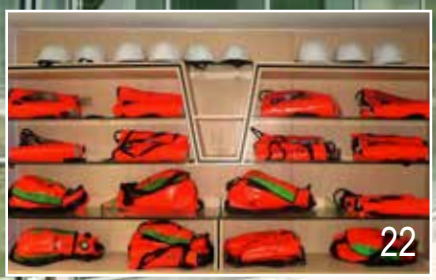
OCT 2015 . ISSUE 31

Samundra Spirit

QUARTERLY IN-HOUSE MAGAZINE FOR SAMUNDRA INSTITUTE OF MARITIME STUDIES (SIMS), MUMBAI & LONAVALA

IN THIS ISSUE

06. Responsibilities of a Safety Officer
14. Chief Guest JS Uppal lauds SIMS at B.Tech Graduation
18. Cranking Main Engine with Click of a Button
21. Historical Surrounding of SIMS: Bedse Caves
22. SIMS Course Receives OPITO Approval



JOIN the MERCHANT NAVY!

SAMUNDRA INSTITUTE OF MARITIME STUDIES (SIMS)

A Training Commitment of Executive Ship Management Pte Ltd (ESM), Singapore
(Certified by leading maritime classification society, Det Norske Veritas, Norway for ISO 9001:2008)

INVITES APPLICATION FOR:

- **DECK CADETS (DANS) - FEB 2016 BATCH**

  Approved by Directorate General of Shipping, Govt of India & The Maritime and Port Authority of Singapore (MPA), and affiliated to Indian Maritime University (IMU)

  - One year Diploma in Applied Nautical Science at SIMS, Lonavala
  - Minimum 18 months of practical shipboard training before 2nd Mate's examination

- **4-YEAR B. TECH. (MARINE ENGINEERING) - AUG 2016 BATCH**

  Approved by Directorate General of Shipping, Govt of India & and affiliated under Indian Maritime University (IMU)

  - Four years B. Tech Marine Engineering course at SIMS, Lonavala
  - 6 months shipboard training before appearing for Class IV examination

- **1-YEAR GRADUATE MARINE ENGINEERING (GME) -SEP 2016 BATCH**

  Approved by Directorate General of Shipping, Govt of India & The Maritime and Port Authority of Singapore (MPA)

  - One year training in Marine Engineering at SIMS, Lonavala which includes 6 months hands-on practical training in the **Ship-in-Campus**
  - 6 months shipboard training before appearing for Class IV examination

Eligibility	DANS	B.Tech (Marine Engineering)	GME
Age (as on date of joining) & Marital Status	• Not less than 17 Years, Upper age limit : - 20 years for 10+2 candidates - 22 years for B.Sc candidates - 25 years for B.E/ B.Tech candidates • Unmarried	• Not less than 17 years • Not more than 20 years • Unmarried	• Not more than 25 years • Unmarried
Academic (Results must be obtained at 1st attempt)	• 12th class board approved by Ministry of HRD, Govt of India. • Min PCM Aggregate 60% • Min score in Physics & Maths individually 50% • Min aggregate of Physics & Maths 60% Note: (For Andhra Pradesh & Kerala State Boards, separate board exams held for each class (11th & 12th) & hence, aggregate of each class marks are considered) Or • BSc: Physics/ Chemistry/ Mathematics/ Electronics with min 55% in final year along with Min 55% in PCM in Class XII. Or • BE/B.Tech – Any stream from an AICTE/UGC Deemed University Approved Institute with min 50% in final year	• 12th class board approved by Ministry of HRD, Govt of India. • Min PCM Aggregate 60% • Min score in Physics & Maths individually 50% • Min aggregate of Physics & Maths 60% Note: (For Andhra Pradesh & Kerala State Boards, separate board exams held for each class (11th & 12th) & hence, aggregate of each class marks are considered)	• Degree in BE/BTech (Mechanical Engineering / Naval Architecture / Mechanical & Automation) from an AICTE approved Institute, Deemed University with a minimum mark of 55% in final year. • Candidate must clear his BE/B Tech in 4 years only.
Medical	Physically fit and meet the standards laid out by DG Shipping*		
Language	English shall be one of the subjects with min marks scored of 50% in Class X or XII		
Eyesight	• 6/6 in better eye and 6/9 in other eye • No colour blindness	• 6/12 in each eye or 6/9 in the better eye & 6/18 in the other eye. Corrective lenses permitted. • No colour blindness	
IMU - CET	Candidates must clear IMU-CET		N.A

** Approved Educational Loans from Cental Bank of India, IDBI Bank & other Nationalised Banks available! *Scholarships available basis SIMS entrance test and first semester results.*

"100% in-house placement onboard ESM-managed vessels upon successful completion of the course"

For more information on what we have to offer and downloading the application form, please visit our website at **www.samundra.com** or contact us at the following:

Email ▸ admission.sims@samundra.com ❙ **Tel** ▸ **MUMBAI:** 02114-399518, **LONAVALA:** 02114-399500, **DELHI:** 011-49882700/40592778, **CHANDIGARH:** 0160-6667777, **CHENNAI:** 044-30453300, **COCHIN:** 0484-3002300 / 3219591, **KOLKATA:** 033-40167900, **PATNA:** 0612-2532124/6530639, **GUWAHATI:** 08474065893

Samundra Spirit

OCT 2015 ISSUE 31

Contents

03 Editorial Note

04 A Message from Peter Dombey

KNOWLEDGE

05 Dynamic Positioning in Pipelay Operations (Part 2)

06 Responsibilities of a Safety Officer

07 Energy Saving Options for Ships (Part 2)

08 Role of SIMS in Safe Docking and Safe Launching of a Cadet

09 All About ECDIS (Part 3)

11 Mentoring Young and Inexperienced Seafarers (Part 1)

12 Moving Upstream (Part 2)

15 Care and Handling of Rolling Elements – Ball Bearings

17 Diesel Generator Engine Crankcase Contamination

CAMPUS NEWS

13 SIMS Celebrates GME 18 Graduation Ceremony

14 Chief Guest JS Uppal lauds SIMS at B.Tech Graduation

22 SIMS Course Receives OPITO Approval

25 Inter-House Debate Competition

25 Ganga House Crowned Indoor Sports Champions

CASE STUDY

23 Contamination of Main Engine Crankcase Oil

SHARING EXPERIENCE

19 A Pirate Encounter

CADETS' DIARY

16 Diversity at SIMS

18 Cranking Main Engine with Click of a Button

21 Historical Surrounding of SIMS: Bedse Caves

24 Crossword Puzzle

24 Poem: Just Live It!

Background of cover picture:
Administration building at SIMS, Lonavala.

Samundra Spirit
OCT 2015 ISSUE 31

www.samundra.com

Address:
SIMS, LONAVALA
Village Takwe Khurd
Mumbai-Pune Highway (NH4)
Lonavala, Dist. Pune, Maharashtra
Pin 410405, India
Tel: + 91 2114 399 500
Fax: + 91 2114 399 600

Address:
SIMS, MUMBAI
5th Floor, Sai Commercial Building
BKS Devshi Marg, Govandi Station Road,
Govandi East Mumbai, PIN- 400088 India
Tel: + 91 22 6799 3545
Fax: + 91 22 6799 3546

Samundra Spirit is a quarterly in-house magazine produced by Samundra Institute of Maritime Studies (SIMS) for private circulation.

Our Editorial Team wants to hear from you!

If you wish to submit any feedbacks and/or contributions, feel free to write to the Editor at: samundraspirit@samundra.com

**Please note we reserve the right to publish your letters/articles or an edited version of it in all print & electronic media.*

Editorial Note

"You have the right to work, but never to the fruit of work. You should never engage in action for the sake of reward, nor should you long for inaction. Perform work in this world, Arjuna, as a man established within himself - without selfish attachments, and alike in success and defeat."
- Lord Krishna in Bhagavad Gita

This is the essence of teachings of Lord Krishna, the quintessential mentor from the great Indian epic Mahabharata. Whether he was the incarnation of God or a fictional character created by Ved Vyas, Krishna through his discourse to his childhood friend and great warrior Arjuna in the war of Kurukshetra, played the role of an eternal mentor for generations of Indians representing the core of ancient Hindu philosophy.

Teachings of Krishna may not be relevant to the shipping industry per se, but the role of a mentor is. In fact, as this issue's message from veteran auditor Mr. Peter Dombey reminds, the importance of the role in shipping – particularly for the juniors on board vessels is ever increasing. We are indeed happy to add the article on mentorship by our senior faculty member, Capt. V.R. Krishnan, which we are sure will bring out the importance of that role on board our ships.

Once again, here is an attempt by Samundra Spirit team to bring in yet another bunch of articles on the life experiences, teachings and primarily sharing of knowledge from our veteran faculty members and staff from ESM. The vision of SIMS is not limited to being just a maritime training institute but to widen the horizon of the future maritime leaders and prepare them for a far bigger role than being seafarers. While the articles on Ball Bearings, ECDIS, and Diesel Engine Generator are practical guidance meant for immensely enhancing the day to day operations of our seafarers, we have brought in the snapshots of the life in campus during the last quarter as well.

Going beyond the regular teaching and training, the cadets are exposed to the activities that prepare them for facing the world once they step out of the comfort zone of the campus. One such activity that brings them out to the adventure zone is venturing into the archaeological sites in and around Lonavala. We are happy to add the seventh part of the series, a visit to yet another ancient Buddhist monument that speaks part of our Indian history not known to the general public.

Graduation ceremonies are the celebration of milestones where we watch hundreds of young boys confidently walk past the SIMS gate with a proud smile on their face and a sparkle in their eyes. Same picture but multiple aspirations and magnificent dreams in their heads. What they need is an opportunity and a mentor to guide and unlock their potential beyond SIMS. A role we hope and expect the shipboard seniors to take up as time comes.

From our end, we have this quote again from Krishna as the last piece of mentoring to these bright young men before they step towards their new life on board:

"Perform all work carefully, guided by compassion."

That's the beginning which will see you through the end of life with success and happiness within you and around you.

Happy reading and a safe sailing to all our seafarers,

A Message from Peter Dombey

3rd October 2015

Hello to all of you at Samundra Institute of Maritime Studies, especially the cadets.

When I left home in 1961, to be an engineer cadet with a British company called Blue Funnel, it was probably the most exciting day of my life. As with ESM, Blue Funnel trained cadets as the major source of officers for their ships. They operated a hostel where we all lived and the company sponsored our two years at college, leading to a diploma in Marine Engineering. After which we had 18 months at sea, where we carried out day work and watches under the supervision of the ship's officers and crew, and studied in our spare time, so every day was a learning experience. Our sea time was followed by 12 months practical training and workshop experience at the company's workshop in Liverpool, where we received training on the use of hand and machine tools, through practical exercises, and subsequently supported the work's engineers and fitters in carrying out repair and maintenance of machinery and equipment which had been landed ashore from the company's ships. In addition we attended college on day release and night classes, so as to complete our marine engineering education before boarding our first ship as a junior engineer.

So what has changed since then? At that time the number of officers and crew on a 30,000 dwt cargo ship was around 35 to 40, now on a 100,000 dwt tanker it's around 24. In those days there was only a manoeuvring platform with very little automation and remote monitoring and control, now most ships have a central control room and there is a high level of automation and remote monitoring and control of machinery and equipment, also there are many more statutory and regulatory requirements to comply with.

This means that cadets joining ships today cannot get the same level of onboard practical training and experience that I received, due to the lower manning levels and higher workload of the sea staff. Also they must have a good knowledge of machinery automation, monitoring and control; and a good knowledge of relevant statutory and regulatory requirements, before they sign on.

I can say, without a doubt, that these needs have been effectively addressed at SIMS. The level of hands on practical experience that your deck and engine cadets receive in the workshops, laboratories and the Ship in Campus, along with the very professional classroom teaching, blended learning programmes and simulator programmes provides them with a World Class practical and theoretical education, prior to them boarding their first ship. From review of the feedback from the senior officers of the ships that they join I see that the observed cadet's competence, and the level of trust that that can be placed in them upon boarding, has increased very much over the years.

I have been auditing SIMS for the last 11 years and I must say that I am very impressed with; the high level of capital investment in facility and equipment, the dedication and professionalism of the faculty, management and administrative staff, and the never ending drive for continual improvement.

I wish you all the very best for the years to come, and to your cadets I would like to say that you have joined one of the most challenging, interesting and exciting professions that I know. So work hard, be inquisitive, be generous in sharing your knowledge and experience, be a team player and keep the seas safe.

Yours sincerely,

Peter Dombey
Senior Lead Auditor
DNV-GL Singapore

Dynamic Positioning in Pipelay Operations (Part 2)

For the second and last part of Dynamic Positioning in Piping Operation, the authors continue to discuss the challenges faced and the role of dynamic positioning during pipe laying operations.

Capt. DD Manjrekar
Cdr. Susruto Das
Nautical Faculty
SIMS, Mumbai

Pipe Tensioners

It is critical that tension is maintained on the pipeline to prevent buckling of the pipe at the areas which are prone to maximum stress. There are a number of pipe tensioners for this purpose, which control the pipeline at the far end of the firing line. These tensioners consist of sets of caterpillar tracks clamping the pipe, either placed on the sides or on the top and bottom of the pipe. The tensioners control the movement of the pipe, maintaining a set tension on the pipe string. The pipe is supported aft of the firing line by the stinger, which is an open lattice gantry sloping downwards, extending beyond the stern of the vessel. The stinger contains a number of sets of support rollers positioned and adjusted to support the pipe in this area, which is the area of greatest stress on the pipe and most vulnerable to buckling.

The pipe subsequently takes a catenary after the stinger to the seabed. The set tension also ensures that there is a smooth transition from the unsupported catenary to the touchdown point on the seabed. If the tension is lost, then damage will occur at the touchdown area, and the pipe will have to be recovered for affecting repairs.

Role of DP System in Maintaining Tension

This pipe tension values are of a high order and is sent to the DP system by load cells incorporated in the pipe tensioners. This external force requires thruster power to maintain the tension. Thus, the DP system not only maintains position, but also maintains this additional tension. If this tension values are not provided, this causes instability in maintaining the position by the DP system. Additionally, a positioning problem with the DP system can have severe consequences on the firing line. If the stinger tension is lost, the pipeline will suffer damage, and the pipe will have to be recovered and repaired. If the vessel has a 'run-off', the pipe could jump the tensioners and crash about in the firing line. If the run-off is astern, the pipe will run back up the stinger. For such eventualities, there is invariably escape routes for the workers in the firing line as well as an open hatchway on the bow (the forward end of the firing line) so that the pipe is allowed to project out from the bow without damaging the vessel.

A pipelay operation may begin with a laydown adjacent to a fixed platform. The pipeline end may either be laid down in a specific area adjacent to the platform or the pipeline may have to be mated to something called the 'J-tube', led down from the installation.

During the pipelay operation, the vessel will be moving ahead under DP control in steps equal to the joint length, often 24 metres. It is vital that these moves are conducted precisely and rapidly with no overshoot and consequent back-up as this will cause problems with the pipeline.

DP systems in pipelay vessels are usually configured to DP Equipment Class 3, with full redundancy to the highest standard, allowing the vessel to operate close to installations in most weather conditions and to operate diving spreads if necessary.

Watching the Weather

Pipelay operations are particularly dependant upon weather and other environmental conditions. The vessel must be able to cope with tides, sea state and wind conditions. It is essential that the positioning be efficient, both to allow the correct tensions to be maintained, and also to ensure that the lay is located within the designated lay corridor.

If it is necessary to abandon the lay operation and Recovery' winch is used. The wire from this winch is sent down after welding a temporary head to the pipeline to the seabed and then slacked off. The end of this wire is either buoyed to be recovered later or kept on board with the vessel riding out the adverse weather. Once the storm abates, the buoy is recovered. The end of the pipe is brought back on board and the process continues.

Final Points

It may sometimes be necessary to join two pipelines in mid-length. The vessel may have laid one section of the pipeline from one end and reached the other pipeline left on the seabed. There will always be an overlap and this depends essentially on the depth of the water at the point of joining. The vessel uses her pipe davits while maintaining her position on DP to bring both ends of the pipe on the surface supported by a number of lifting and tension wires. Once on the surface, the ends will be cut and prepared for final welding. When the final welding together with testing and coating is completed, the pipe is gently lowered down to the seabed with the vessel offsetting to one side of the pipeline to accommodate the extra length in the pipeline without incorporating compressive stresses.

Responsibilities of a Safety Officer

We all have heard the designation "Safety Officer" onboard ships. Yet many of us fail to realize the responsibilities this role entails and the potential it has for bringing about the changes in the management system.

Capt. Vikram Kakar
Nautical Faculty
SIMS, Mumbai

How many times have you seen a safety officer taking true rounds on deck and engine rooms and stopping any crew member from executing tasks in an unsafe manner or has reported any unsafe condition of equipment on the ship foreseeing any incident to take place.

History

The origin of this rank dates back to the late 1980's after a number of serious accidents caused by human errors occurred. Management faults were also identified as contributing factors. In his inquiry, British Wreck Commissioner, Lord Justice Sheen, famously described the management failures as "the disease of sloppiness".

At its 16th Assembly in October 1989, the IMO adopted resolution A.647 (16), guidelines on management for the safe operation of ships and for pollution prevention.

The purpose of these guidelines was to provide those responsible for the operation of ship; with a framework for the proper development, implementation and assessment of safety and pollution prevention management in accordance with good practice.

The objective was to ensure safety, to prevent human injury or loss of life, and to prevent damage to the environment, in particular, the marine environment, and to property. The guidelines were based on general principles and objectives so as to promote evolution of sound management and operating practices within the industry as a whole.

Implementation of the Safety Management System

Hence in 1998, the ISM Code became mandatory; which some seafarers blame for increased paperwork with the huge filling of forms and checklists. Every shipping company was required to develop, implement and maintain a safety management system (SMS) within the requirements stipulated by the ISM Code. The Master and other senior personnel must put the SMS into effect and at the same time motivate the crew.

Every other crew member onboard too has an individual responsibility for his own safety. Even though the company is responsible for ensuring the overall safety of the ship and that of the safety of crew onboard in a properly organized and co-ordinated environment while the Master has the day to day responsibility for the safe operation of the ship and the safety of those onboard.

Designation a Safety Officer

Merchant shipping legislation further emphasized that even though company is providing a safe and healthy environment onboard the ship and encouraging everyone to conduct themselves safely, certain crew members should be given certain specific responsibilities and designation in ensuring that crew follow company's policies and procedures and execute the task safely to prevent injury to persons and damage to property and environment. Those crews with a designated safety role onboard are referred to as "safety officials", and this term includes safety officers, safety representatives and other members of safety committees.

Roles of a Safety Officer

The company's safety management system clearly designates the safety officer, safety representatives and other members of safety committees and their role and responsibility onboard the ship. In a gist, the role of the safety officer is:

1. To comply with the health, safety and other policies as required by the company,
2. Enhance health and safety awareness amongst the crew and improve their understanding of the safety management system,
3. Investigate any complaints or issues related to health and safety matters and take the appropriate action.
4. Investigate all accidents, incidents and hazards to health and safety.
5. Perform health and safety inspections.
6. Carry out risk assessment for hazardous jobs.
7. Highlight any wrong practices or findings of the investigation or inspection if required in safety committee meetings or report to management via the Master.

To carry out this role efficiently, A good safety officer needs to possess certain qualities to avoid confrontation and maintain a healthy and strong safety culture onboard the ship where everyone particiaptes to further strengthen the safety culture. These qualities of safety officer are but not limited to:

Leading by example: Most people are more attentive to actions than words, and this is particularly true in a shipboard environment. An officer who leads by example not only promotes teamwork but is also seen to practise what he preaches.

Using knowledge and experience: The safety officer should add to his knowledge

Continued on Page 12

Energy Saving Options for Ships (Part 2)

The second and last part of Energy Saving Options for Ships discusses other fuel saving designs and the cost per ton CO2 averted by implementing different measures on ships.

Propeller Designs

Several Propulsion Improving Devices (PID) are being researched into, such as the wake equalizing and flow separations. Other devices include Pre-Swirl and Post-swirl devices as well as high efficiency propellers. Propeller designs are being tried out in some shipyards so that losses in thrust from propeller design can be mitigated. To improve the water flow across the screw, thereby improving the thrust, installation of spoilers on the hull near the propeller, are being explored. There are plans to fit ducts in front of the propeller to streamline the water flow and improve hydrodynamics in that area.

Reducing Hull Friction

To reduce the hull friction as ship moves through the water, thereby causing waste of power and in turn fuel, it was thought to provide air cavity systems wherein thin layer of air formed and maintained around the flat bottom of the hull causes a large reduction in skin friction. Although the system is yet to prove effective in the long run, thought of improvising the same by Micro Bubbler Air Lubrication system is also being contemplated.

Additionally improved hull coatings can also contribute greatly to reduce drag by fouling of hull. The new coating systems which are eco-friendly as well as reduce the drag such as CDP – Continuous Depleting Polymers (3 year recoat) and SPC – Self Polishing Coat which are acrylates – using hydrolysis for action (5 year recoat) and FRC – Foul Reduction Coatings are options available to the ship owner. These paints are readily available and are being used on ship hulls at various ship yards.

Other Solutions

Besides the use of LNG as alternative fuel for ships' engines, augmentative systems such as installation of towing kite systems, and turbo-sails which are used to tap the renewable energy sources; such as wind energy have been successfully tried out on smaller vessels. There are also experiments going on to tap solar power through solar panels fitted on upper deck areas of ships although this is a high capital machinery and the cost to power ratio and space constraints far outweigh the effectiveness of installing and using such systems.

Other fuel saving devices being seriously considered and implemented are enhanced auto pilots, which are of such design that they improve the steering capabilities of the ships; thereby reducing the wandering and extra distance covered. Ship owners are also encouraged to use weather routeing systems to improve cost effectiveness during passage planning and running the ships on lower MCR (Maximum Continuous Rating); say 75% to 80%.

The cost per ton CO2 averted by implementing different measures on ships is evident from the appended table (DNV pathway to low carbon shipping 2009)

Conclusion

Whatever are the resources being researched, designed or contemplated to reduce power consumption on ships and thereby achieve the desired objective of energy efficiency on board, fuel savings of up to 0.5% to 3% are possible by fitting improved auto pilot devices, up to 3% by using weather prediction and routeing for passage planning, optimising trim and draught of the vessel can bring about 10% cost reduction in power consumption on board. Several initiatives are already being taken by ship managers in data acquisition from ships by using in house as well external software. Such data helps in planning efficient energy management on board with assistance from their managers. These measures will certainly result in achieving the desired results required under Annex VI of MARPOL in the days ahead. ■

Measure	USD cost / ton CO2 averted
Voyage planning & executio	- 90
Speed reduction	- 75
Propeller efficiency improvements	- 65
Trim and draught adjusted	- 60
Frequency converter AC motor	- 50
Contra Rotating Propellers	- 40
Weather routeing	- 05
Kite Assisted propulsion	0
LNG as fuel	20
Electronic Engine Control	25
Fuel Cells as Aux engine	60
Speed reduction with increased fleet size	80
Sails	105
Waste Heat Recovery systems	150
Cold Ironing (using shore power in port)	200

Capt. V. R. Krishnan
Nautical Faculty
SIMS, Lonavala

Role of SIMS in Safe Docking and Safe Launching of a Cadet

Biju Baben
Engineering Faculty
SIMS, Lonavla

Fig. 1

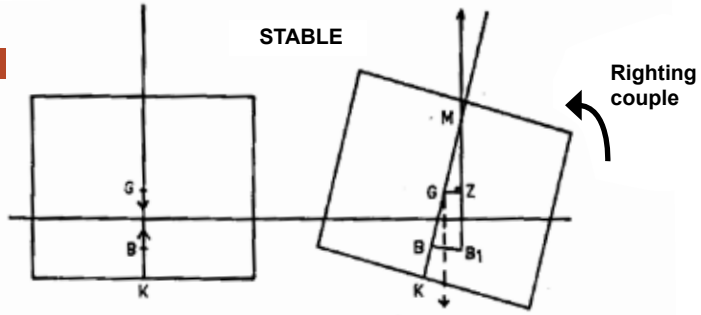
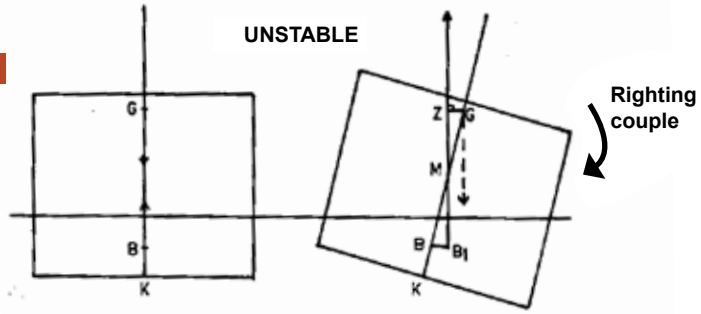


Fig. 2



Safe docking is one of the most important processes, which involves a lot of calculations, planning and clarity in procedural operations. Ship has to meet certain criteria to achieve the same, in that, the prime concerns are stable condition, upright and slight aft trim. In this article, we can see how the concept of safe docking procedures help us to understand the role of SIMS in launching the marine career of a SIMS cadet.

The condition for a stable equilibrium for a floating body is, the weight of the body and the buoyancy force becomes equal and centre of gravity is above the centre of buoyancy in the same vertical line.

But when the body undergoes an angular displacement about the horizontal axis, the shape of the immersed volume changes and the center of buoyancy moves relative to the body. The new line of action of the buoyant force (which is always vertical) through B' intersects the axis BG (the old vertical line containing the centre of gravity G and the old centre of buoyancy B) at M. For small values of angular displacement the point M is practically constant in position and is known as metacenter.

As seen in Fig. 1, M is above G, and the couple acting on the body in its displaced position is a restoring couple which tends to turn the body to its original position. Therefore, for a floating body, the stability is determined not simply by the relative position of B and G, rather by the relative position of M and G

If M were below G (Fig. 2), the couple would be an overturning couple and the original equilibrium would have been unstable

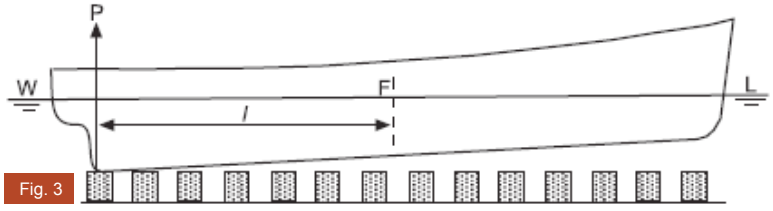
The distance of metacentre above G along the line BG is known as metacentric height GM

Upright:- While entering the dock the vessel needs to be upright which means there should be no port or starboard list when the ship takes to the blocks. If the point of contact is outside the centre line of vessel, it may force the vessel to tip over.

Positive initial GM or adequate initial GM :- Since KB is depending on the draft and BM depends on the water plane area and breadth of the ship, these are normally not varying. But the position of the G can be lowered by ballasting the double bottom tanks, so that GM can be increased. The virtual loss of GM at any point of docking process can be calculated and accordingly, GM can be increased.

As the ship enters the dock, the dock gates are closed and pumping out of the dock water commences. The rate of pumping is reduced as the stern post near the blocks. The slight aft trim helps the aft of the vessel to land on the keel blocks. When the ship touches the blocks (Fig. 3), there is a reaction at the point of contact which raises the centre of gravity "G" and reduces the metacentric height "G.M" so that adequate initial metacentric height is required to compensate for the same.

Fig. 3



The slight trim aft:- Gives prominence to the stern and bow in tandem rather than simultaneously as it will reduce the load and pressure on hull and the keel of vessel.

Same Philosophy in Preparing a Cadet for Sea

Similarly, when a cadet joins SIMS, we calculate the virtual losses and help them to increase the metacentric height by adding more weight on their training part. This process we term as training gap analysis to identify the losses and impart the right amount of knowledge and marine wisdom in their curriculum. So that they are able to keep upright even under onslaught of distracting and disturbing external forces on them. After the dry-docking is completed, the SIMS cadets are fully seaworthy for launching into the marine environment with confidence.

We have dealt with the virtual losses like the lack of knowledge, lack of learning aptitude and other bad habits they may have carried as baggage in their life span at the beginning of the training.

SIMS faculty members take care by increasing metacentric height by imparting knowledge and skills through various training aids.

Uprightness: This is cultivated by imbibing the core values which we inculcate in them like integrity, creativity, safety and leadership etc. Dry-docking is the training period undergone by the cadet at SIMS.

Slight aft trim is the flexibility to tackle any adverse situation. ■

All About ECDIS (Part 3)

Route Planning and Monitoring

Capt. V. Fernandes
Nautical Faculty,
SIMS, Mumbai

The third part of the series continues from the basics of contour settings featured on issue 30. In this issue, the author provides an insight on the route check function, admiralty information overlay and anti-grounding cone; all key features of the contour settings. He also discusses the planning and monitoring of sailings routes with the ECDIS.

Route Planning

Before planning your route, the contour settings must be inputted with the departure port ENC (Electronic Navigational Chart). This can subsequently be changed for the next port or an upcoming channel transit. It must be emphasised that the contour settings are dynamic and must be checked and updated regularly to confirm compliance with the company's minimum UKC (Under Keel Clearance) requirements.

At the planning stage itself, you should not intentionally breach a safety contour (discussed on issue 30). However, when faced with a part of a passage where breaching the safety contour becomes unavoidable, the issue of when and how that critical part of passage will be crossed, must be brought up and discussed with all members of the bridge team. This would put the bridge team members on alert with the passage being carefully monitored during that critical period.

The other important aspect is using the "Date Dependent View". A date range of your voyage must be entered here which should ideally be the estimated time of arrival to the next port. In general, a number of hydrographers also include their T&P (temporary and preliminary) corrections within the ENC and these corrections become visible and effective on the ENC depending on the date on ECDIS; likewise is the case with the Admiralty information overlay known briefly as AIO (a correction may not be effective at the time of its publication but comes in force at a future date). Hence, at a future date if the planned route is going to enter a submarine cable laying operation area or if it passes through a port reclamation area, etc., the ECDIS will alert you about the danger during the route safety check.

At the route planning stage, once the route is made, the safety check of the route must be carried out. During the safety check, the ECDIS will generate alarms whenever the set safety parameters are breached; e.g. in case the safety contour is breached. Minor adjustments to the course must then be made so that the route check alert no longer exists. You should save and use a route only after all the alarms/ alerts displayed have been taken care of. Remember that it's not just the track but also the Cross Track Error (XTE) limit, which is involved in generating an alarm. We will see this in the figure below.

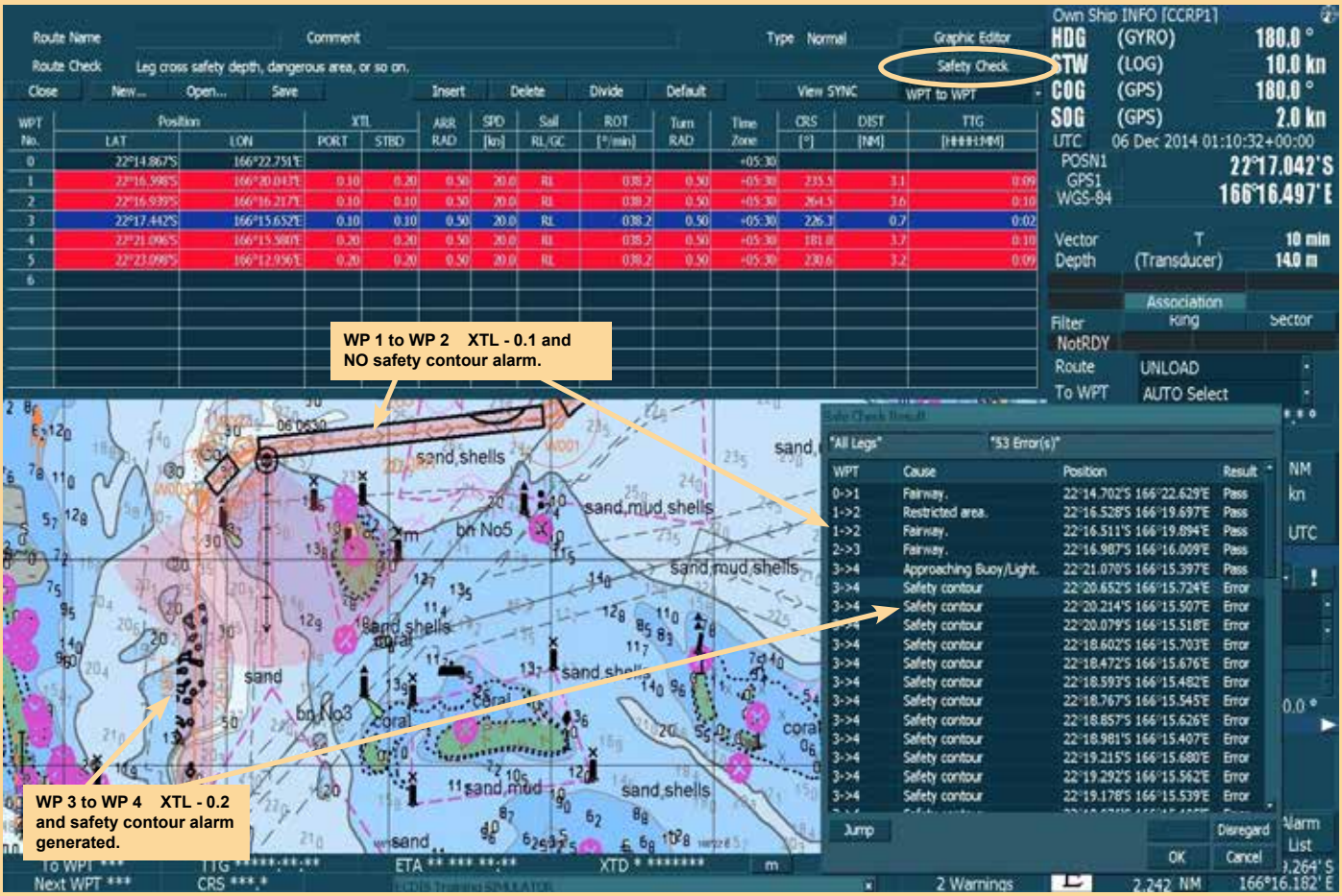


Fig. 1

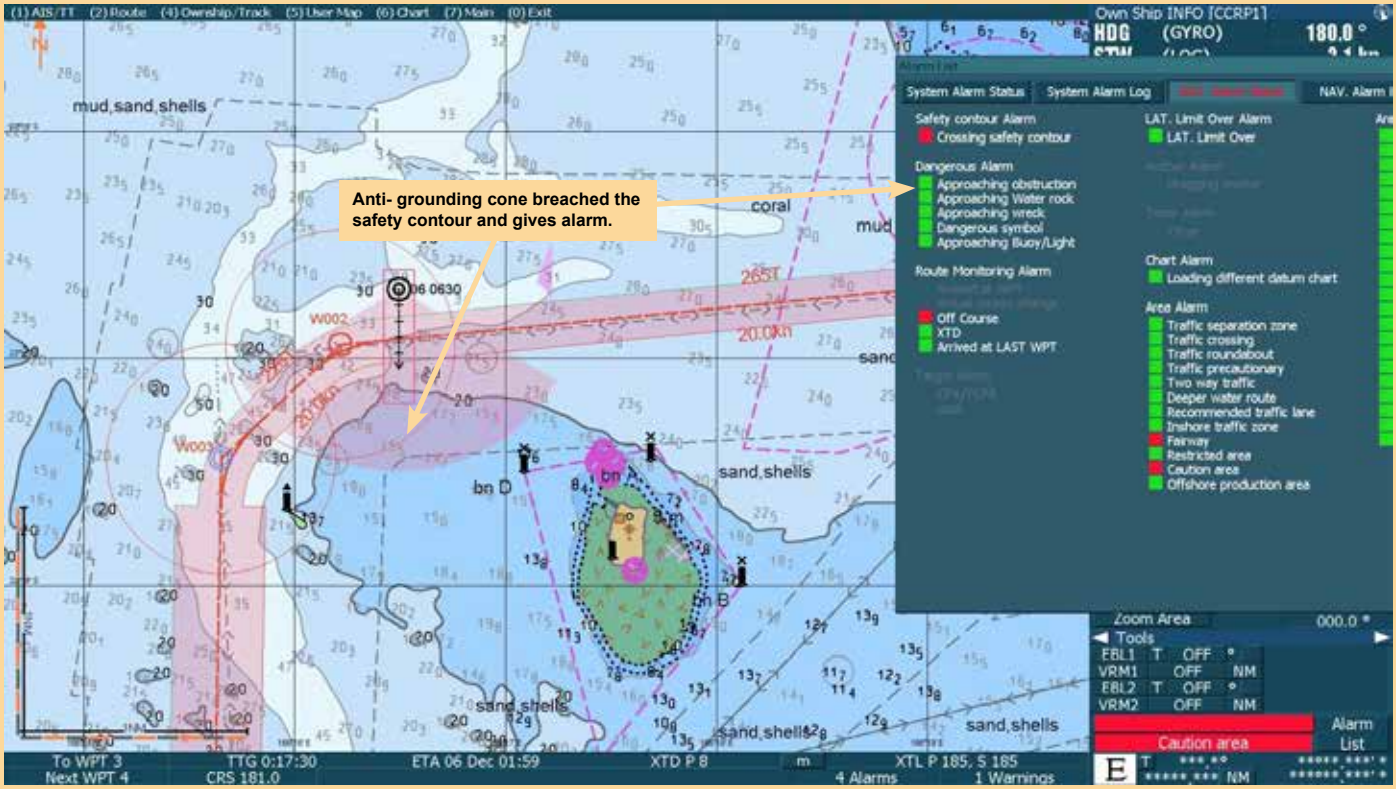


Fig. 2: The rectangular anti-grounding cone has now beached the safety contour and gives an alarm on the ECDIS

Route Monitoring – Anti-Grounding Cone

During the monitoring stage of the route, the "anti-grounding cone" or "look ahead alarm" will activate whenever the vessel breaches a safety contour or if there is presence of any other navigational hazard. Please follow the eDMS guidelines for the anti-grounding cone settings for your vessel.

We can see in the example (Fig 2) on how the look ahead alarm works during the monitoring stage of route planning.

Admiralty information Overlay

Many hydrographers worldwide include the T&P corrections in their ENC, likewise the corrections/ updates as received weekly also include the T&P corrections. However, it was noted that there still were large number of hydrographers, which were not issuing the T&P corrections within their ENC and ENC updates. To address the matter, British admiralty introduced the Admiralty Information Overlay (AIO), which covers the T&P corrections of the entire world ENC folio. The AIO is basically to the ENC what T&P corrections are to the paper chart.

British admiralty also compares the paper chart and the ENC data, and any noted discrepancy is also produced as EP series AIO. The AIO is updated weekly and available by email (through E-Navigator or similar digital updating software) or on a DVD.

There may be issues on certain ECDIS, where AIO information is not visible. There can be two reasons for this, either that particular ECDIS is not compatible with AIO or you don't have the required permits to view overlay information on your ECDIS. A list of ECDIS compatible with AIO is available on the UKHO website. Presently all modern ECDIS are compatible with AIO except for a few older versions. On such ECDIS, the T&P corrections are to be manually done using the Marine Information Overlays (MIO), more commonly known as the user maps.

I would like to caution you about AIO information. Let's say there is a submarine cable being laid out in a certain area and you get overlay information about it. The ECDIS will only show you a rectangular red highlighted box (Fig 3) with the notice number on it. By clicking on it, you can see the textual information pertaining to that T-Notice. You will, however, need to manually plot the cable on the ENC using the manual update function / user maps. ■

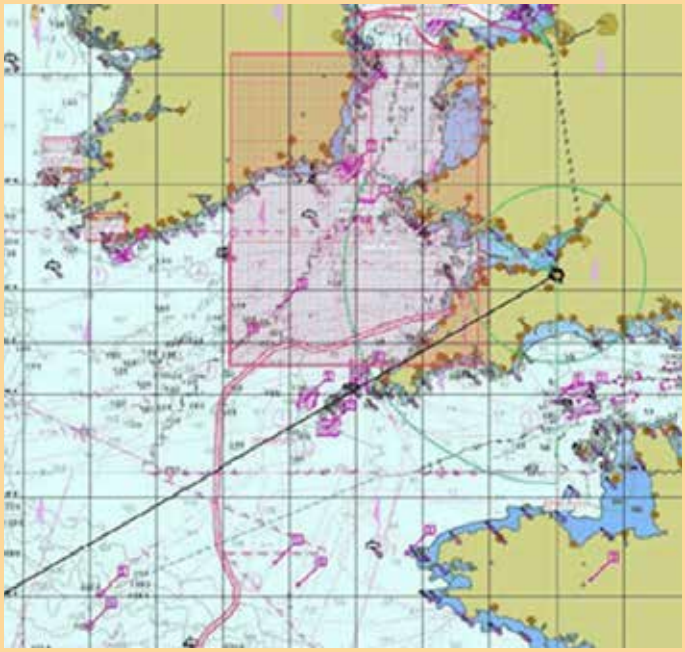


Fig. 3: By clicking on the highlighted red box, information pertaining to the T-Notice is attained.

Mentoring Young and Inexperienced Seafarers (Part 1)

Capt. V. R. Krishnan
Nautical Faculty
SIMS, Lonavala

Thanks to the engineering marvel in ship building, the gross tonnage of our vessels have only continued to increase over the years, while the number of crew required to manage them has gone down. Today, a vessel can be manned by as little as 24 crew members as compared to the 40 strong, decades ago.

Regrettably, the high level of automation in today's vessels that led to the requirement of lesser manpower meant that fresh cadets no longer receive the same level of practical training that our sailing veterans of yesteryears had received.

And this is where the importance of mentoring young and inexperienced seafarers comes into play.

One often hears senior officers of the day complaining about the poor quality of today's young seafarers. They are heard to comment adversely on the practical abilities of their younger colleagues on board their ships.

Cadet's Curriculum Today

Deck cadets undergo a training course under a prescribed IMU/DGS curriculum for a year and then offered training berths onboard various ships of their sponsors and engineering cadets do only six months on board a running vessel after their pre-sea training institute's stint before they are down for their first competency examination with the administration of their choice. During their pre-sea training, the curriculum is cramped with a lot of theory and some amount of practical as well. However, the practical exposure is indeed inadequate to cope with the expectations of the senior management on board ships.

Facing Expectations

Though some senior officers do take interest in coaching and mentoring their trainees, a majority of them do not take this aspect seriously. At the same time, they end up complaining bitterly about their junior staff. These senior officers who complain, often speak of lack of time or excess paper work and reporting to head office as well as poor attitude of the cadets, as the prime reasons for their inability to partake in coaching and mentoring these young seafarers.

Seafarers of tomorrow cannot be expected to train themselves onboard. Adequate structural support is required from the senior management while they carry out their important routine shipboard tasks at sea. On some ships, there may be inadequate time due to the nature of the voyages (especially on smaller vessels on STS (ship-to-ship) operations or on chemical tankers with invariably short passages coupled with hectic tank preparation work to load the next cargo). However, on majority of the ships, sea voyages may be longer and they may get some anchorage stay during which, such activities could be easily managed. Some cadets do not take advantage of their training berths which they have secured free of cost from their sponsors. They do not realise that they are missing a great opportunity to ask questions and learn as much as possible from the senior shipboard management. It is these youngsters who need to be quickly identified by the senior shipboard management and be encouraged to seek answers to several queries. In fact, a senior officer is expected to just spend 10 minutes a day on mentoring a junior and no more.

Consequences and Benefits

It has been proved that without proper and regular mentoring guidance to the junior seafarers; as they progress in their career path to the pinnacle, they would turn out to be liabilities on board in due course and sooner or later they may be flushed out of the system. By providing valuable advice and passing on the fine techniques learnt by themselves in their long years at sea, the senior officers would be able to enhance the competence and thereby confidence levels of their juniors and promote effective communication between them and their juniors. Mentoring benefits both, the seniors and the juniors and helps in building a formidable team, which together will be able to run their ship in a more effective and proper manner.

Senior shipboard management should not view mentoring as a separate task or job, because the mentor cannot expect to get any monetary benefit; but on realising the effects, the mentor is expected to get a sense of professional pride and satisfaction. Mentoring influences and motivates the junior shipboard staff to accomplish their tasks with confidence and also reassures the operators, managers or owners that their ships are doing well. This will in turn lower the chances of incidents and accidents in the shipboard environment in the long run.

As the senior shipboard staffs start mentoring their juniors on board, they also get a chance to influence the behaviour of their mentees in the long run. This would enable them to make the right decisions at the appropriate time. ■

More on the second part of Mentoring Young and Inexperienced Seafarers in the next issue.

Moving Upstream (Part 2)

A Glimpse at Offshore Operations

The story continues from the first part after the vessel had moved out of the 500 meters zone to take a standby position having delivered the deck cargo onto the rig.

From time to time a vessel can get called back within the 500 meters zone to perform man-overboard duties when crew onboard are performing activities which pose a risk of them falling overboard.

Our vessels are provided with 'Fast Rescue Boats', which can be launched in less than five minutes to recover a man from the waters very quickly.

In the Oil and Gas Industry, fire is an ever present hazard and many supply vessels and anchor handlers are provided with FiFi (Fixed Fire Fighting) systems, which provide immense fire-fighting capability in the event of a fire or explosion on the rig.

After four days of standby, I had the opportunity to witness night operations when we got called in at 2130 hrs. to backload deck cargo. It takes about an hour and a half to get the ship in position from the time she is first called in. So by about 2300 hrs, we were in backloading deck cargo at night from the Rig position and started taking on her backload of deck cargo. This took a couple of hours and on 7th April by 0100 hrs. We completed operations and pulled out again to standby outside the 500m zone. Rigs are thirsty creatures and consume immense amounts of fuel each day. Supply vessels usually carry hundreds of Cu. M of fuel as cargo, which is discharged to the rig as and when it is required. Fuel transfer operations are usually carried out during daylight hours and on the morning of the 7th we were called in to provide 300 Cu. M of fuel to the rig. By 0930 hrs. we were in position alongside the rig and received the fuel hose from the rig.

On offshore vessels, hoses and manifolds are provided with 'TODO' couplings which allow easy quick and easy connection and disconnection and are designed to provide 'Dry Break' which means no product is spilled in the process of connection / disconnection.

After the hose was connected and pressure test done to confirm there were no leaks, we started pumping at a slow rate of 50 Cu. M / hour. After a few minutes the rig confirmed that they were receiving the fuel and we increased our discharge rate to approximately 100 Cu. M / hour.

It took us a little over three hours to complete the discharging of fuel. We then took some more deck cargo from the rig, exchanged cargo documents and then set sail back to Labuan. The short voyage was soon over and I had the excitement that every seafarer has of 'signing off' and going home.

The offshore industry is a fascinating and rewarding industry and there is plenty of opportunity for our young seafarers to make a career in offshore. ■

Capt. Arvind M. Karandikar
General Manager
Executive Offshore

Continued from Page 6

by continuous upgrading from refresher courses, training or self-study, keeping up to date with legislative and technological changes.

Remaining calm: In all situations, the safety officer should conduct himself in a calm and considered manner, particularly in the period after an accident or incident onboard.

Earning respect: Respect can only be earned, never demanded. Maintaining good relationships with all staff, and particularly the safety representatives, is critical.

Being sensitive to different cultures: Even on our ships, having a single nationality but multilingual and multicultural crew could have problems arising from cultural issues. The safety officer should be sensitive to these issues to ensure that assumptions do not lead to misunderstandings. Time spent on this will pay dividends.

Recognising the crew's limitations: The safety officer's role extends to assessing whether an individual is competent to do a particular job safely. It is important that the safety officer is aware of the particular job safely. It is important that the safety officer is aware of the crew's work routines, especially relating to workloads and the level of fatigue.

Motivating and creating of a sense of community: The Safety Officer must encourage a culture of interest and motivation in health and safety matters.

A good safety officer who understands his potential can not only forsee a critical situation from developing but also has the power to change the system for betterment of the crew and company. This will not only reduce the number of incidents taking place but also bring a good name to the organization by defining how safe you are to do business with.

In today's world, the safety spectacles are the ones through which the whole world views you prior approching you for a business commitment. ■

SIMS Celebrates GME 18 Graduation Ceremony

Occasion marks 10 years of teaching at SIMS

Mr. S.M Iyer receiving the guard of honor at the campus hostel stilts

It was once again a momentous time for Samundra Institute of Maritime Studies, Lonavala, as it celebrated the passing out ceremony of its 18th batch of Marine Engineers on 27th August 2015; bringing the total number of cadets to have graduated from SIMS, Lonavala to 2464. The memorable occasion also marked the ten (10) years milestone since the institute enrolled its first ever batch of cadets back in August 2005.

Gracing the event was Chief Guest, Mr S.M.Iyer, Resident Director, Executive Ship Management Pte Ltd (ESM), Mumbai, faculty members and family members of the cadets.

Opening his address to the 79 graduates at the campus auditorium, Mr S.M. Iyer welcomed the fresh graduates into the ESM family and expressed that only the best is expected out of the cadets, whom by now should be confident of their abilities after having gone through some of the best trainings available in India at an institute renowned for its training facilities. SIMS was awarded 98.7% marks (top amongst Maritime Institutes in India) back in July 2015. The recognition was obtained after an inspection conducted by the Government recognised independent body Class N K, Japan – the largest classification society in the world.

Mr. Iyer strongly advised that such quality trainings have paved way for the cadets to ensure a successful career and that they should stay focus and abstain from going against any company policies such as the drug and alcohol use on board that has ruined the bright career paths of many seafarers. He expressed that a lot goes in guaranteeing the placement of the fresh graduates on board a vessel and such good opportunities should not be thrown away by unthoughtful and rash behaviours. Mr. Iyer also advised against leaving the organization that has a lot to offer when it comes to career paths.

The chief guest ended off by commending that success is not a lack of strength or knowledge but it's the lack of will and attitude. He added that the road to success is not easy to navigate but its hard work, drive and passion is possible to achieve the dream and spurred the fresh graduates to become the best Chief Engineers of tomorrow. Citing ESM's tagline, he spurred the cadets to be "a class above the others".

Mr. Iyer was earlier given a guard of honor at the hostel stilt. He also handed out the prizes to the award winners during the ceremony.

Chief Guest, Mr. S.M Iyer (1st row, 7th from right) with the graduating GME 18 batch, and faculty members Lonavala and Mumbai

Capt. JS Uppal inspecting the parade

Mr. Iyer, Resident Director, ESM, Mumbai, presenting a token of appreciation to the Chief Guest

Capt. JS Uppal (1st row, 8th from right) with 34 graduating B. Tech cadets and SIMS faculty members

"Best Training Institute in India. There is no Comparison"

Chief Guest JS Uppal lauds SIMS at B.Tech Graduation

Chief Guest: Capt. JS Uppal

It was a proud and ecstatic moment for the 34 cadets from the B.Tech course 2nd batch who completed their four years training program on 5th October. An impressive graduation ceremony was held at the campus to mark this occasion with Capt. JS Uppal, Principal Officer-cum-Joint Director General of Shipping (Tech), Mercantile Marine Dept, Mumbai gracing the event as Chief Guest. Joining him were faculty members and parents of the cadets.

In his address to the graduating cadets, Capt. JS Uppal, who was earlier given a tour of the campus, commended the management for creating such a wonderful institute and gave his vote of confidence in the campus being the best training institute in India. He lauded there were no comparison to the quality of training found at SIMS.

Capt. JS Uppal, whose vast experience in the industry includes 18 years at sea and 20 years at station, cited ship familiarisation, respecting safety and respecting structure training programmes as three key pointers that are vital to seafarers.

Highlighting the importance of ship familiarisation, Capt. JS Uppal said that the new joiners should take the initial orientation seriously as they are only given two to three days by the Master to explore the ship and become fully familiar with their new home. This is usually done with a checklist – after which, everyone expects of them to be much aware of their surroundings.

The chief guest also shared his own experience of an accident he had with a defective torch while talking about the importance of safety. He said that while everyone is taught and knows the importance of safety, the knowledge is nothing without actual implementation. He advised the cadets to ensure everything is in its correct position according to the checklist signed by the officers. He reminded them that nobody is in hurry, so make sure each and everything is ticked or marked once the job is completed. This is what makes the difference between documenting and actual experience on board he added.

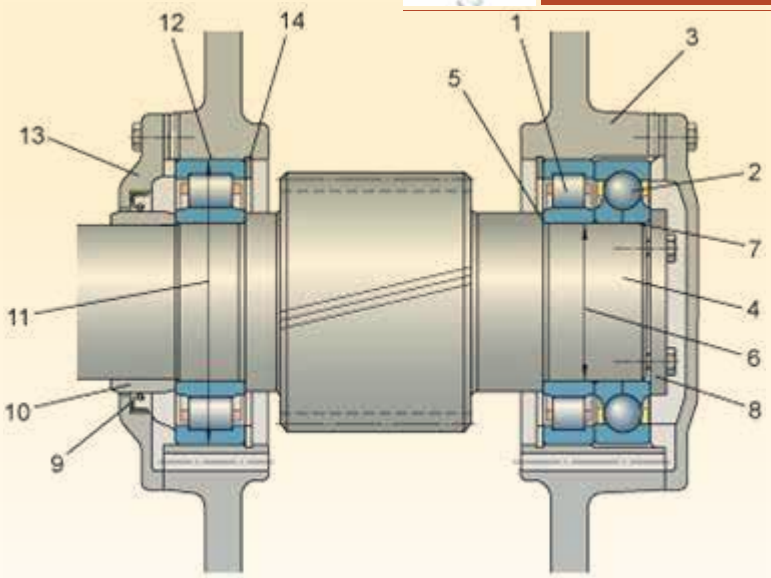
He concluded his speech with the third point; respecting the structure of training programmes. Capt. JS Uppal reiterated the importance of never staying stagnant and to instead fill up the record book that reflects when it was time for their competencies. He said it was required to climb the ladder in that career.

After his address, Capt. JS Uppal handed out the prizes to the award winners.

Care and Handling of Rolling Elements – Ball Bearings

S.Viswanathan
Principal
SIMS, Lonavala

Various types of rolling elements such as Ball Bearings, Roller Bearings, and Needle Bearings, etc. are used in ship's equipment. Usually the lives of these bearings are limited from two to five years based on the load, environment conditions and running hours. Due care, if taken in maintenance and storage of these bearings, will prevent sudden and premature failures.



1. Cylindrical roller bearing
2. Four-point contact ball bearing
3. Housing
4. Shaft
5. Shaft abutment shoulder
6. Shaft diameter
7. Shaft seat
8. End plate
9. Radial shaft seal
10. Distance ring
11. Housing bore diameter
12. Housing seat
13. Housing cover
14.Snap ring

Care to be taken during storage and handling of spare bearings

The new bearings received should be stored in a dry and cool place; usually in the store room. The original packing and protective grease paper shall be kept intact until ready for use. The bearing should be fitted by pressing it onto its place by using a pushing tool on the collar of the inner race. Using a hammer for fitting the bearings will damage the bearing as well as the shaft. Large bearings may be heated in an oil bath before fitting. Care must be taken to prevent dirt and water entering the rolling elements while fitting and while in service.

Greasing of bearings

Sealed bearings are supplied with filled grease, ready to use and usually fitted as such. Ball bearings can be filled with grease or lubricated with lubricating oil based on the load, torque and speed of the shaft.

The bearings are greased with clean grease up to a maximum of 90% of the cavity. This ensures space for expansion of the grease during running condition. Cleanliness of the grease is very critical while filling the bearings with fresh grease. Contamination can occur due to dirty hands, using gaskets, plastic and paper to keep the grease to be applied (Temporary storage). Grease storage bins/ containers are to be stored with proper lids/ covers to prevent contamination.

The functions of grease in a bearing is primarily for lubrication, though it has the following additional functions which are equally important:-

- It cools the bearing by conveying the heat through the bearing cage
- It keeps dirt, water and foreign matter out
- It keeps the rolling elements protected with a coating and prevents rusting

Conclusion

Ball and roller bearings are mass manufactured to very fine tolerances and are available in various types and sizes to suit every application. Due care is to be taken in storing them properly and maintaining them in service for trouble-free operation. ■

SIMS Ex-cadets Joined ESM-Managed Fleet During the Third Quarter

3O Satinderpal Singh Nandha
DNS 11

3O Damandeep Singh
DNS 11

3O Gaurav Sharma
DNS 11

3O Nishchay Joshi
DNS 11

3O Abhayjit Singh Multani
DNS 11

3O Anvar Nasheeth Kannankulavan
DNS 9

3O Vinod Kumar Kolappan
DNS 9

3O Pauls Joseph
DNS 11

3O Pranav Remash
DNS 11

3O Abhishek
DNS 11

3O Midhun Ephrim
DNS 9

3O Vidya Sagar Dummu
DNS 11

3O Vinu Jacob John
DNS 11

3O Prajeesh Kumar Kottakkal
DNS 10

Diversity at SIMS

Cdt. Rohit Singh
GME19
SIMS, Lonavala

I understood the meaning of "diversity" from the very fundamental approach of my grandmother. She used to say that "like each finger is different in shape and size and has a different function to perform, exactly in that manner, every individual is different in his own way and has a different role in society".

In my own words, diversity incorporates different individuals in values, eclecticism, religion, susceptibility, imagination, tactics and yeastiness. Diversity starts within the family itself. Every member has its own personality.

Aiming towards the diversity of students in SIMS, here, there are a mix of people from different backgrounds and different interests meeting those they have never met before. Such a group is difficult to shape as a team. It is always a challenge to run such a diverse group in a way that every single individual develops, progresses towards a common goal, learn teamwork, and make different friends without having any kind of disputes.

Initially, the cadets are very new to this kind of culture which SIMS acquires. SIMS ensures that there should be a systematic learning and growth of cadets which allow them to develop their skills and practice them. This makes the foundation of SIMS cadet very firm and steady. Here a teacher plays a significant role in achieving these targets. He must understand the importance of diversity and knows all the tactics to bind the students together.

Regular interactions among students in class and cabins can help reduce discrimination, prejudice and misunderstandings. For this, our class seating system is designated such that no two cadets from the same background are sitting together or are sharing the same cabin.

Faculty of SIMS understands and promotes the individuality of a cadet and acknowledge that every cadet can do something different. Since the faculty members themselves belong to different cultures and backgrounds, this has enabled them to understand the problems of the cadets that are coming to SIMS.

Several activities are being done by the cadets which require teamwork and different skills to achieve a common goal. Many competitions were organised by the faculty of SIMS to build healthy competitiveness among the cadets. Sports events were organised time to time to build sporting spirit and enhance teamwork skills among cadets.

Diversity provides new ways of thinking, reacting out to a wider range of situations. The latest study reveals that "Attention to multicultural learning extends the meaning of personal, social and moral growth and improves the capacity of institutes to achieve their mission".

In SIMS, among cadets, we found cultural diversity, new ways of thinking and multiple viewpoints which bring vibrancy in the institute. SIMS built humanitarianism spirit which shape cadets to be better citizens of tomorrow. ■

3O Manpreet Singh
DNS 11

3O Yashraj Rana
DNS 11

3O Emmanuel Sajeev
DNS 10

4E Aswin Mohan Kallat
GME 10

4E Aryan Rajagopalan
GME 12

4E Vivek Murali
GME 12

4E Renjith Reghunadhan Kannara
GME 11

4E Dileep Achuthankutty
GME 11

4E Aravind Chandrakanth Kumar
GME 12

4E Rahul Chandroth
GME 11

4E Prasadh Panduranga Pai
GME 12

4E Arvind Lokhande
GME 11

4E Vinay Deswal
GME 14

4E Arun Assiwal
GME 13

Diesel Generator Engine Crankcase Contamination

The incident took place when the author was sailing as second engineer on a self-unloader vessel. In this particular ship, each of the three DG engine crankcases were found to be heavily contaminated with water, requiring complete change of the system lubricating oil charge.

Further investigation of the water ingress source led to the mist box situated in way of funnel.

A mist box is a box like steel structure, which is welded to a funnel high up in the uptake space from inside, facing aft of funnel. The mist box is open at aft with fixed downward inclined louvre type opening.

Vents from various spaces terminate in this space in a goose neck fashion.

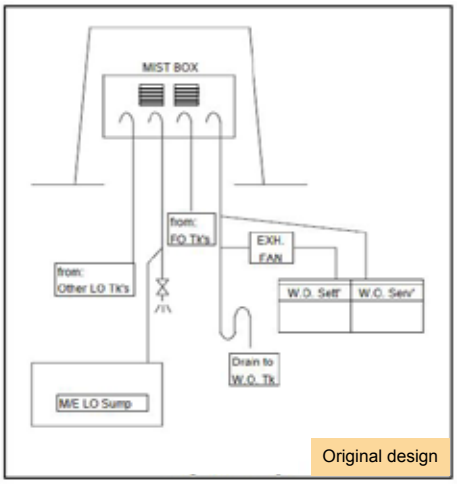
The vent pipes of varying diameters include those from spaces like HFO (Heavy Fuel Oil) service/settling tanks, various sludge tanks, incinerator waste oil tank, and crankcase breather pipes of main engine and diesel generator as well.

Oil fumes and water vapor discharge in a form of steam, are common sightings from mist box when seen from poop deck aft.

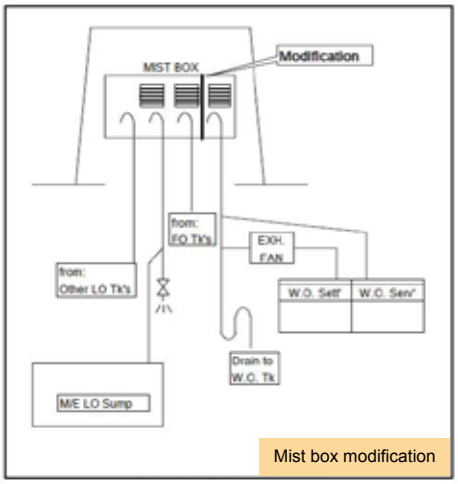
One of the approved methods of sludge disposal from incinerator waste oil tank is by evaporation of water in the sludge, as per MARPOL (Annex I). Appropriate entries are required to be made in the oil record book (Part 1) – machinery space operations. Large amounts of water are routinely evaporated. Some of this evaporated water gets condensed on the inside surface of the mist box. The condensed water collects on the bottom of the box and is finally drained out by the drain arrangement provided therein.

In this particular case, the mist box was not inspected for quite some time and was badly corroded. The loose corrosion flakes blocked the drain arrangement and caused considerable amount of water to accumulate. The height of goose neck vent was found to be very low (design fault) and hence the accumulated water at the bottom of the mist box got siphoned into the crankcases of diesel generators, contaminating same.

Gooseneck arrangement of vent pipes inside MIST BOX



Original design



Mist box modification

Remedial action:

1. Height of vent pipes was extended by appropriate lengths.
2. Inside of the space was de-rusted and repainted.
3. The drain arrangement was cleared of the debris.
4. The inspection date and next due date for inspection was stenciled on the outside of manhole cover

Lessons learnt & Prevention:

1. Regular inspection of mist box must be carried out and results mentioned in the PMS. This period is specified as 6 months in our PMS
2. Confirm that the drain line of the mist box is not clogged by opening the drain valve if provided or by physically opening a section of the pipeline. This can be included in the checklist for daily rounds of engine room
3. In some designs, the crankcase vent line of main engine and diesel generator has a goose neck with either a drain cock or plug. Open these plugs or cocks to verify that there is no clogging.
4. This is more important in case the vent of the waste oil sump tank leads to the same mist box
5. As can be seen in the drawing below modification of mist box can be considered by separating the vent pipes of waste oil settling/service tank from other tank vent pipes. ■

Mr. Abhiram Wakankar
Engineering Faculty
SIMS, Lonavala

Cranking Main Engine with Click of a Button

The time has come when a ship's main engine can be cranked with a click of a button from a mobile phone or similar devices. While conducting a crankcase inspection, engineers often face difficulties in continuing the procedure with tangled electric wire of the turning gear motor control switch box. This also may lead to an accident causing injury to the engineer and damage to the equipment. Our new innovation can turn on the engine with a mobile phone, thus avoiding the usage of long wires and cables. If mobile usage facility is not available, then it can also be operated by replacing mobile phone with transmitter and receiver. In addition, the project was also designed to show the working principle of a 2-stroke marine diesel engine, for the benefit of pre-sea cadets.

Team

A team of six students from the B. Tech (03) batch was formed to complete this project; comprising of cadets Ankit Shukla, Rupam Kanathey, Prabhjot Singh, Vyom Jha, Aishwarya Shukla and Subhayan Majumder.

Construction

The components of the engine were made from scrap materials. We began by scavenging discarded wooden boxes that are used to bring equipment to our R&D department. Our first job was to retrieve all the nails from the boxes and individual planks. Piston, piston rod, connecting rod, crank web, bedplate, A-frame and cross-head guide were made of wood; whereas the crank shaft, crank pins and crosshead pins were made of cast iron properly machined on a lathe. The liners were made of plastic pipes with an inner diameter suited sufficiently to meet the engine specifications. The construction of the engine was done in such a way that it looked like a cut section view.

Our engine model only shows two units while four other units are hidden. We constructed only two working units and rest of the unit space was left vacant to accommodate the prime mover. To minimize the components' balancing issues we decided to keep the crank angle at 180 degrees. The major difficulty faced was to construct a cross-head assembly. After rejecting a couple of designs, we decided to join an extension from the piston rod perpendicular to it, whose other end was drilled and passed into a hollow pipe through the hole and tightly

Engine frame

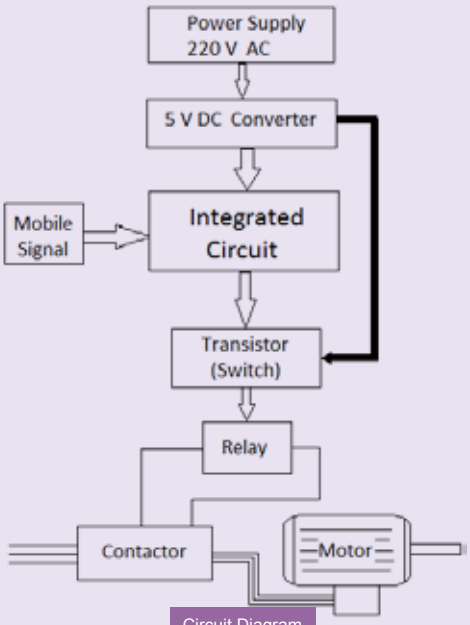
Cylinder head fitting

fitted. After this, the extension and the hollow pipe looked like a 'T' and the pipe was made to slide up and down within a wooden guide.

The motor used to drive the model is of a low speed and high torque 3 phase AC. It has an in-built speed reduction mechanism at the driving end and a hand wheel on the non-driving end to enable the operator to turn the motor manually. The crankshaft and the motor are coupled together by a sleeve coupling.

Circuit

To simulate the combustion process, three red LEDs were used for each unit. These LEDs would glow as the piston reached 20 degrees before TDC (Top Dead Center) till 20 degrees after TDC. A different independent circuit is used only to show the combustion process. To make this work, the piston position sensors were installed. The sensors are basically metallic contacts which complete the circuit and allow the LEDs to glow. We decided to fit the contacts on the cross-head guide rails that was already made from wood. This way we



Circuit Diagram

had a precise control over the timing. Now, the circuit is completed only when the crosshead link touches the contacts as it moves within the guide rails.

To start the motor, another circuit involving a 5v AC to DC converter, an integrated circuit, transistor, relay, a contactor and a mobile phone is used. 220v AC supply is converted to 5v DC and fed to the IC (Integrated Cicuit) and the transistor. A mobile phone is connected to the IC which receives a hexadecimal signal for the phone and the IC converts the signal in binary signal. The binary output from the IC is given to the transistor. This transistor will pass the current and energize the relay coil. Thus the relay completes the circuit for the main contactor energizing coil and the main contactor will close to provide power supply to the driving motor.

Operation

To activate the circuit, a call has to be made to the mobile number fitted in the circuit. When the call is automatically received the operator will open the dial pad and press 1 to start the motor. If the operator has to stop the motor, button 2 will have to be pressed to break the contact.

As the working part of the engine became ready we started to work on making the engine look real. We collected empty cardboard boxes and started covering up the frame of the engine, leaving the first two units.

Continued on Page 20

A Pirate Encounter

Capt. Pankaj Bhatnagar
Nautical Faculty
SIMS, Mumbai

The first recorded incidence of piracy dates back to as early as the 14th century BC when pirates threatened the Aegean and Mediterranean voyages. In Classical antiquity (starting in 8th century BC), the Illyrians, Tyrrhenians, Greeks, Romans, as well as the Phoenicians had been involved in acts of piracies. In the 3rd century BC, Illyrians were most popular pirates constantly raiding the Adriatic Sea, and thus conflicting with the mighty Roman Republic. Their threat was finally crushed after the Romans conquered Illyria in 168 BC.

The 'Golden Age' of piracy occurred from the 1650's through the 1730's. An increase in traffic of valuable cargo to and from Europe prompted this frenzied period of piracy.

Pirates have been the subject of countless books, movies, and plays. There's even a water ride at a popular amusement park in Florida dedicated to the pirates theme. However for seafarers of today, pirates are not the debonair, dramatic and dashing heroes; the books and movies make them out to be and will always remain despicable for their acts.

In the 21st century, the international community is still facing security concerns from piracy. There are many reasons for the piracy industry to thrive, such as destruction of the traditional fishing grounds, poverty, lack of government control, poor law and order in some countries, etc. The areas of major security concern in the world today are in Indian Ocean Region (off the Somali/ Yemeni coast in the Red sea and the Bay of Bengal), West Coast of Africa (Gulf of Guinea area) and South China Sea (Singapore & Malacca straits). These have been identified as High Risk Areas (HRA).

In the last 10 years, there have been instances of pirates subjecting their hostages to violence and other ill treatments. The average length of hijacking a vessel and her crew is over seven months. Somali pirates have, to date, sought to hijack a vessel, her cargo and crew and hold them until a ransom demand is paid. However some companies such as ours (Executive Ship Management) have a very good track record when handling piracy matters, as our ship staffs have been effective in implementation security measure as described in Best Management Practices (BMP).

To overcome the piracy challenge, the industry had developed Best Management Practices (BMP). It is contained in a booklet (latest being version 4 - BMP4), which details the various security measures to be taken by the company and ships. These measures assist ships to avoid, deter or delay piracy attacks in the High Risk Areas. Experience and data collected by naval/military forces, shows that the application of the recommendations contained within this booklet can and will make a significant difference in preventing a ship, becoming a victim of piracy.

The key three fundamental requirements of the BMP are to register with the naval authorities (monitoring the area) prior entry, regularly report to the naval authorities during the transit through the area and implement Ship Protection Measures (SPM). The Ship Protection Measures described in BMP are the most basic that are likely to be effective. The objective of these measures is not only to reduce the risk of piracy attack, but also deter boarding. If pirates are unable to board a ship they cannot hijack it.

Not all companies implement such robust measures, what happens then? I had one piracy experience which would not have occurred if measures as provided in BMP4 had been implemented at that time. My story as described below:

My Encounter with Pirates

I was sailing on board a container vessel; my first ship as a second officer. The ship departed Mumbai and was bound for West Africa. We were having cargo of containers to be discharged at several ports along West Africa. We anchored off Cotonou on one of the evenings and were told by the local agents that vessel will be berthing next morning.

That day, as part of my routine, I reached the bridge at 12 midnight to keep my watch. The third officer, a good friend, handed over the watch to me. We first made our way to the chartroom to see the chart of that area. Those days, the chart room used to be separate from the wheel house.

We decided to settle down over a cup of coffee first and spoke for a bit when our interesting conversation was interrupted by the AB on duty. The AB informed us of a small boat right ahead that was drifting towards us. We did not hesitate and made our way to investigate.

Since the vessel was fully loaded with containers, we could not see the boat from the bridge. Left with no option, the three of us decided to go down onto the deck to ensure if everything was in order.

When we reached the main deck on starboard side, I asked the third officer not to go any further because it was very dark and we had nothing to defend us. Undaunted, the third officer picked up a wooden plank that caught his eye and told me not to be afraid. He insisted on continuing our investigation.

We asked for the AB to bring a torch from the bridge as we proceeded towards the forecastle. When we reached around the mid-ship area, we noticed two to three people standing on deck on the starboard side. We asked them that what the matter was.

They said that their boat broke down and they wanted some water to drink. But before we could even respond, they came close to us and by the time we could realize what was happening, we were held by a few others who came from behind.

They took out their guns and knives and forcefully pushed us and made us sit down on deck. They tied our hands behind our back and both the legs too. During this ordeal, we noticed that the duty AB, whom we had sent back to bring a torch, was also sitting with us.

They asked us where the valuable cargo was and told us they would kill us if we lied. Being loyal to the company, we did not give details of the cargoes. We told them that we have only empty containers and some passenger buses. For about 10 minutes, they kept arguing and threatening us. Then they went to the store and paint locker on deck. With the help of their big tools, they had no difficulty in breaking the locks. Then we saw a few people carrying whisky, beers and cigarettes, probably from the bonded locker. The bonded locker was inside the accommodation in front of the engine room entrance.

There was no possibility of moving, even a bit, without arousing their suspicions. There were at least 20 of them and while they were busy in finding valuables on board, there was always someone who was keeping a constant watch on us with a big knife or gun with him. From time to time, they assured us that if we cooperated, they would leave us otherwise they would kill us.

No one from the ship's staffs would come for any help as they all were fast asleep. At one point, I was praying that no one on the ship should get up and raise the alarm in fear that these people might kill us before running away.

They took all the items of bonded locker and paints from the paint locker.

After about two and half hours tied up like this, one of the pirates came to us. He said that he was the head of the gang. He thanked us for our kind co-operation and informed us that they were leaving. He menacingly threatened us not to tell this to any one till morning. He ordered to open hands of the third officer. While opening third officer's hands, pirates noticed wrist watch and a ring in his hand. They took his watch and told him to hand over his ring. Third officer pleaded with them that it was a relic of his departed mother. They were unmoved and threatened that if he did not hand over the ring, he would also lose his finger together with his ring. I advised him to do as they ordered. They started leaving and told us not to move till they had blown the whistle from their boat. We saw the boat going away from our ship. We waited for some time in agony, waiting for the whistle, but the sound never came. After a really long five minutes, the third officer untied his legs and then proceeded to free us.

We dashed towards the accommodation hiding ourselves from the eyes of pirates in case they were still close. We went to Master to inform him about the incident. Captain opened his cabin door and we explained the situation to him. Our bodies were paining as were tied up for so long without proper movement. Third officer went to his cabin and was surprised that they had taken everything from his cabin, even his uniforms. Luckily none of us were hurt at all.

Later a head count was taken by the Captain and it was confirmed that all of us were in good condition. When we reported to the port authorities on radio, we were advised to inform our agents upon berthing.

It has been nearly 35 years since the incident but I can still recall it vividly. Why I should not remember this, it was on my birthday. We had a party after sailing out from that port, a re-birth party!

As it can be seen, the potential consequences of not following BMP in the High Risk Areas can be severe. The BMP with its three fundamentals can be summarised as per below diagram, an Aide Memoire from the BMP4. ■

Continued from Page 16

Final setup

Mountings

After finishing till the cylinder block, the cylinder heads needed to be designed. A plastic pipe of larger bore was cut to its pre-determined dimension and covered with cardboard on one end to serve as a base for other components. On top of it, two liter plastic bottles were cut into proper dimensions and placed to make it look like exhaust valves. Small cuboids were made and fixed on the pipe to resemble a fuel gallery. Four of these models were secured on the cylinder block. Fuel pump, actuator pump and governor servo motor were made out of plastic bottles and tissue paper roll. Three pipes were used for the distributor header, return header, and linkage to accommodate fuel control levers. The pipe lines on the cylinder heads were made out of tubular pipes used for insulating electrical cables. Four pipes were used for each unit having different lengths. Longest one was used to connect actuator to exhaust valve and others for connection of fuel pump to fuel gallery and from fuel gallery to fuel injectors. The exhaust manifold was made by joining two plastic buckets and finally covering it with chart paper. After completion of the setup the body was covered with white chart paper and painted with machine green paint. The scavenged space and crankcase door were cut out of cardboard in rectangular shape in appropriate sizes and pasted on the body. After painting the engine with three coats of paint, further detailing was conducted like bolt heads, unit number control air line with a control air bottle, etc. Finally, the high pressure pipes were covered with silver foil to provide an effect of sheathed pipes.

The control circuit employed is basically an electronic switch, which can be used to operate any electrical machinery like motors, pumps, air conditioning systems etc. This technology is very useful not only for the engineers but also, for instance – the farmers who need to cover a long distance to start their pump for irrigating the field. Basically our innovation can be used anywhere with very little modification depending upon the condition.

There is always a scope for improvement, which in turn makes life easier, better and hazard free.

Acknowledgement

We express our heartfelt gratitude to C/E Biju Baben, Mr. Elstan Fernandez and Mr. Sathish Babar for their wonderful support on this interesting project. ■

From left to right: Cdt. Aishwarya Shukla (B.Tech-03), Cdt. Rupam Kanathey (B.Tech-03), Cdt. Vyom Jha (B.Tech-03), Cdt. Subhayan Majumder (B.Tech-03), Cdt. Ankit Shukla (B.Tech-03), Cdt. Prabhjot Singh (B.Tech-03).

Historical Surrounding of SIMS: Bedse Caves

Cdt Ankit Tendon
Cdt Kumar Sarthak
Cdt Manjeet Singh
Cdt Rohit Singh
GME19
SIMS, Lonavala

For the seventh part of our travelogue series, our intrepid young travellers from SIMS, Lonavala are back once again to share their thoughts on yet another monument of marvel – the Bedse Caves.

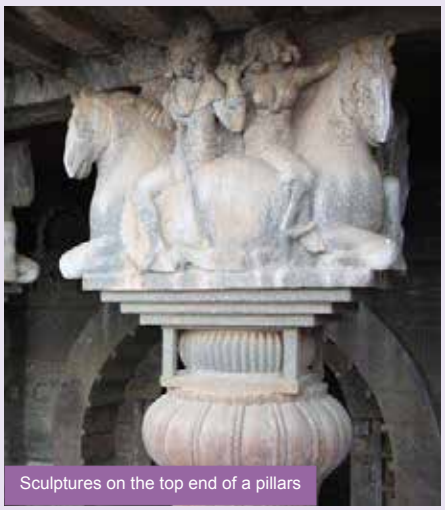
The Bedse Caves along with the previously featured Karla and Bhaja caves, are famously known as the three caves that reflect the origins of Buddhism in the region.

Magnificent masterpieces of the oldest Buddhist heritage of India, these ancient caves were built about 2,300 years ago by the Emperor Ashoka (304–232 BCE). The bitterly destructive war of Kalinga won by him, left mass deaths in its aftermath, turned out to be a turning point for him. He gradually turned to Buddhism and led construction of numerous prayer halls and meditation places for monks to aid propagation of Buddhism. Bedse caves have been declared to be of national importance under the ancient monuments and archaeological sites and remains act, 1958.

Also close to the caves are the famous foursome of Lohagad, Visapur, Tung and Tikona forts adjoining the Pawana Dam.

Architectural Highlights

The caves constitutes of Chaitya and Viharas. Chaitya being the main cave, normally refers to the hall enclosing the stupas. Chaitya traditionally served as the prayer hall for monks. Viharas, on the other hand, are constructions

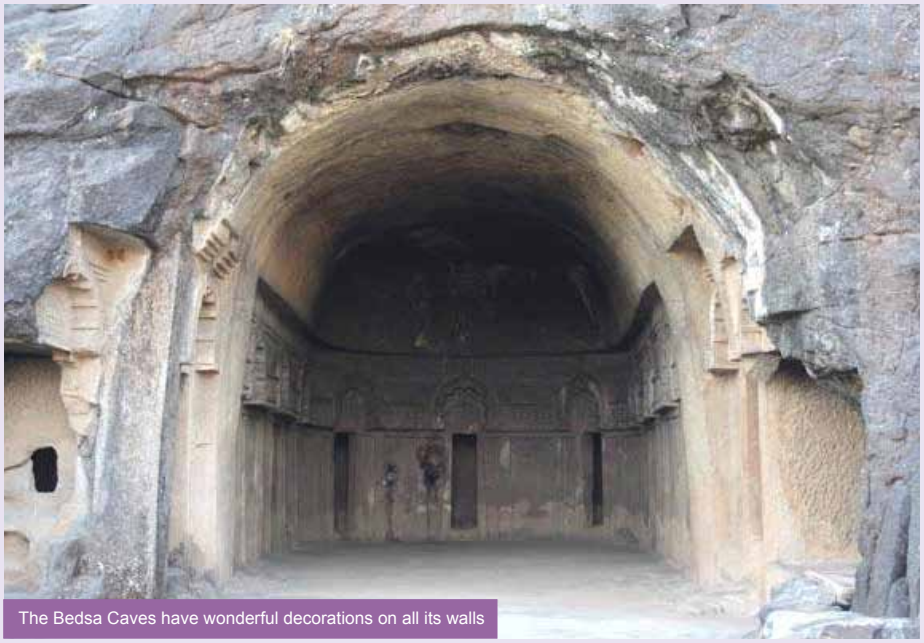


Sculptures on the top end of a pillars

that were made in order to provide resting places for the wandering Buddhist monks and served as the monastery. The insides of caves are carved with intrinsic handwork depicting some of the ancient artwork and inscriptions. The Chaitya cave has some of finest engraved pillars supporting the cave and has a Stupa in the centre, reaching till the ceiling of the cave, which adds to the beauty of the cave.

Our Journey

The caves are 15 kilometres away from the SIMS campus. Starting our journey, we hired a local taxi driver to drop us off at Bedse Village. We were driven along Kamshet and Pavana Nagar - Kamshet road before finally reaching the peaceful village of Bedse. From there, we had to walk some 500 metres to reach the stairs leading to the caves.



The Bedsa Caves have wonderful decorations on all its walls

From the base of the hill, there are 450 steps up, to reach the caves.

Standing at the base, we could only see the path leading up to the caves, but not the actual caves itself. The path was formed alongside a mountain slope and were rather steep though well laid-out. Thanks to our physical training instructor Mr. Lalman, and his daily exercise routines we had been subjected to - we had no trouble whatsoever in climbing up!

Due to the monsoon season, a number of small waterfalls had emerged along the path, giving a soothing perspective to the beauty of the area. The more we climbed, the better the view became. The village from where we had started from looked so tiny from the top, yet held a mesmerising view.

Out of the three caves, Karla and Bhaja caves are more popular and attract most of the tourist inflow compared to Bedse caves. This we were able to clearly judge as we did not pass-by anyone on our way up. This is probably because the Bedse caves are much smaller when compared to the other two. Upon reaching the caves, we found that the caves were not well-maintained. However they still had much to tell us about the history associated with them.

The entrance to the chaitya was cut through a large rock leading to the arch shaped entrance of the caves. There were four pillars supporting the roof. The top of these pillars were enhanced with the carvings of elephants,

horses and bulls with riders crowning the pillar. On the sides, there were small rooms having engraved doors with the engravings right till the roof.

Inside, the cave was made in such a way as if it were the back of an elephant. The roof was supported by 26 octagonal pillars, which were around 10 feet high and in the centre was a high stupa almost touching the roof. The pillars nearest to the stupa had Buddhist symbols engraved on them. One has to physically visit the caves to fully appreciate the inherent beauty of the caves.

The local residents believe that while standing at bottom of the stupa, if one manages to throw a coin to the top of it without the coin dropping then his wish will be granted. Sadly, none of us was able to achieve that and we could only hope for better luck next time.

We gleaned an interesting fact from the tourism department board that Lonavala town had got its name from the Bedse caves itself. Caves are called Leni in Marathi, which gave the name Lonali and then Lonavala to the town.

To the right of the main cave was Viharas, the monastery or residential cave. It was a dome shaped cave having different cellular compartments, which contained a number of rock-cut beds. It also had the same kind of engravings like the main cave but less intricate. It was much smaller in size than chaitya and had no pillars to support. To the left of the main cave was a smaller stupa, but it was not in a good condition. Its top portion was completely damaged.

The area surrounding the caves had a captivating view. We got so engrossed in the serenity of the whole atmosphere that we simply lost track of time. Once out of the reverie, we decided to proceed back to the base, where our taxi owner was waiting for us. Our little adventure proved to be enjoyable and educative at the same time. We learned a little bit more about the surroundings of our SIMS campus. Bedse caves are just one of the many places, which the city of Lonavla has to offer us.

We are really proud of the location of our campus, which has helped us learn about our nation's rich history and heritage while admiring the craftsmanship which existed thousands of years ago.

SIMS Course Receives OPITO Approval

With the accreditation from OPITO International, UK, a reputed accrediting body for courses in the Oil and Gas sector for conducting Basic H2S Courses, SIMS has once again added another feather to its cap!

First launched on 15th September at SIMS, Mumbai, the aims and objectives of the Basic H2S (Hydrogen Sulfide) Training was to ensure that the candidates gain the required knowledge and understanding of the particular hazards and properties of H2S, and the appropriate emergency response actions to take, should a H2S related incident arise. This is particularly crucial in offshore oil fields or oil refineries and such training is seen as a requirement by the industry's big players.

The course consists of theoretical and practical training. For the practical session, Emergency Breathing Apparatus (EBA) with hood, Emergency Breathing Apparatus (EBA) with mask, is provided to each candidate for hands-on training. Cascade system consisting of compressed air cylinders is used for connecting EBA to it and H2S meters are used to train in gas measurement.

A maximum of 16 delegates can be trained at any one time at SIMS, Mumbai. The duration of the course is four hours.

The approval process involved meeting the stringent criteria and standards laid down by OPITO. After successful desktop audit, the OPITO auditor visited SIMS Mumbai and conducted a thorough on site-audit, in order to ascertain the quality of physical resources and effectiveness of course delivery. The audit lasted for two days and the approval was finally granted in September 2015.

The Basic H2S Courses joins the likes of the highly rated Dynamic Positioning (DP) courses accredited by Nautical Institute, UK that SIMS, Mumbai has been conducting for the last two years.

SIMS faculty, Capt D Kishore was the project in charge, who was ably supported for the documentation work by Ms. Amikaakshi Poojari from SIMS quality. Ms. Neeraj Kumari assisted in this project. Mr. Shirish Kumar, Dean, and Mr. Arun Khatal, engineering faculty contributed in resource identification, procurement and development of maintenance plan of the equipment.

For more information on this course, please write to training.sims@samundra.com.

Contamination of Main Engine Crankcase Oil

* We invite responses from our learned readers as to the causes and lessons learnt through this case study. Please send your responses to samundraspirit@samundra.com.

S.Viswanathan, Principal
SIMS, Lonavala

This incident concerning the contamination of the main engine lubricating oil took place when the author was sailing as a third engineer on a container ship. The vessel was coasting far eastern ports on her voyage when the bilge collect tank had filled up in about 15 days.

The engineers could not find a space to keep the bilge water collected during the remaining port stay. The junior watch-keeping engineers, found a rather unusual method of dealing with the problem, instead of bringing it to the notice of senior engineers, they started storing the bilge water in the engine room cofferdam, which surrounded the Main Engine Sump.

After vessel's departure from the last loading port, the lubricating oil purifier started overflowing within six hours. Further investigations revealed emulsified oil in the main engine crank case sump. The sump was holding 40,000 litres of lubricating oil at that time.

Events that led to the incident:
When the port stay became longer than expected and water leakages were more than normal, the bilge collect tank became full. With no other place available for transfer, the water got collected in the bilge wells and started overflowing to the engine room tank top. Sensing the urgency to prevent main engine flywheel splashing the water, the watch-keeping engineers opened the inspection door of the cofferdam allowing the bilge water to enter the cofferdam.

When the ship finally sailed the last loading port, within six hours, the main engine lubricating oil purifier was found overflowing. The main engine lubricating oil was analysed and was found to contain more than 10% water.

Extent of damage:
The main engine was stopped, crank case was inspected, and finally it was found that the lubricating oil pump had drawn the water stored in cofferdam through a defective flanged joint in the suction line passing through the cofferdam.

The complete lubricating oil from the sump had to be replaced with fresh oil, (fortunately the ship had enough reserves), crankcase and sump had to be cleaned dry and vessel was stopped for more than eight hours. After the vessel resumed sailing, there was no further incident involving this issue until the voyage was completed safely. ■

From the details provided and your knowledge about operating lubricating oil purifier and main engine systems, please provide answers to the following regarding this case study:

1. What is the purpose of providing a cofferdam in a ship?
2. What could be the cause for oil gasket in the suction line to become defective?
3. What could have been done to dispose off the bilge water safely in such a situation?
4. What is the reason for the lubricating oil purifier to overflow in this instance?

Responses to previous case study "Fuel Injection Pump Seizure": Issue 30 (July 2015)

Thank you readers for the large number of feedback and responses on the previous case study. Here's a compilation of the answers received:

Q1. What is the correct procedure of changing over fuel from heavy oil to diesel oil and vice versa?
Change over from distillate fuel to residual fuel
1. Open the steam supply to the fuel oil heaters and trace heating
2. Change over the three way cock on the service tank outlets from distillate fuel to residual fuel
3. Engine fuel pump fuel inlet temperature control
a. In automated viscosity control system:- The fuel oil outlet temperature is initially set and no need to adjust
b. In those systems without automated viscosity control:- The fuel oil heater outlet temperature should be slowly increased in proportion to the amount of residual fuel in the system.

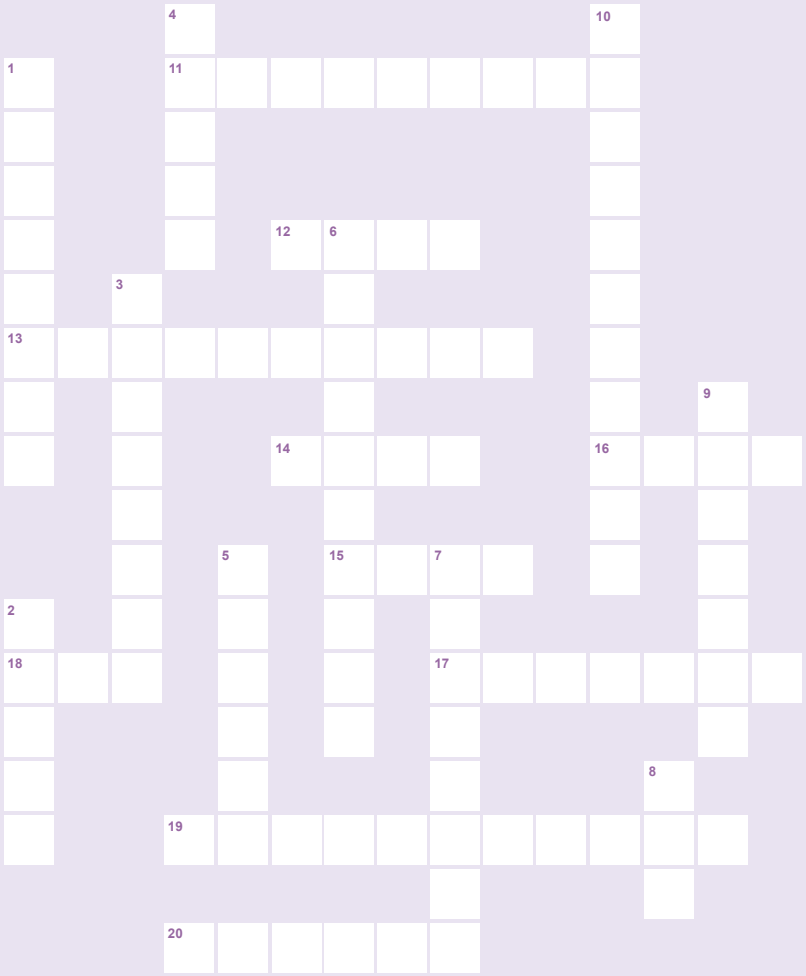
Change over from residual fuel to distillate fuel
1. Typically the time the changeover should be started is governed by the manufactures specifications regarding temperature gradient and in the range of 35 to 45 minutes.
2. Change over the three way cock on the service tank outlet from residual to distillate fuel
3. Engine fuel pump fuel inlet temperature control
a. In automated viscosity control system:- The fuel oil outlet temperature is initially set and no need to adjust
b. In those systems without automated viscosity control:- The fuel oil heater outlet temperature should be slowly decreased in proportion to the amount of residual fuel in the system.

With both the arrangement, fuel injection equipment can be damaged and circulating pumps can gas up if changeover is carried out too quickly.
4. Close the steam supply to the fuel oil heater and the trace heating

Q2. What is the clearance between plunger and barrel of a main engine fuel pump?
Approximately 7-10 microns depending on plunger diameter.

Q3. What is the purpose of mixing column provided in fuel line?
Fuel temperature during change over cause sticking of high pressure fuel injection components as a result of thermal shock and reduced fuel oil viscosity and lubricity at the high pressure fuel pump inlet. Mixing column allows the gradual transition (viscosity and temperature) from HFO to DO and vice versa. ■

Maritime Safety



Down

1. This can be used in liquid state as a freezing agent
2. Intact Stability Book Provided by
3. Commonly Carried Noxious substance Under category Y
4. Fire Involving Magnesium never attack with
5. ___ convention is prevention of Marine pollution by Dumping of waste & other matter
6. It is the common area of Class D fire
7. It prevent back flow of H-C gas in IG system
8. Non-Thermal Plasma Reduction system is a secondary Method of reduction of ___
9. Largest oceanic Garbage site is
10. It is a content of SOPEP Locker

Across

11. ___ area of no operational Discharge of Oil
12. Baltic is a __ Area
13. EEDI is a Technical Measure Adopted by IMO to Reduce ___ gases
14. Minimum number of water tight bulkheads in Ship
15. ___ code has been mentioned in both SOLAS & MARPOL Convention
16. Most polluting Heavy metal in Ocean
17. The Executive Body of the IMO
18. Most imminent threat of pollution to sea
19. It involves thermal treatment of waste Material
20. The international convention for the prevention of pollution from Ships

Cdt. Aman Kumar
Cdt. Davinder Singh
GME-19
SIMS, Lonavala

Answers

Down: 1. NITROGEN 2.SOLAS 3. METHANOL 4. WATER 5. LONDON 6. ECONOMISER 7. DECKSEAL 9. PACIFIC 10. SCUPPERPLUG

Across: 11.ANTARCTIC 12.SECA 13.GREENHOUSE 14.FOUR 15.IMDG 16.LEAD 17.COUNCIL 18.OIL 19.INCINERATOR 20.MARPOL

Just Live It!

Life itself has no meaning,
But is an opportunity to make it meaningful,
Live it to the fullest,
Or it will fly away, as a storm swallows a feather.
Everyone wants to live happily,
But are tied down by the shoes of responsibility,
Live it loud my dear,
Or there'll be nothing left to cheer.
Never give up today to live on tomorrow,
Even when compromising for the family,
Live it undauntedly,
Or it will vanish like a drop in the ocean.

Some stops when they lose their dear ones,
Some hides behind the word fate,
But fate is beyond our reach,
So to live, is what we can cherish.
Theories are told from generations.
Ideas are born to millions,
To "love yourself" holds the meaning,
To "live free" is the unrealized secret.

Poem by:
Cdt. Harshal Shrivastava
GME-18
SIMS, Lonavala

Photo by:
Cdt. Siddhrath Singh
GME-20
SIMS, Lonavala

Inter-House Debate Competition

SIMS, Lonavala held an Inter-house debate competition on the topic "Zero Alcohol Policy" for its cadets on 15th September 2015 at the campus Amphitheatre. Coming together from the various courses and houses. spirited cadets participated in this lively debate that wrapped up with the opposition house lifting the trophy.

The team that supported the zero alcohol policy, Kaveri and Godavari, had cadets Naveen Philips (GME 19), Sarthak Singh (B.Tech 02), Rajendra Singh Bhati (B.Tech 03) and Alwin N. Babu (DANS 19) whereas cadets Manson James (GME 19), Akash Kaushik (B.Tech 02), Shubham Uniyal, (B.Tech 03) and Jasneet Singh (DANS 19) from the Tapi and Ganga team opposed the subject.

The supporting team spoke about the harmful effects of alcohol on the human body e.g. damage of liver, leading to obesity, addictiveness and loss of self-control etc. They said that it also gives a false sense of happiness in addition to ruining the family life to eventually leading to death.

Maintaining their stance, the Tapi and Ganga team stated the advantages of alcohol on human body such as how it relieves mental stress, keeps body warm, helps put on weight and improves appetite. They also said that moderate alcohol consumption leads to control HDL i.e. cholesterol, lower risk of kidney stone. The participants were judged not only on their oratory skills but bringing their arguments substantiated with reasonable facts and analysis. All participants impressed with their keen presentation skills and a sense of humour.

Faculty members Mr. Biju Baben, Captain Johery and Captain Parera who were the judges of the event, expressed that the debate went better than expected and it was a tough call for them to give the result; which eventually went in favour of the Tapi and Ganga team. Despite the result, the judges gave the cadets valuable guidance on the negatives of alcohol and the reasons behind the strict zero alcohol policies that is found onboard vessels.

Mr.Biju Baben presented the prizes and certificates.

Ganga House Crowned Indoor Sports Champions

Ganga House were crowned this year's Indoor Sports Champions after scoring just one point above runners-up Tapti house's 20 points in a tightly contested competition.

The games of table tennis, carom and chess, were held at the campus from 24th to 28th August.

Cadet Rajat Pendharkar of Godavari house was all elegant with the racket and had his technique spot on to beat cadet Avinash Srivastava of Ganga house in the final match of table tennis singles championship. Cadet Rajat won the match with 3 games to 1.

Cadets Rinku Kumar and Sagar Tari from the Tapti house played to their full potential to defeat Cadet Ramiz Hakim and Mohit Sethi of the Kaveri house in the doubles version of the Table tennis championship. The final score of 2 games to 1 in favour of Tapti House is an indication of the dominance they enjoyed in the fiercely fought final match of the event.

Cadet Ashutosh Kumar of Ganga House brought laurels and valuable points to his house by coming first in the chess championship. Cadet Sharad Kumar of Godavari tried every move in the game but could garner only a close fought second position in the battle of brains.

Cadet Upendra Sahastrabudhe of Ganga house ruled the carom board on the decisive day by defeating Cadet Sagar Tari of Tapti House in the singles final match. The doubles crown was notched up by cadets Sagar Tari and Sahu Devendra of Tapti House who overcame stiff challenge by the Ganga house represented by cadets Upendra Sahastrabudhe and Deen Dayal Simon.

From left to right: Cdt. Akash Kaushik (B.Tech-02), Cdt. Jasneet Singh (DNS-19), Cdt. Manson James (GME-19), Cdt. Shubham Uniyal (B.Tech-03), Cdt. Alwin N.Babu (DNS-19), Cdt. Naveen Philips (GME-19), Cdt. Sarthak Singh (B.Tech-02), Cdt. Rajendra Singh Bhati (B.Tech-03)

Samundra Spirit's Editorial Team wishes you and your family a safe, happy and prosperous Diwali on 11th November 2015

Visitors' Comments Third Quarter, 2015

Interesting and illuminating. The level of expertise and degree of attention given to both course content and instructional hardware is outstanding. Cadets graduating from SIMS would appear to have an advantage over their competitors from the start. Many thanks to ESM, SIMS and faculty for the hospitality.

Capt. Nishit Kapoor
Sr. Vice President
ECM Maritime Services, LLC

EXECUTIVE
SHIP MANAGEMENT
PTE LTD

www.executiveship.com

ACLASSABOVETHEOTHERS

The winning shot is not a luck but result of persistent precision training!

It is our commitment that each crew on board an ESM managed ship will undergo such precision training at our world-class training institute SIMS, Mumbai and Lonavala to ensure you win the shot with a perfectly safe ship run at the highest operational standard.

78 Shenton Way, #21-00/22-00, Singapore 079120
Tel: (65) 63240500 Fax: (65) 63244544 Email: esm@executiveship.com Website: www.executiveship.com