times. It is imperative that we include values in one of the specification tables of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) Code, 1978

References

The Australian Transport Safety Bureau (ATSB) independent investigation into the grounding of the Greek registered bulk carrier Atlantic Eagle at Maude Reef, off Albany, Western Australia 15 July 2008

UK Marine Accident Investigation Branch (MAIB) report on the investigation of the collision between the bulk carrier Alam Pintar and the fishing vessel Etoile des Ondes 15 miles north of the Cherbourg peninsula on 20 December 2009 resulting in one fatality and the loss of the fishing vessel

NZ Transport Accident Investigation Commission (TAIC) Interim Report Marine inquiry 11-204: Containership MV Rena grounding on Astrolabe Reef 5 October 2011

Report on the investigation of the collision of Rickmers Dubai with the crane barge Walcon Wizard being towed by the tug Kingston in the south-west lane of the Dover Strait Traffic Separation Scheme on 11 January 2014

The human element – a guide to human behaviour in the shipping industry by UK Maritime Coastguard Agency (MCA)



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