ARAB MARINER

Specialized Maritime Newsletter

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Ship Crewing Challenges

By Dr. Mohamed Dawood

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How AIS & big data are changing the maritime industry

By Mr. George Touros,

6 Marlog 2017

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ArabMariner@aast.edu

Academic Degrees on their way to European Accreditation

Dr. Mohi El Din El Sayeh,

DEAN, COLLEGE OF MARITIME TRANSPORT AND TECHNOLOGY, AASTMT

"Accreditation Agency (ZEvA) paid both the College of Maritime Transport and Technology (CMTT) and the Maritime Postgraduate Studies Institute (MPI) a site visit."

The Arab Academy for Science, Technology and Maritime Transport (AASTMT) has witnessed a very important event in the period from 26th to 28th of September 2016, when a 5-expert team delegated from the Central Evaluation and Accreditation Agency (ZEvA) paid both the College of Maritime Transport and Technology (CMTT) and the Maritime Postgraduate Studies Institute (MPI) a site visit. This visit represents one step in the procedure of evaluation and accreditation of the Bachelor programs of the College and two Master's programs of the Institute, as will be detailed shortly.

ZEvA, centered in Hanover, Germany, and established in 1995, is one of the most reputed evaluation and accreditation bodies in Europe. Its main fields of activities include evaluation and accreditation in higher education governance, management and quality assurance. ZEvA has successfully cooperated with higher education institutions in Germany, Europe and beyond. Recently in May 2015, the WMU M.Sc. and Ph.D. programs in Maritime Affairs were accredited by ZEvA for five years.

The process of evaluation and accreditation of our programs has been thought of within the framework of the fifth strategic objective of the Academy, that is "Global reach" and the corresponding objective of the College, that is "Qualifying the graduates of the College in such a way that makes them among the best graduates in the local and international maritime industry market". These programs are "Maritime Transport", which encompasses four streams, namely: Maritime Technology, Maritime Safety and Environmental Protection, Shipping and Port Operations and Offshore Operations Technology, as well as two engineering streams, namely: Marine Engineering Technology and Marine Electrical Technology.

The process was initiated by prof. Dr. Ismail Abdel Gafar Ismail Farag, President of the Academy. Accordingly, the college dean , Dr.El-sayeh responded immediately by heading a committee consisting of the Vice Dean for Education, the Vice Dean for Postgraduate Studies, the Quality Assurance Representative, the Strategic Plan Coordinator, as well as other members from the concerned departments. The task of this committee was to prepare a self-report of the College, to be submitted to ZEvA. According to ZEvA's guidelines manual.

It is felt important to mention here that a key person of the committee was the Late Capt. Mohsen Fekry, who took the burden of preparing the third part of the self-report. Having been prepared and thoroughly revised, the self-report was submitted to ZEvA in June, 2016. One week later, ZEvA responded with a few comments and queries which were studied carefully by our committee and supplementary material was sent to ZEvA in July, 2016. Following this step, a site-visit was scheduled in Sept.2016.

The three-day visit paid by the ZEvA delegate was full of activities. The delegate consisted of two professors, Prof. Dr. Roland Behrens and Prof. Dr. Klaus Harald Holocher, representing the Academia; Capt. Ulrich Bosl representing the industry; Mr. Jan Manuel Kubiczek as students representative and Mrs. Anja Grube representing ZEvA.

They first met with Prof. Dr. Ismail Abdel Gaffar Ismail Farag, President of the Academy on Monday, Sept. 26, 2016, in addition to two other meetings on Tuesday and Wednesday 27th and 28th of September to make sure that the delegate is doing its job with ease and comfort.

The delegate spent these two days conducting a comprehensive site visit to the College, during which the ZEvA experts have introduced to the College and compass

facilities. More specifically the delegate started its schedule of Tuesday, Sept.27th , by a meeting with the Deans of CMTT and MPI, together with the vice Deans of both institutions. This meeting was followed by a visit to the College labs and simulators, the engineering workshops, the Industry Service Complex, the Planetarium and the Maritime Safety Institute. Then, they had a meeting with the heads of the College departments followed by a meeting with the Quality Assurance team of the College and Departments.

The last day of the visit, Wednesday 28th of Sept. witnessed a 2-hour meeting with a sample of the College students and graduates.

Secondly, the ZEvA team took a tour to the electrical engineering and automatic control labs as well as mechanical engineering labs followed by another tour to the Integrated Simulators Complex. Then, they had another meeting with College staff followed by a closed meeting on their own, before they met with the College Management and staff to brief their visit.

At first, the delegate stated that the College has excelled their expectations as well as the STCW requirements and that they are extremely impressed with the following: Electronic Library; Advanced teaching methods, Specially simulators-based teaching system; Favorable and suitable Maritime Education and Training (MET) environment; Living and applied Quality Assurance System (QAS) and strategic plane; Flexibility in conducting open discussions with the students and the lecturers; Level of care and support provided to the students; and High level of transparency. Moreover, they suggested that the College Website should be enriched with more details on the courses, teaching and grading systems, since the real services provided exceed the level of information demonstrated on the site. By doing so, the marketing efforts will be enhanced and more students are likely to apply to study at CMTT.

The CMTT Dean then took the word, thanking the delegate for taking the burden of trying to finish their job within a limited time through a very condensed schedule. He also expressed his gratitude and thankfulness to each and every individual in the College for the effort they have all done and for the enthusiasm they have shown.

ZEvA is expected to send a detailed report on the visit within four to six weeks. The College would respond within two weeks and the final decision will be taken at the ZEvA's Board meeting, scheduled on January, 2017.

How AIS & big data are changing the maritime industry

Mr. George Touros,

AIS NETWORK DEVELOPMENT, MARINE TRAFFIC

> ***"The maritime industry has always been rather conservative and although it is considered a low-data industry, it is now taking small steps into the digital age"***

The shipping industry is moving into a digital era that will be driven by a constant stream of data between industry stakeholders. AIS is playing a major role by providing global visibility and greater access to data for analysis, helping with forecasting and improved decision making.

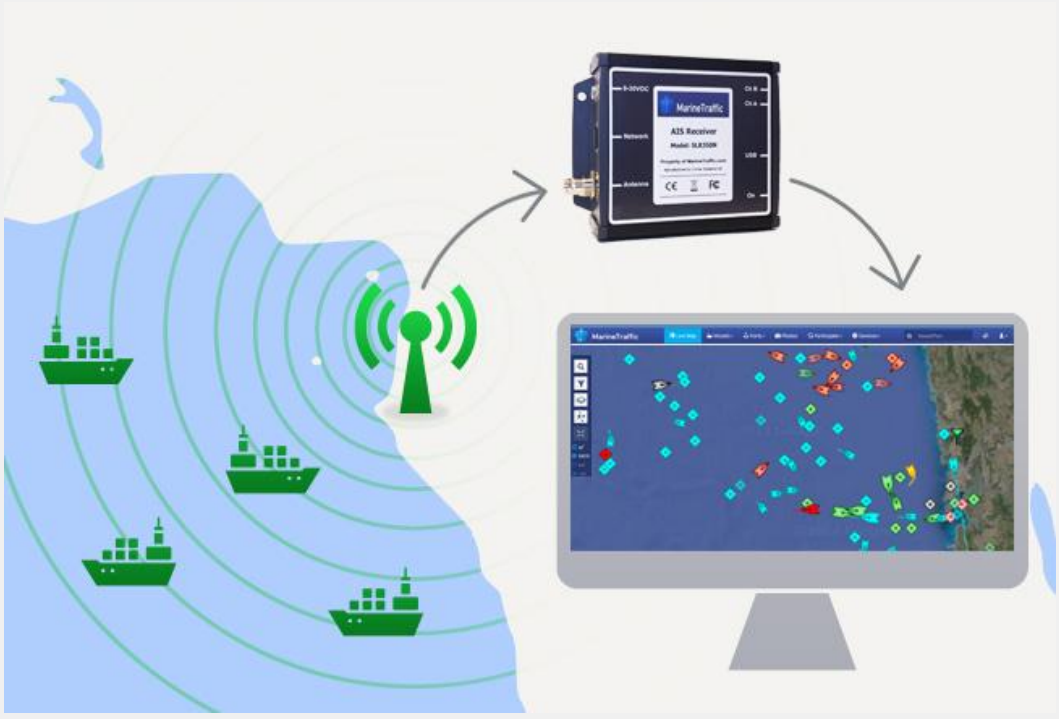
MarineTraffic, a global ship tracking services used by millions across the world is at the forefront of this movement, leveraging AIS technology to provide superior online tracking and data services. This has resulted in the international shipping industry beginning to embrace the tangible opportunities that the growth of big data represents.

Operating the world's most extensive AIS stations network, together with with a leading constellation of satellites, MarineTraffic delivers the most comprehensive AIS tracking facilities available, offering an end-to-end service that tracks vessel positions and displays them on a map at real-time.

So what is AIS?

The Automatic Identification System (AIS) is an automated tracking system which is extensively used in the maritime world. Thanks to it, static and dynamic vessel information can be electronically exchanged between (terrestrial or on-vessel) AIS-receiving stations. Since December 2004, the International Maritime Organisation (IMO) requires all passengers' vessels, as well as all vessels over 299 Gross Tonnage (GT) to carry an AIS transponder (which trans`mits and receives AIS data) aboard.

AIS transponders (on-vessel stations) include a GPS (Global Positioning System) receiver which collects the subject vessel's position and movement details. Such (dynamic) details along with other static information provided by the vessel's crew are automatically broadcasted at regular intervals via a built-in VHF transmitter using 2 specific VHF channels
(161.975 Mhz and 162.025 Mhz - 87 & 88 old VHF channels).



Collecting and using the data

The periodic AIS-data broadcasted information can be received by other vessel or base stations (provided they are within range). Then, with the use of special software, it can be processed and depicted on chart plotters or on computers (for example, on the MarineTraffic Live Map). MarineTraffic currently has one of the largest terrestrial AIS station networks in the world, mostly operated by contributors who are using MarineTraffic-provided equipment or have added their already existing AIS-receiving stations to the MarineTraffic network. AIS-data can also be received by satellites - in this case, the term S-AIS is used (Satellite AIS).

AIS message packets are encoded in NMEA sentences (64-bit plain text). A sample is shown below:

!AIVDM,1,1,,B,1INS<8@P001cnWFEdSmh00bT0000,0*38

The contents of any incoming NMEA sentence can be decoded. This way, information on the following three basic sections can be deducted:

1. Dynamic Information, such as the subject vessel's position, speed, current status, course and rate of turn.
2. Static Information, such as the subject vessel's name, IMO number, MMSI number, dimensions.
3. Voyage-specific Information, such as the subject vessel's destination, ETA and draught.

The central database constantly receives and processes large amounts of AIS-data and stores the most important part of it (together with geographic information on a multitude of ports and areas, vessels' photos and other details). It is also utilised to display the relative information on the MarineTraffic Live Map.

How data can help the maritime industry

Although live tracking is an integral part of what MarineTraffic does, it's only a small example of the service's capabilities. All this data we collect and process can also be used to analyse global shipping movements and help give a better account of how the maritime industry operates. For example the data could be used to analyse what effect lower bunker prices are having on traffic through the Suez Canal, or how the lifting of Iran's trade embargo has impacted traffic in the Persian Gulf.

That is why it is important that MarineTraffic continues its effort to increase its global reach and provide the most reliable data. To do so MarineTraffic is looking for partners to join its community. These partners will be able to contribute by installing an AIS-Receiving station and start sharing the AIS-data of their area with us and, consequently, with the whole world.

The maritime industry has always been rather conservative and although it is considered a low-data industry, it is now taking small steps into the digital age. The industry is recognising that remote access monitoring, forecasting and data analytics are not only significantly improving and optimising operations and ship management, they are also helping to make shipping more transparent and more efficient. This will lead to a more sustainable maritime industry, which is something we must all strive for.

Dr. Mohamed Dawood,

VICE PRESIDENT OF MARITIME AFFAIRS, AASTMT

> **"Globally, ship management field crewing represents one of the biggest challenges for a ship manager."**

Ship Crewing Challenges

A shipping company's crewing department is a human resources department responsible for creating, implementing and/or overseeing policies governing seagoing employee behavior and the behavior of the company toward its employees.

Crewing department are the people who work for the organization; Maritime human resource management is really employee management with an emphasis on those seagoing employees as assets of the shipping business. In this context, seafarers as human capital. As with other business assets, the goal is to make effective use of employees, reducing risk and maximizing return on investment (ROI).

Areas of Maritime human resource management oversight include – among many others -- employee recruitment and retention, exit interviews, motivation, assignment selection, Maritime labor Convention 2006 compliance, performance reviews, training, professional development, mediation, and change management.

Currently, crewing represents in ship management field globally as one of the biggest challenge for a ship manager.

We could identify three areas of activities among all ship managers participating:

Organizationally, many shipping companies re-insource crewing activities again to gain more control and quality than with purely "temporary workers" via crewing agencies. As qualified crew becomes harder to find, many ship managers build up a pool of own officers that keep coming back to their vessels. It is then possible to involve senior officers much more in the vessel management, quality control and financial performance.

This can be done by employing them themselves or at least managing this pool closely together with the agency. This requires proper integrated systems to do so.

Culturally, a lot of focus is given to training, development, welfare package and teamwork. Many experienced seafarers say: gone are the days when the crew would hang out together in their spare time, making music, playing games and enjoying their time together. Today everybody stays in their cabin with their note-book, which poses a challenge to teamwork and a "feeling part of" a company or a bigger task.

Process-wise, re-insourced crewing processes need proper system support also given the increasing requirements of the Maritime Labor Convention (MLC).

We would summarize key elements of best practice in crewing:

- Invest in culture and teamwork
- Invest in crew welfare packages
- Integrate training, appraisal and development management systems
- Use a combination of personal and computer-based training

There are 4 soft skills in particular had been detected that shipping companies are desperate to find. We're here to tell how crucial to infuse training for these skills in Maritime institutes training process.

#1. Strategic Thinking is the rarest and most desired soft skill employers seek is strategic thinking. This is a tough skill to find not just in younger generations, but in leaders in general.

#2. Creative Problem-Solving "Many people have the misperception that you're born creative or you're not, but creative people aren't born, they're made…Creativity is mostly a consequence of intending to be creative."

#3. Leadership Skills, Yet, this generation continues to lack critical leadership skills.

#4. Communication Skills, Is it really a surprise many young college graduates aren't the best at communicating?

INTER ORIENT SHIPMANAGEMENT

Deck Officer Apprentice

AOD
Elsaid Salah Abdelsabour Sebaei

I can't forget my first impression when I saw the ship which I'm going to join for the first time on the jetty, it was some kind of worry about a how?!! How I will be able, one day, to handle this big ship alone but this impression did not disappoint me but on the contrary it increased my stamina and my curiosity to finish this training with experience that makes me qualified enough to do this job.

Since that time my target was to know everything about my future job. My first time was onboard "Norient Saturn" where I learned many things and the most important thing I discovered that a navigator job is not only to have knowledge but also to have the confidence in yourself and to believe in your decisions because sometimes the situation is very critical and you have to do the correct action at the correct time. I learned many other things onboard that ship starting from navigation, deck work, safety issues, and also some paper work. Now, I'm onboard Ridgebury Rosemary E and in the second time it was different, my worries started to fade away and I continued working on myself giving more attention to my expected duties in future with support from officers onboard. The most important thing this time was that I had a chance to attend in cargo control room and learn how the cargo operation is carried out and stayed at watch in the bridge with the 3rd mate which gave me real and actual experience to be qualified to such a job at the end of my training.

I am doing my best to follow the training methodology and to finish company training requirements such as Computer based training, Company specific training and records books as it is also very useful and helpful especially for fresh seamen like me.

I found life on board tough but it also have many advantages such as being with a mixed crew from different cultures is an interesting experience, also I think traveling around the word is the best thing about our job it keeps you always interested about next port of call.

I'm grateful to being on board and I hope to become an officer soon and a good captain in near future.

Engine Officer Apprentice

AOE
Agina, Adham Hassan

After working onboard, I realized what the word seaman means and I'm really proud that I became one of them. Actually I love my job especially when you are engineer, every day you have different problems which may arise and every day you can have a new experience. I was on board of an "Asphalt Carrier" earlier and now I am on board of "Ridgebury Rosemary E". I think the training on board is a good experience for any cadet if he just uses this training in the most effective way. This time, before I join the vessel, I had already prepared a schedule for what I'm going to study in terms of systems and machinery, in addition to actual practice.

I also gave special attention to my next rank responsibilities. The engineers on board were welcoming and gave me the support I needed to gain good experience as well as confidence.

In my opinion, on board training is the most important part in my academic study because sometimes you can't find everything in the books or it cannot describe the real situation very well. Definitely, it was very important to have good basics and theoretical knowledge about the principals of everything but with actual practice the knowledge is going to firm in your mind, you can't forget the things which you did with your own hands, moreover, here on board, the Computer Based Training CBT and Company Specific Training CST are very helpful to increase your knowledge about everything that is beside the drills we make and safety meetings which increase my safety awareness in parallel with the technical training.

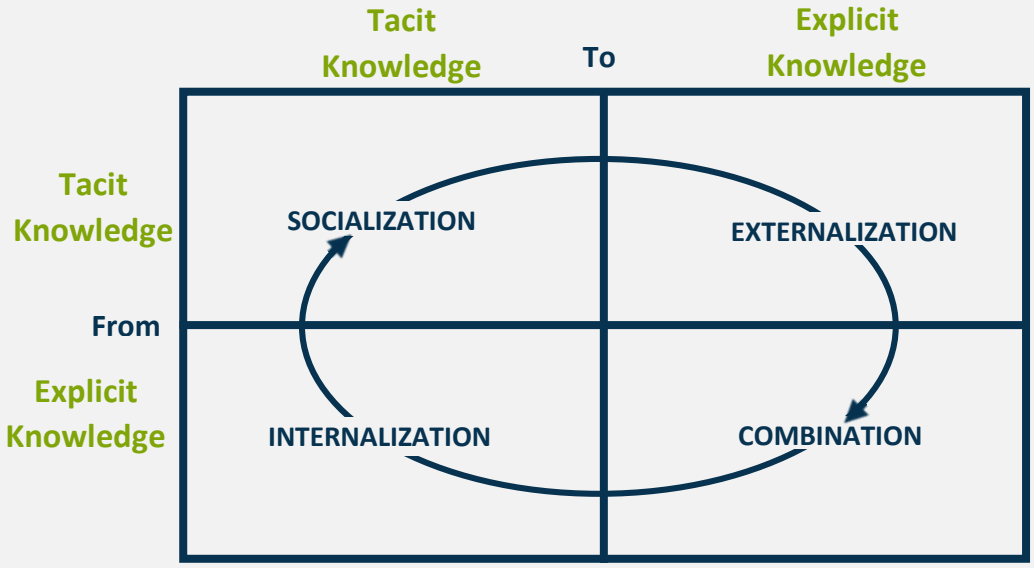
I'm really glad to be onboard earning this experience and being with a multinational crew we exchanged our cultures together and had a lot of fun with each other this make me change my mind about working with mixed crew because I didn't imagine it that way before I joined the ship, I thought that I will have no support and that they will be arrogant or I will face some racism but any way I was prepared for the worst case scenario. On the other hand, the most interesting part was that we travelled everywhere around the world, in every port you have a new life experience meeting with other cultures, seeing new places you

How to Transfer & Retain Knowledge

Capt. Amr Moneer,

MARINE LECTURER INTEGRATED SIMULATOR COMPLEX, AASTMT

Educational knowledge is pretty much complicated; it is a strong mixture of implicit and explicit knowledge, to the extent that a decent education process cannot be built on one type without the other. Based on Nonaka & Takeuchi theory on organizational knowledge creation, where it says that the best results of flowing of information through an organizational Knowledge Management system (KM) happens when the knowledge is converted from implicit to explicit continuously and dynamically, as illustrated in the figure below



Therefore, it is important to manage the cycle of knowledge very carefully to ensure the complete beneficence of the information within. Nonaka & Takeuchi theory has four pillars; socialization, externalization, combination, and internalization.

Implementing Nonaka & Takeuchi Cycle In Mets As Follows:

1. SOCIALIZATION (IMPLICIT TO IMPLICIT)

Experienced teachers share implicit knowledge with the new incomers based on the “share and learn” concept. “People still turn first to other people as they seek solutions to problems and knowledge”.

This step is mostly done through formal/in-formal Communities of Practice (COPs), technology may also be used to support knowledge sharing and learning process.

2. EXTERNALIZATION (IMPLICIT TO EXPLICIT)

This step is divided into two parts:

Capture and Acquire: where new teachers gain implicit information from the close socialization with seniors in a COP, then tries to converse it into explicit knowledge by recording it into the "Content Management System" CMS, e.g., attending a lecture with an experienced teacher and trying to record notes of tactics used during the lecture, body movement, voice tone, analogies, metaphors etc…, the main challenge here is the ability of the new teacher to capture this implicit knowledge from his tutor.

Organize: After establishing a KM system that enables organizing and editing the context, a suitable CMS would be a useful platform for new teachers to upload their findings and recording the knowledge gained from their socialization. This platform can even be used by the management as an assessment tool to assess all teachers and quantify their performance as discussed earlier.

3. COMBINATION (EXPLICIT TO EXPLICIT)

This is where the new explicit knowledge added by the new teacher is joined in the CMS with other explicit knowledge recorded from other teachers, resulting in a resourceful and enriched database. Now the information can be circulated, shared, evaluated, and (more importantly) accessed through a search engine using technological and statistical methods capable of retrieving the required content.

4. INTERNALIZATION (EXPLICIT TO IMPLICIT)

This is the process where teachers practice repeatedly what they have learned as explicit knowledge, either from the database, in training sessions, or in real classroom environment supervised by a senior staff member. This internalization period lasts until the new teacher accommodates a satisfying level of implicit knowledge, and only then, the management can end his training period and confirm his employment.

To that point, the cycle will have had completed its first round and starts a new round for additional knowledge building up in the data base, conditioned by the participation of senior/junior staff members under managerial supervision.

THE DESIGN AND STRUCTURE OF THE MET RELATED KM SYSTEM (EXPLICIT TO IMPLICIT)

A MET Related KM system can (and was) established by doing the following:

1. Construct Communities of Practice (COPs) from expert teachers in different subjects and specialties (representatives) to extract different expertise and different ideologies and backgrounds. COP of navigation teachers, COP of stability teachers, etc….
2. Encouraging the formation of formal &non-formal COPs of teachers and try to institutionalize these groups.
3. Establish a Content Management System (CMS) suitable to deal with different types of knowledge (implicit–explicit).
4. Force/encourage teachers to participate in the formal/in-formal COPs and provide feedback.
5. Management may use CMS to monitor the progress of junior teachers and evaluate accordingly.
6. Teachers who will not participate in the system will be sanctioned or may even get their contract terminated, depending on their progress verses time allowed.
7. May be used in calibrating the performance of senior teachers, through evaluating the data recorded by the juniors explicating the knowledge they gained from them.

AASTMT President at the World Maritime University

Within the Arab Academy for Science, Technology and Maritime Transport (AASTMT) distinguished relations with different world universities, as for selecting H.E Prof. Dr. Ismail Abdel Ghafar Ismail Farag – AASTMT President

to be a member to serve on the Board of Governors for the World Maritime University (WMU) as being the president of one of the greatest organizations specialized in the field of maritime transport, H.E AASTMT President met H.E Prof. Dr.Cleopatra Doumbia Henry - WMU President on Wednesday 24- 5- 2016, in Malmo - Sweden, to discuss the methods of cooperation which are always looking forward to new future prospects.

WORLD MARITIME UNIVERSITY

OFFSHORE Support Vessel Market Opportunity Analysis

Capt. Tarek Talaat,

FLEET OPERATIONS & CONTRACTS MANAGER, BOURBON GULF

SAFETY TAKES ME HOME

Middle East, the increased exploration activity has led to the increase in the jack up rig count which is a major driver for the offshore support vessels market. With new oil and Energy and Power projects coming up along the region, Middle East market for offshore support vessels is on the rise. There has been a significant evolution of offshore support vessels in terms of reliability, diversification, and in their worldwide operation and water depth capabilities.

The different categories of offshore support vessels available today are increasing with an increase in technological sophistication. As oil and gas explorations move towards deeper waters, multi-functional offshore support vessels are now called upon to perform different tasks, and have created various niches or categories within the market. Present day offshore support vessels are equipped with increased cargo capacity, panoramic navigation bridge visibility, large accommodation spaces, enhanced crew amenities and state-of-the-art propulsion and automation systems.

Vessels designed for inspection, maintenance and repair are generally equipped with large accommodation spaces, heavy lift cranes, helidecks and streamlined bow forms for operation in harsh environments. Vessels specialized for multi-tasking carry out maintenance and repair operations on platform facilities as well as subsea pipelines and equipment.

Efforts are now underway globally to explore new areas for oil and gas in view of decreasing reserves. Operators and explorers are now moving in to much deeper seas, where the use of subsea systems is prominent. Factors such as declining oil and gas reserves, increasing

energy demand, and growth in subsea exploration activities are driving the market. On the flip side, environmental barriers such as occasions when the operators are forced to work in harsh environments, high initial costs, and lack of skilled labor are constraining the growth of the market.

The Market Definition for offshore support vessels along with identification of key drivers and restraints for the market. Identification and analysis of macro and micro factors affecting the Middle East offshore support vessels market, with region specific assessments and competition analysis on a regional scale have been carried out. Identification of factors instrumental in changing the market scenarios, rising prospective opportunities and identification of key companies which can influence the market on a regional scale have been discussed in detail. An extensively researched competitive landscape section includes the profiles of major companies along with their market share, analysis of their current strategic interests and their key financial information.

The global offshore support vessel market is accounted for USD 29.15 billion in 2015 and is estimated to reach by USD 43.07 till 2022 at a CAGR of 5.7%

Discovery for new oil and gas fields offshore and its growing demand are the major factors which the driving the growth of the market for offshore support vessel. Along with this, rising offshore activities and increasing investments for infrastructure are also responsible for driving the market growth. Offshore support vessel helps in offering the services to offshore pipe in activities of production and exploration. Continuous advancement in technology and high innovations in their product are offering great opportunity for the market growth of offshore support vessel. Though the market includes several driving factors but there are some of the factors which are hindering the market growth such as high cost of maintenance and replacement cost for offshore support vessel.

The offshore support vessel global market is segmented on the basis of its type and depth of the OSV. Based upon the type the global offshore vessel market is classified by anchor handling (AHTS), multipurpose service, towing & supply vessel, platform supply vessel, crew boats market, standby vessel. Based upon the depth the global market of offshore support vessel is classified as seep water offshore support vessel, shallow water support vessel. Anchor handling and towing supply vessel are designed for positioning from one place to another for tow rigs and anchor rigs. These anchor handling and towing supply vessel type supports constructional projects and offshore drilling pipe. The anchor handling & towing supply is estimated to dominate the market.

Deepwater offshore support vessels are expected to witness largest market share for OSV market. With maturing in onshore oilfields and subsea the offshore market is estimated to rise significantly during the coming years in which regions like North America, Latin America and Europe, West Africa are leading in total expenditure and resulting for highest growth rate for Deepwater offshore support vessel and this are quite ahead as of shallow water offshore support vessel.

STORY OF SUCCESS

Capt. Mahmoud El-Sayed El-Bawab,

RESPONSIBLE FOR INTERNATIONAL MARITIME RELATIONS, VICE-DEAN OF MARITIME POSTGRADUATE STUDIES INSTITUTE, AASTMT

Centuries ago maritime industry brought countries and continents closer and within the last two decades international maritime industry became more crucial for the international economy, as the demand for maritime transport services and World Seaborne Trade volumes were steadily increased (UNCTAD, 2016). Nowadays around 90% of the world trade is carried by ships.

Development of international maritime industry remains subject to the success in promoting its main components: Man, Machine, management policy and Capital. Thus forcing Maritime Education and Training (MET) to be of a higher, more consistent quality with highly technical skills and knowledge. This advanced training and competency of human element helps to withhold and maintain safe, secure and success shipping.

The Arab Academy for Science, Technology and Maritime Transport (AASTMT) and since its inception in 1972, is providing maritime education and training to organizations and companies all over the world. Nowadays, AASTMT playing a vital regional and international role in educating, training and preparing youth in Middle East and Africa for a prosper maritime career. Moreover, the AASTMT keeps abreast with international developments through alliances (agreements) with major universities in their respective fields.

AASTMT, from regional and international perspectives, offers ongoing support to Maritime Administrations of the Arab countries to fulfill their responsibilities and obligations in-front of the international community and the IMO. This support is provided through counseling and advisory services, as well as through offering optimal development and training programs for their Students and employees, as I go through the AASTMT historical achievements in the following lines, trying to shed some light on the main AASTMT events.

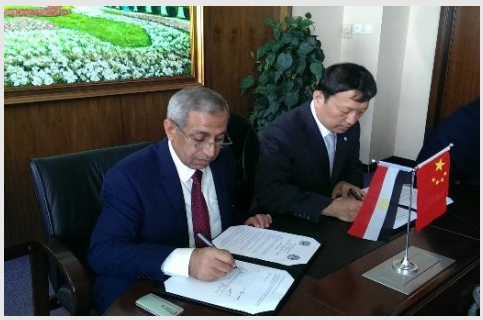
In **2012**, the AASTMT signed an MOU with the World Maritime University (WMU) allowing teaching staff; about 60 lecturers; to get their MSC degree from the WMU.

2013 was a fruitful year as the AASTMT hosted a field trip of a group of students from more than 13 nationalities, for the first time, the students were enrolled in one of the WMU MSC programs. Followed by, a visit of three WMU expert professors to train more than sixty maritime lecturers on various marine instructor training courses.

Also, AASTMT signed an MOU with Shanghai Maritime University (SMU), and since that time and based on the students' exchange program of the MOU many students from both universities have transferred among different educational programs.

Moreover, the AASTMT cadets and students are participating in the summer school that is held annually in SMU under the auspices of the Chinese government.

In **2014**, the AASTMT has signed an MOU with Dalian Maritime University (DMU). A bilateral agreement in postgraduate studies and scientific research programs is expected to be signed under the terms of this MOU shortly.



In **2015**, the ex-secretary general of the International Maritime Organization Mr. Koji Sekimizu has chosen H.E Prof. Ismail Abdel Ghafar the president of the AASTMT to be a member of the Board of Governors of the World Maritime University (WMU).

The AASTMT believes that knowledge drives innovation, hence it keeps encouraging and supporting its students to participate and attend in various scientific activities and events, actually, there are three training fellowships provided from NASA to AASTMT students. Moreover, in July 2015 the AASTMT cadets participated in the workshop of IAMU Student Forum that been held in Tokyo under the auspices of the IAMU, Nippon Foundation and Japanese Ministry of Transport within celebration of Japan by the world maritime day 2015

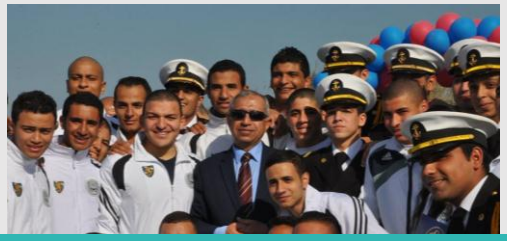
In October **2015**, the AASTMT cadets participated in the student conference that been held in "Opatjia – Croatia" during the Annual General Assembly activities "AGA16" of the IAMU.

In April **2016**, the AASTMT has been selected to be a member of the International Executive Board (IEB) of the International Association of Maritime Universities (IAMU), and also has been chosen as a member of the IAMU-IEB main committee for Policy and Planning (PPC).

The AASTMT signed a new MOU with the Malaysian university "Netherland Maritime Institute of Technology – NMIT". This MOU will be a launching point for strong and mutual cooperation in both undergraduate and postgraduate maritime studies programs.

At the end of October **2016**, a group of cadets participated in the student conference held during IAMU AGA17 events in Hai-Phong Vietnam.

As a conclusion, the international maritime industry plays an important role in our life. In the terms of maritime manpower, MET considers crucial to withhold and maintain safe, secure and success shipping. AASTMT always recognizes the importance and magnitude of its regional and international role, with its ultimate goal and strategic mission to provide a high level of education for the new generation of seafarers.



By:

ClassNK

ClassNK has been working to further improve the structural safety of large container ships and recently updated its rules to reflect the latest findings from a casualty investigation and independent research into brittle crack arrest design.

Bigger ··· Better ··· Safer

Amendments to structural strength requirements of large container ships

ClassNK established the Investigation Panel on Large Container Ship Safety (NK Panel) in response to a large container ship casualty in June 2013. It comprised of shipbuilders, shipping companies and academic experts, and was put together to investigate the possibility of casualty occurrence and the structural safety of large container ships.

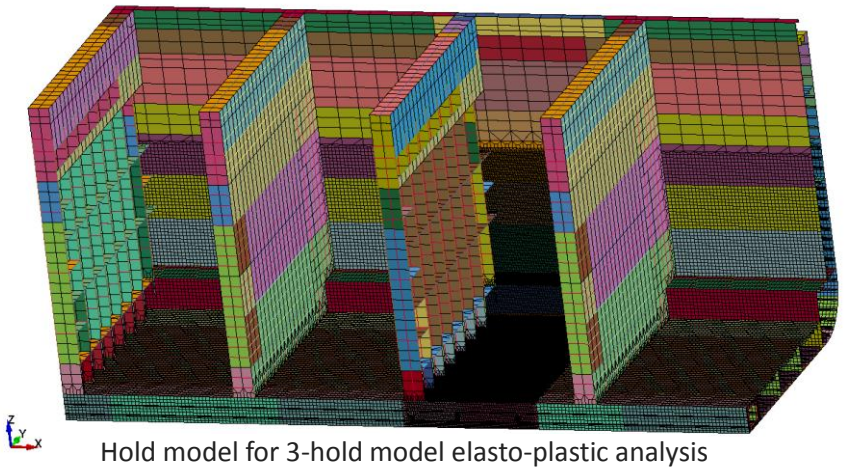
NK Panel conducted 3-hold model elasto-plastic analyses for a number of large container ships ranging from 6,000 TEU class to 8,000 TEU class and investigated the hull girder ultimate strength in consideration of the effects of lateral loads such as bottom sea pressure and container loads. This 3-hold model elasto-plastic analysis could most precisely simulate actual structural behaviors that lead to the fracture.

The results from the investigation of the NK Panel were published in the Investigation Report on Structural Safety of Large Container Ships in September 2014, in which it was concluded that the lateral loads such as bottom sea pressure and container loads closely affected the hull girder ultimate strength of container ships.

Meanwhile Japan's Ministry of Land, Infrastructure, Transport and Tourism established the Committee on Large Container Ship Safety (JG Committee) and carried out investigations into the structural safety of large container ships. JG Committee published its Final Report in March 2015, in which it was recommended that the following two effects were to be explicitly considered in the classification rules and the unified requirements of IACS for large container ship structural strength.

- The effect of the lateral loads such as bottom sea pressure and container loads acting on the double bottom structure on the hull girder ultimate strength
- Effects of whipping responses (vibratory hull girder response caused by impact loads such as slamming) on the vertical bending strength

Furthermore, IACS adopted the new unified requirements on the structural strength of container ships, Longitudinal Strength Standard for Container Ships (UR S11A) and Functional Requirements on Load Cases for Strength Assessment of Container Ships by Finite Element Analysis (UR S34) in July 2015.

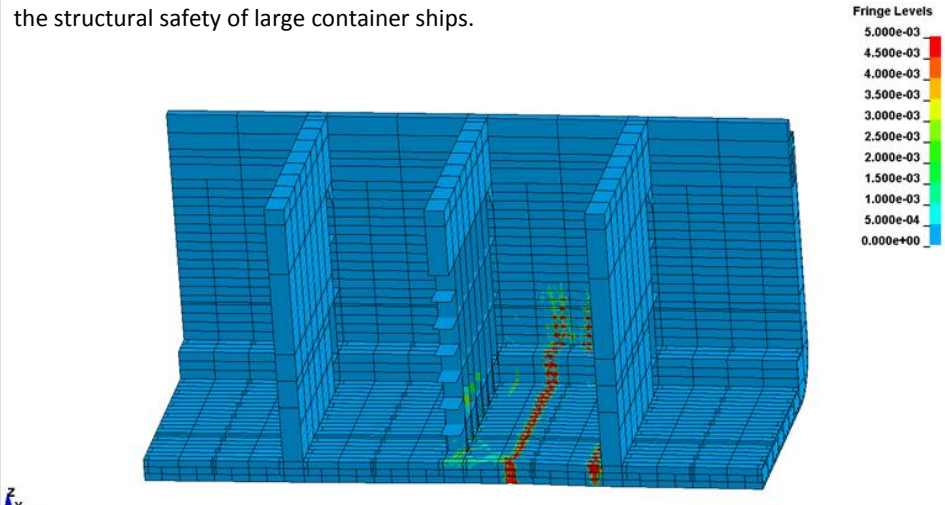


Hold model for 3-hold model elasto-plastic analysis

In December 2015, based on the knowledges obtained through the investigations of NK Panel and JG Committee, ClassNK updated its Rules and Guidance for the Survey and Construction of Steels Ships on structural strength of container ships.

In the update IACS UR S11A and UR S34 were incorporated into the NK Rules. Furthermore ClassNK introduced an additional longitudinal strength requirement for the hull girder ultimate strength of large container ships, which was uniquely developed by ClassNK and could explicitly consider the effect of the lateral loads and the effects of the whipping responses. The introduction of the additional requirement has made it possible to evaluate the hull girder ultimate strength of large container ships with direct consideration of the effect of the lateral loads and the effect of the whipping responses on each individual ship.

These updates of the Rules are expected to greatly contribute to further improvement of the structural safety of large container ships.



Result of 3-hold elasto-plastic analysis

Container ships have large cargo openings for convenience of container loading/unloading, and thicker steel plates are applied to structure members of hatch side coaming and upper deck in order to ensure the required hull girder strength. The thickness of the applied steel plates has become thicker and thicker due to enlargement of container ship size, and the possibility is considered that extremely thick steel plates exceeding 80mm might be used.

To enhance the structural reliability of large container ships, IACS released its unified requirement (UR) on brittle crack arrest design for the use of extremely thick steel plates in January 2013. The UR outlines the necessary measures to be taken for the prevention of brittle crack propagation in the event of occurrence of a crack.

The UR states that brittle crack arrest steels plates with a thickness of 80mm or less must have a brittle crack arrest toughness value (Kca) of 6,000 N/mm3/2 or more under the standard minimum designed temperature. However, there are no specific requirements for cases where the thickness of brittle crack arrest steel plates exceeds 80mm, in which the required brittle crack arrest toughness value (Kca) must be specifically agreed with each Classification Society.

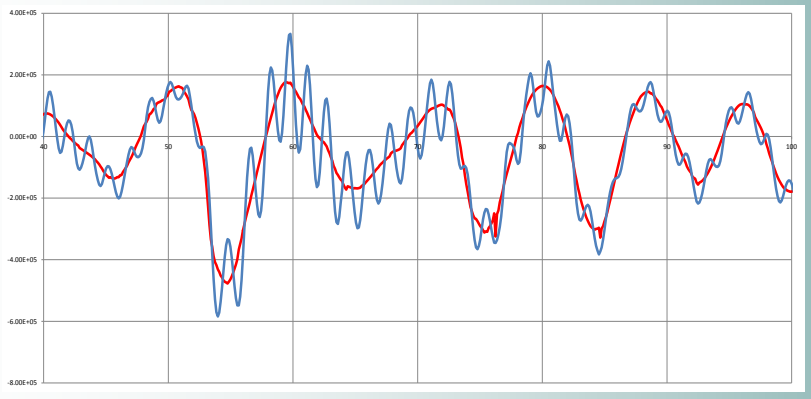
In order to clarify the required brittle crack arrest toughness value (Kca) for the steel plates exceeding 80mm, ClassNK carried out investigative research through a joint R&D project in collaboration with Japan Welding Engineering Society (JWES).

Verification tests were carried out in the joint R&D project by reproducing the brittle crack propagation and arrest phenomenon using ultra-large scale test specimens simulating the actual construction of hatch side coaming and upper deck of ultra-large container ships. The results revealed for the first time that brittle crack arrest steel plates with a thickness of 100mm must have a brittle crack arrest toughness value (Kca) of 8,000 N/mm3/2 or more under the standard minimum designed temperature.

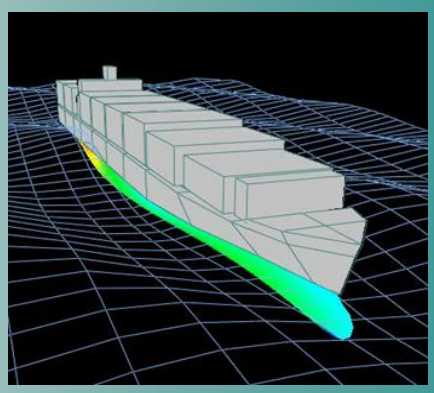
Based on these results, ClassNK will, in principle, require brittle crack arrest steel plates with a thickness of more than 80mm and not exceeding 100mm to have a brittle crack arrest toughness value (Kca) of 8,000 N/mm3/2 or more under the standard minimum designed temperature.

ClassNK is fully committed to improving the safety and reliability of large container ships and will continue applying its extensive technical expertise to solve the various challenges that arise as a result of the ever-increasing size of container ships.

Ultra-large scale test on brittle fracture



Red line : Vertical wave induced bending moment without Whipping
Blue line : Vertical wave induced bending moment with Whipping



Simulation of Whipping responses

(ISO) standards regarding to maritime security

Ports are the hubs of international commerce and for that reason must be managed efficiently and effectively. This is particularly true of port security processes and operations. While laws and regulations mandate certain security standards, total quality management (TQM) and other quality standards, such as (ISO) certification criteria, require specific improvements in processes to enhance the productivity and in some cases profitability of port operations. Security is a critical part of each of these elements. For that reason, let's briefly research (ISO) standards regarding to maritime security.

Capt. Mohamed Abdel Fattah,

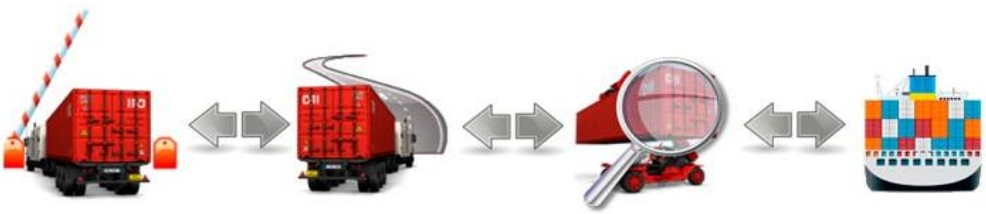
MARINE LECTURER, HEAD OF TRAINNING DEPARTMENT, REGONAL MARITIME SECURITY INISTITUTE, AASTMT

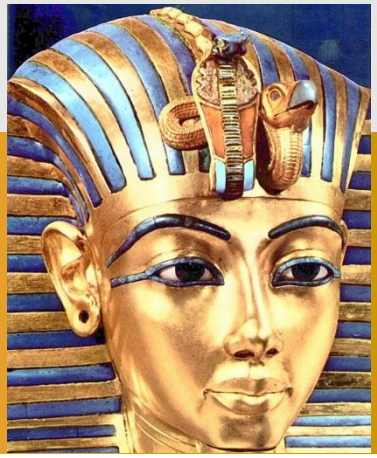
ISO (28000:2007): specifies the requirements for a security management system, including those aspects critical to security assurance of the supply chain. Security management is linked to many other aspects of business management. Aspects include all activities controlled or influenced by organizations that impact on supply chain security. These other aspects should be considered directly, where and when they have an impact on security management, including transporting these goods along the supply chain. ISO (28000:2007) is applicable to all sizes of organizations, from small to multinational, in manufacturing, service, storage or transportation at any stage of the production or supply chain.

ISO (20858:2007): establishes a framework to assist marine port facilities in specifying the competence of personnel to conduct a marine port facility security assessment and to develop a security plan as required by the ISPS Code International Standard, conducting the marine port facility security assessment, and drafting/implementing a Port Facility Security Plan (PFSP). In addition, ISO (20858:2007) establishes certain documentation requirements designed to ensure that the process used in performing the duties described above was recorded in a manner that would permit independent verification by a qualified and authorized agency (if the port facility has agreed to the review).

ISO (27000 series): of standards have been specifically reserved by (ISO) for information security matters.

Finally, all This (ISO) Standard listed above, aligns with a number of other topics, including ISO (9000) (quality management) and ISO (14000) (environmental management).





Maritime History

Overcoming the problems of longitudinal pitching

Capt. Ahmed M. Sharabia,

MARINE LECTURER, SEA TRAINING INISTITUTE, AASTMT

The Ship is not only the oldest means of transportation, but it is the most important; every day thousands of ships sail the oceans. In fact, trade between countries depends, to a large extent, on shipping thus considered an important economic factor. Since several thousand years people have consistently relied on the use of ships to sail the seas. Shipbuilding has been mentioned in the Quran in several places, including

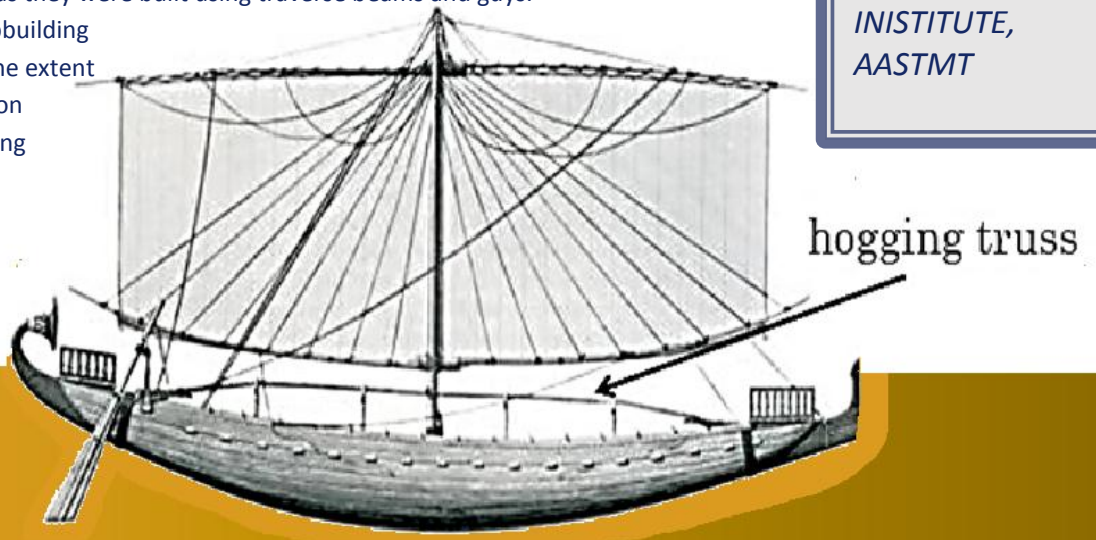
(وَحَمَلْنَاهُ عَلَىٰ ذَاتِ أَلْوَاحٍ وَدُسُرٍ) Al-Kamar verse (13)

Where "دُسُر"is plural for "دسار" which is what pulls panels together; e.g. nails and others.

Ancient Egyptians have excelled in the development of techniques to overcome the problems of stresses arising from the movement of the ship

In describing the ships designed to sail at sea, we find that it is characterized by a long narrow hull with sharp pointy extremes to provide a greater extent of stability to better cope with the different weather conditions and a more streamlined form. Techniques were used to give the ships higher stability as they were built using traverse beams and guys.

This technique in shipbuilding no doubt highlights the extent the Egyptian civilization reached in shipbuilding sciences.



The ancient Egyptian learned to increase the durability of ships customized to transport heavy goods by surrounding the upper edge of the ship's sides and bow with hogging trusses extending the stern. As such, the ancient Egyptians had already preceded all other peoples and civilizations in building a vessel suitable for navigating both the Mediterranean and the Red seas. These were identical in shape to the ships used in the Nile River that were without beams but by extending a thick rope between the front and rear and tightening it when needed to overcome the problem of hull stresses was overcome; i.e. the rope was used instead of longitudinal in ship constructed without a keel to withstand stresses due to pitching.

It is, therefore, safe to conclude that the ancient pharaohs during their early eras were able to address the problems of securing the ship's hull in order to overcome the exerted stresses. This dully shows that ancient Egyptians had in fact preceded all other civilizations in the field of shipbuilding even those that followed hundreds of years later.

T/S AIDA IV

HANDS ON TRAINING ONBOARD

Capt. Abdel Hamid ElKady,

DEAN,
SEA TRAINING INSTITUTE,
AASTMT

The sea training institute (STI) was founded in 1972 as a part of the Arab Academy for Science, Technology and Maritime Transport, STI has prepared women and men for exciting and rewarding careers onboard merchant fleets all over the world. It has always been a vital stage in forming the future officers not only in the area concerning Maritime Education and Training, but also in forming the unique characteristics of marine officers.

Marine training is carried out onboard AASTMT training ship AIDA IV which was built in Japan. This highly sophisticated training ship is fully equipped and was designed to develop trainees' skills and trends, in order to enable them to work as marine deck and engineering officers in accordance with the latest international standards set for sea.

The cadet has the ability to provide a lot of experience in the shortest possible time; the cadets are required to learn fast and across a wide syllabus. They may have accumulated theoretical knowledge in the basic studies in the first four academic semesters, but this will be their first opportunity to see the same worked out in practice and applied to the reality of ship's operations.

The 5th and 6th semester training onboard provides the practical shipboard experience required to become an efficient and competent ship's officer. It supplements and reinforces the classroom learning undertaken to meet the requirements of regulation II/4 of the 1995 STCW and amendments in Manila2010 Convention for theoretical and practical knowledge

We work on motivating our students to thrive by balancing between a unique regimented lifestyle along with technical maritime training, studying, sailing, and working to encourage students and to do their best efforts to reach their goals. Our graduates prepared to be a leading marine officers, engineers, and technical professions regionally and internationally. Additionally, many of our graduates have translated their educational experiences and personal traits which developed at STI into rewarding management careers ashore.

Training ship Aida IV staff and cadets during their participation in Posidonia 2016 the world's most prestigious maritime event that took place in Athens, Greece on 6-10 June 2016

T/S AIDA IV called port of Cyprus and then Piraeus port in Greece to participate in the Posidonia exhibition 2016.

The official opening of Posidonia exhibition was by the Greek Prime Minister. Where the Academy cadets presented the Arab Academy to the visitors, the participation in Posidonia exhibition was within the Academy activities to market its graduates and services to the region.

The ship Called port of Tripoli in Lebanon. Where the training ship Aida IV hosted a reception and dinner for seven hundred in the presence of Lebanese Former Prime Minister, Minister of Transport, Minister of Justice, and The President of the Academy Prof. Dr. Ismail Abd El Ghafar.

Aida IV conducted a drill with the cooperation with the Lebanese Red Cross and the Lebanese Navy, in the presence of Lebanese Minister of Transport.

Arab Academy cadets participated in Posidonia soccer tournament. Posidonia soccer Tournament was contested by a total of 28 teams at Panionios Stadium, a Greek Superleague venue in Athens.

Maritime Safety Committee (MSC), 96th session, 11-20 May 2016

Capt. Emad Khafagy,

*DEAN OF **IMO** COMPOUND, AASTMT*

"The Arab Academy for Science, Technology and Maritime Transport participated in the session representing the League of Arab States according to the Arab Transport Ministers council decision."

The ninety-sixth session of the Maritime Safety Committee was held at IMO Headquarters from 11 to 20 May 2016, under the chairmanship of Mr. Brad Groves (Australia). The Vice-Chairman of the Committee, Mr. Juan Carlos Cubisino (Argentina), was also present. The session was attended by delegations from Member states including a number of Arab states and Associate Members; by representatives from the United Nations Programmes, specialized agencies and other entities; by observers from intergovernmental organizations with agreements of cooperation; and by observers from non-governmental organizations in consultative status.

The Arab Academy for Science, Technology and Maritime Transport participated in the session representing the League of Arab States according to the Arab Transport Ministers council decision.

The following is a summary of some of the important results of the session:

1- Construction rules verified as conforming to goal-based standards

The MSC confirmed that ship construction rules for oil tankers and bulk carriers submitted by 12 classification societies conform to the goals and functional requirements set by the Organization for new oil tankers and bulk carriers set out in the International goal-based ship construction standards for bulk carriers and oil tankers which were adopted in 2010.

2. Survival craft safety: SOLAS amendments adopted.

The MSC adopted amendments to SOLAS regulations III/3 and III/20 to make mandatory the Requirements for maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear, which were also adopted at the session.

This package of provisions, with an expected entry into force date of 1 January 2020, aims to prevent accidents with survival craft and addresses longstanding issues such as the need for a uniform, safe and documented standard related to the servicing of these appliances, as well as the authorization, qualification and certification requirements to ensure that a reliable service is provided.

The adoption of the amendment and requirements for maintenance, thorough examination, operational testing, overhaul and repair represents the culmination of some ten years work on the issue. The intention is to ensure that seafarers can be confident that they can fully rely on the IMO-mandated life-saving appliances and equipment at their disposal.

3- Adoption of other amendments

The MSC also adopted the following amendments, with an expected entry into force date of 1 January 2020:

• Amendments to SOLAS regulation II-2/13 to extend the requirements for evacuation analysis to all passenger ships, not just ro-ro passenger ships. Associated revised guidelines on evacuation analysis for new and existing passenger ships were approved;

• Amendment 38-16 to the International Maritime Dangerous Goods (IMDG) Code, to reflect latest changes to the United Nations Recommendations on the Transport of Dangerous Goods;

• Amendments to chapter 8 of the International Code for Fire Safety Systems (FSS Code) regarding prevention of internal corrosion and clogging of sprinklers and a new chapter 17 of the FSS Code, containing mandatory requirements for helicopter facility foam firefighting appliances.

An MSC circular on early implementation of the new chapter 17 of the FSS Code was also approved.

• Amendments to the Code for the Construction and Equipment of Mobile Offshore Drilling Units, 2009 (2009 MODU Code), to align it with the new provisions of chapter 17 of the FSS Code;

4- Advice regarding the verification of the gross mass of packed containers loaded before 1 July 2016 and transshipped on or after 1 July 2016 agreed

An MSC circular on Advice to Administrations, port State control authorities, companies, port terminals and masters regarding the SOLAS requirements for verified gross mass of packed containers was agreed, following discussion on the pending entry into force of the requirements in SOLAS regulations VI/2.4 to VI/2/6 on the verification of the gross mass of packed containers on 1 July 2016.

Significance of Shore Leave for Seafarers

Capt. Samy Youssef,

MARINE LECTURER, SEA TRAINING INSTITUTE, AASTMT

This article is the first in a series that go over “what are” the opportunities and obstacles of seafarer’s shore leave.

Shore leave is not an extravagance. It is crucial for seafarers who spend numerous weeks cooped up at their work environment, with just work mates and supervisors for company. The individuals who work at sea need to get on shore to get to telephones and the web to contact family, to look for welfare, social, therapeutic or mental backing if necessary, and to have a break from the workplace.

In spite of the fact that it is critical to devote a lot of time for recreational exercises of the crew while the vessel is on the port, the idea of shore leave is ordinarily overlooked by vessels because of a few reasons, which we will look into in the upcoming articles in this series.

In fact, shore leave is a part of the seafarer's work time on the vessel. Nevertheless, as of late, in view of a few wellbeing issues the idea has been risked.

Amid the shore leave, a seafarer gets an opportunity to recognize the port city for a brief measure of time. The adjustment in the physical environment that accompanies it is truly necessary for the prosperity of seafarers who work under extreme conditions on board.

As per research, seafarers working without sufficient shore leave are more helpless against mental weariness, which gravely influences their work proficiency and wellbeing.

Moreover, restricted spaces and tedious routine prompts intense weariness on vessels. Living continually under such conditions brings about anxiety, wretchedness, and home affliction. It is an opportunity to step away – to de-anxiety, to de-pack and to see a world far from the diesel fug and crash of the engines, the murmur of the air con, and stress of watch keeping.

The next article will turn our attention to the issues emerging with the shore leave.

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Arab Academy for Science, Technology and Maritime Transport

P.O. Box 1029 Miami, Alexandria, Egypt

www.aast.edu

ArabMariner@aast.edu

IFMT Members