

# Mélange

March 2024



Monthly Magazine of The Institute of Marine Engineers (India)







# The Institute of Marine Engineers (India)

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- ENGINE ROOM SIMULATOR MANAGEMENT LEVEL (3 DAYS) COURSE FOR MEO CLASS I (OFFLINE) – 27th April 2024/ 2nd May 2024/ 6th May 2024 /27th June 2024/ 1st July 2024/ 4th July 2024/ 29th August 2024/ 2nd September 2024/ 5th September 2024
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*Edited and Published by:*  
**Sunil Kumar** on behalf of  
The Institute of Marine  
Engineers (India).  
Published from 1012,  
Maker Chambers V,  
221 Nariman Point,  
Mumbai -400021.

*Printed by:*  
**Corporate Prints**  
Shop No.1, Three Star Co-op. Hsg.  
Society, V.P Road, Pendse Nagar,  
Dombivli (E) - 421 201.  
District - Thane

*Design and Layout:*  
**Kryon Publishing Services (P) Ltd.,**  
www.kryonpublishing.com

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# From the Editor's Desk

Dear Esteemed Readers,

As we set sail through the pages of iMélange, we embark on a journey pouring with the latest developments, profound insights and heartfelt reflections that define our maritime realm. In this edition, we are thrilled to bring you a rich drapery of news, events and reflections, each thread intricately woven to illuminate the diverse and dynamic landscape of our industry.

Branch News unfurls with the grandeur of the Global Maritime Seminar, known as "GLOMARS 2024." This gathering served as a beacon, drawing industry luminaries from around the globe to convene and deliberate on the pressing issues shaping our maritime future. From sustainability initiatives to technological innovations, GLOMARS 2024 proved to be a crucible of ideas and collaboration, setting the course for a more resilient and prosperous maritime community.

In a spirit of camaraderie, industry leaders converged at the IME(I) annual get-together 2024. This esteemed gathering provided a platform for networking, knowledge exchange and celebration of our collective achievements. Amidst the convivial atmosphere, bonds were forged, and aspirations shared, reaffirming our commitment to excellence and progress in the maritime domain.

The horizon of knowledge expanded further with the Seminar on Different Dimensions of Shipping – Opportunities and Challenges. This insightful discourse delved into the multifaceted nature of our industry, exploring the myriad opportunities and challenges that lie on our maritime voyage. From regulatory complexities to technological disruptions, participants gained invaluable insights to navigate the ever-evolving seascape of modern shipping.

Meanwhile, a Technical Session on "Global Risks and Impact on Shipping Industry" cast a spotlight on the formidable challenges confronting our industry on a global scale. From geopolitical tensions to environmental hazards, attendees gained a comprehensive understanding of the risks at hand and the strategies needed to mitigate their impact on maritime operations.

The 17th annual All-India Technical Seminar, "Transtech 2024," further enriched our collective knowledge base, providing a platform for discourse and collaboration among industry stakeholders. From emerging technologies to best practices, Transtech 2024 showcased the transformative power of innovation in shaping the future of transportation.

Our Student's Column shines a spotlight on innovation with an exploration of Auto Dock Using Sensor System. This groundbreaking technology exemplifies the ingenuity and creativity of our future maritime leaders in driving technological advancements.

As we sail through the seas of innovation and exploration, let's infuse the spirit of Holi into our journey! Let your creativity bloom like the vibrant colors of this festive occasion. Share your articles, poems, and anecdotes with us at [editornewsletter@imare.in](mailto:editornewsletter@imare.in) by 7th April 2024, and let's paint our upcoming issue of iMélange with the hues of your enthusiasm and joy. Here's to a Holi filled with laughter, love, and endless inspiration!

**SUNIL KUMAR**  
Honorary Editor – iMélange



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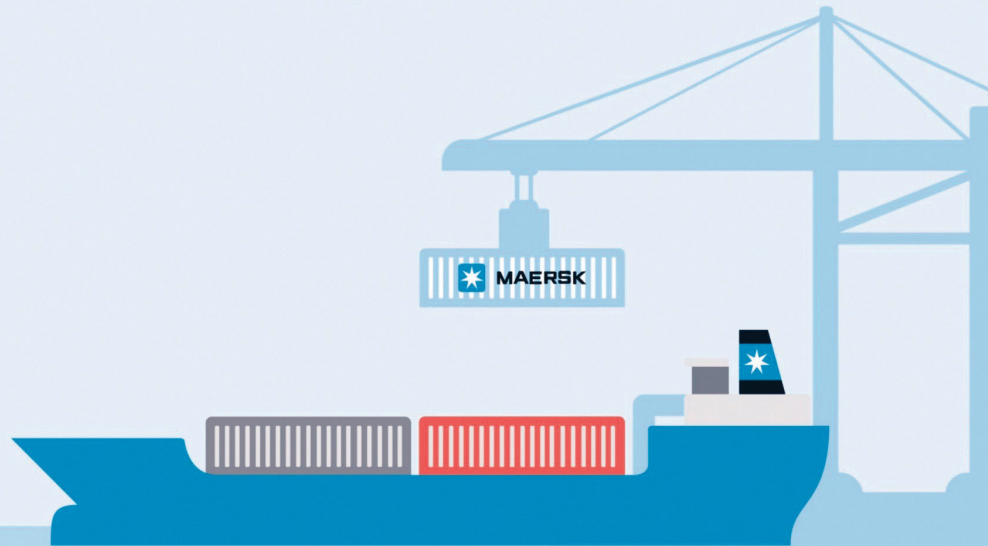
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# Global Maritime Seminar “GLOMARS 2024”

The Global Maritime Seminar “GLOMARS 2024” by the Institute of Marine Engineers (India), Vizag branch, took place at the Gateway Hotel, Visakhapatnam on 8th and 9th March 2024. The event saw enthusiastic participation from marine engineers worldwide.

**Shri. Shyam Jagannathan (IAS)**, Director General of Shipping, was the Chief Guest of the event. Distinguished personalities on the dais included **Shri. V. Lakshmipati Rao**, Convener, GLOMARS 2024, **Shri. Durgesh Kumar Dubey**, Dy Chairman, VPA, **Dr. D. S. Anand**, Chairman, GLOMARS 2024, **Shri. Rajeev Nayyar**, President, IME(I), **Dr. VVS Prasad**, Chairman, IME(I), Vizag branch, **Shri. Arun Kumar Gupta**, Independent Director, Dredging Corporation of India, and **Cmde K E Mathew**, Director, Hindustan Shipyard.

GLOMARS 2024, held once every four years, focused on disseminating information about Artificial Intelligence and Machine Learning trends,

innovations, and regulations, both for academic knowledge and practical applications.

Participants included major PSU's and Institutions such as Botra Shipping, VPA, HSL, Andhra University, Visakha Container Terminal Pvt. Ltd. (VCTPL), Kakinada Sea Ports Limited, DCI, HIMT, and IR Class, among others. Over 30 papers were presented on various subjects, moderated by distinguished luminaries. The event concluded with the distribution of souvenirs and mementoes to all attendees.

**Dr. Kalyan Mitra** received Omkarnath and Chuni Wazir award from the Director General of Shipping for his exceptional contribution to the academic field.

**Shri M. Suresh Kumar**, CEO of Botra Shipping, delivered the Keynote address, and three Technical sessions featuring 30 technical papers were presented on March 8th and 9th. The plenary session summarised the technical event, leading to the Valedictory function where prizes were distributed.

Sr. No.	Topic of the Paper	Position	Presented by
1	OPPORTUNITIES & CHALLENGES USING AI / ML & DATA ANALYTICS FOR MARITIME PROCUREMENT	1st	Mr. Sumant Kulkarni and Mr. Rajesh Kasargod
2	REVIEW OF APPLICATION OF ARTIFICIAL INTELLIGENCE (AI) AND MACHINE LEARNING (ML) IN MARINE SECTOR	2nd	Mr. Zia Ur Rahmana, Mr. Anil Kumar Korupojua Mr. Arun Shankar Vilwathilakama and Dr. Asokendu Samantaa
3	ARTIFICIAL NEURAL NETWORKS AND EXPERIMENTAL ANALYSIS ON THE PERFORMANCE AND EMISSIONS OF A DIESEL ENGINE USING MESUA FERREA BIODIESEL WITH CHROMIUM OXIDE	3rd	Mr. Jagadish Kari, Mr. Varaha Siva Prasad Vanthala and Mr. Jaikumar Sagari

## Student's Paper Presentation

Sr. No.	Topic of the Paper	Position	Candidate's Name
1	UNIFIED MONITORING SAFETY DEVICE	1st	Nirjhar Sarkar
2	AI AND MACHINE LEARNING IN MARINE INDUSTRY	2nd	Tamizhselvan S and Balasundaram Sai Kumar
3	THE ROLE OF AI AND MACHINE LEARNING IN FIRE AND LIFE-SAVING ENGINEERING IN THE MARINE SECTOR	3rd	Krishnaraj and Venkatesh



## *Glimpses of the Event*













## Uniting Industry Leaders at the IME(I) Annual Technical Seminar and Get-Together 2024

The Institute of Marine Engineers (India) Mumbai Branch, Navi Mumbai, and Gujarat chapters hosted its Annual Technical Seminar and Annual Dinner on 17th February 2024, bringing together industry leaders and experts for an insightful and engaging day. The seminar, held at the IRS Auditorium Powai in Mumbai, featured presentations from distinguished speakers covering critical topics in the maritime industry.

### Exploring Cutting-Edge Advancements: The Technical Seminar Kickoff

The ceremony was initiated by **Mr. Sanjeev Mehra**, the Honorary Secretary, who served as the Master of Ceremony. The seminar began with the lamp's traditional lighting, symbolising the enlightenment of knowledge. The esteemed guest speakers, **Shri. Shyam Jagannathan (IAS)**, Director General of Shipping, and **Shri. Ajithkumar Sukumaran**, Chief Surveyor & Additional Director General with the Government of India, were warmly welcomed with floral tributes and provided valuable words of encouragement to aspiring marine engineers. The Branch Chairman, **Mr. David Birwadkar**, set an inspiring tone for the day with his welcome address.

**Mr. Shobhit Kapoor**, Head of the Seminar Committee, introduced the seminar's agenda, which promised a day filled with engaging and informative sessions. Presentations covered various topics such as digitalisation, Port State Control regulations insights and EU 'Fit for 55' - EU ETS and its Impact on the Shipping Industry. Notable presentations included discussions on maritime digitalisation by **Mr. Akshay Jain** of Vedam Design, route optimisation by **Mr. Kieth De Souza** of One Ocean, and decarbonisation solutions by **Mr. Pankaj Mishra** of Wartsila. Further, **Shri. Aniruddha Chaki** and **Mr. Mudit Mehrotra** shared valuable insights into Port State Control regulations, while **Dr. Suhas Vhanmane** from the Indian Register of Shipping demystified the EU 'Fit-For-55' EU ETS.

The seminar concluded with a vote of thanks by Treasurer **Mr. Rajesh Kasaragod** and the distribution of mementoes to the Guests of Honor

and speakers, underscoring appreciation and remembrance for their contributions.

The seminar served as a platform for knowledge exchange and professional development, with attendees including marine engineers, industry experts, and academics. The discussions and networking opportunities provided by the seminar are expected to lead to collaborations and innovations within the industry.

### Annual Get - Together

Following the successful seminar, the evening concluded with a gala dinner co-hosted by the Mumbai Branch, Navi Mumbai, and Gujarat chapters of IMEI.

The Mumbai Branch, Navi Mumbai, and Gujarat chapters of the Institute of Marine Engineering of India (IMEI) convened for their annual dinner, marking a splendid evening filled with maritime excellence.

**Mr. Sanjeev Mehra**, the Master of Ceremony, orchestrated the evening, bringing together esteemed Office Bearers, Executive Committee members, and Governing Council representatives of the IMEI. Chairman Mumbai Branch **Mr. David Birwadkar**, expressed gratitude to all attendees, emphasising the collective strength of the maritime community in driving progress and collaboration.

Distinguished guests, including the Director General of Shipping, **Shri. Shyam Jagannathan IAS**, and **Capt. B.K Tyagi**, CMD of the Shipping Corporation of India Ltd., added prestige to the occasion. The event was sponsored by the Indian Register of Shipping, further enhancing its significance.

The IMEI annual dinner provided industry leaders and marine engineers a platform to connect, share insights, and celebrate achievements in a festive atmosphere and with camaraderie and industry camaraderie, the evening proved to be a memorable affair, reflecting the shared commitment to advancing the maritime sector.



## *Glimpses of Technical Seminar*





# Glimpses of Annual Get - together







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Advanced Training for Chemical Tanker Cargo Operations [CHEMCO]

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## Seminar on Different Dimensions of Shipping – Opportunities and Challenges

The IME(I), Kochi Branch, organised a day-long Seminar in collaboration with Kunjali Marakkar School of Marine Engineering (KMSME) on 14th February 2024. Themed “**Different Dimensions of Shipping – The Challenges and Opportunities**,” the seminar took place at the Seminar Hall of KMSME.

The Inaugural Programme, presided over by **Prof. (Dr) P.G. Sankaran**, Vice-Chancellor of Cochin University of Science and Technology, commenced with an invocation and welcome address by **Prof. Venugopal**, Director of KMSME (also Vice Chairman of IME(I), Kochi Branch). Seminar Convenor, **Mr. Rajan Isaac**, provided an overview of the event, followed by a Presidential Address by **Prof. (Dr.) Sankaran**, acknowledging the seminar’s relevance and the diverse student attendance from various Training Institutes in Kochi.

**Mr. Antony Prince**, President and CEO of GTR Campbell Marine Consultants Ltd., inaugurated the seminar, shedding light on the current status and challenges faced by the shipping industry. He emphasized the challenges for ship designers due to evolving anti-pollution laws, diverse fuel usage, and emerging technologies like autonomous ships. However, he highlighted the opportunities presented by Artificial Intelligence, 3-D Printing, and other modern advancements in ship design and operation.

**Mr. Suresh Kurup**, Managing Director of Synergic Oceanic Services India Pvt.Ltd., the guest of honor, discussed the challenges and opportunities in his company, covering crewing, technological progress, digitisation, cybersecurity, and environmental requirements.

Felicitations followed by **Mr. Sajjan P. John**, FIMarE, Chief Operating Officer of Kochi Water Metro Ltd., and **S. Krishnankutty**, Chairman, IME(I), Kochi Branch. **Prof. Jis George**, KMSME, expressed gratitude to all invitees, who were honoured with mementoes. Additional events included the inauguration of a new webpage designed by cadets and the release of the inaugural newsletter, both managed by cadet committees.

The morning session continued with paper presentations, initiated by Mr. Krishnankutty. **Dr. Simon K A.**, a senior member of the maritime

fraternity, presented the first paper, “Regulatory Hegemony in Shipping,” focusing on the control held by European countries in maritime regulations and the need for affected entities to unite against perceived bias.

**Mr. Aseem Malik**, On-board Training Manager of M/s. Schulte Ship Management Company (India) Pvt. Ltd., presented the second paper, “Technological Advancements in Shipping – Opportunities more than Challenges,” emphasising the influence of technology on various shipping sectors and highlighting tools like Internet of Things, Artificial Intelligence, Augmented Intelligence, and 3-D Printing.

**Dr. P.V. Sasikumar**, a senior member of the maritime fraternity practicing law, discussed “Insurance Coverage for General Average Claims” in the third paper, providing an overview of maritime insurance and the evaluation of claims based on the extent of loss incurred.

The morning session concluded with a lively discussion, addressing questions from cadets. After a lunch break, the afternoon session resumed at 3:00 PM, with **Mr. Rajan N.**, General Secretary, IME(I), Kochi Branch, chairing.

The first paper in the afternoon session was presented by **Mr. NMC Nair**, FIMarE, focusing on the “**Human Factor in Shipping**.” **Capt. Vinod Naveen**, a Master Mariner, presented the second paper on “**Block Chain Technology**,” discussing its various applications and highlighting the challenge of digitising all data in the seamless cycle of operations. **Dr. M.B. Mohandas** concluded the seminar with the third paper, “**The Changing Landscape of Shipping Finance Towards Sustainable Marine Transport**,” discussing ship financing from order placement to operation.

The presentations were followed by a question-answer session, addressing doubts from the audience. **Mr. Mukundan Pullat** summed up the seminar, and a special guest, **Mr. Deepak Shetty, IRS (Retd.)**, shared insights on the **Maritime Anti-Corruption Network (MACN)**, its growth, and its impactful role in combating corruption in the maritime world.

The seminar proved to be an enriching forum, providing valuable perspectives on the challenges and opportunities in the dynamic field of shipping.





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**May 2024: 03**

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April 2024

1. Engine Room Simulator - Operational Level	01-03, 10-12, 22-24
2. Engine Room Simulator - Management Level	15-19
3. High Voltage Safety and Switch Gear Course at (Operational Level)	03 May
4. High Voltage Safety and Switch Gear Course at (Management Level)	-

## Value Added Courses

April 2024

1. Practical Marine Electrical (Basic) - Module 1	01-05, 15-19, 22-26
2. Practical Marine Electrical (Advance) - Module 2	22-24, 29-02 May
3. Electronics for Marine Engineers - Module 4	01-02, 25-26
4. Instrumentation, Process Control & Programmable Logic Controllers - Module 5 & 6	15-19
5. Auxiliary Diesel Engine and Maintenance Course	01-06, 15-19, 22-26
6. Bridge Manoueuvering & Engine Control - Management Level	
7. Bridge Manoueuvering & Engine Control - Operational Level	
8. Hydraulics for Engineers - Basic	15-16, 29-30
9. Hydraulics for Engineers - Advanced	10-12
10. Maritime Crew Resource Management (MCRM)- CAE Accredited	01-04, 22-25, 29-03
11. Machinery Breakdown Safety Campaign - 1	
12. Machinery Breakdown Safety Campaign - 2	
13. Machinery Maintenance - Skill Enhancement - Module 2	01-05, 15-19, 22-26
14. Machinery Maintenance - Skill Enhancement - Module 3	15-18, 29-03
15. Machinery Maintenance - Skill Enhancement - Module 4	01-03, 22-24
16. Maritime Safety Management - Module 1 (Occupational & Behaviour Based Safety)	10-12, 17-19
17. Maritime Safety Management - Module 2 (Risk Assessment)	10
18. Maritime Safety Management - Module 3 (Shipboard Safety Officers)	11
19. Maritime Safety Management - Module 4 (Accident Investigation)	12

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## Glimpses of the Seminar



Lighting of Traditional lamp



Prof. Venugopal, Director, KMSME welcoming the gathering.  
Invitees on the Dias, from left- Mr. S Krishnankutty, Mr. Sajan P John, Mr. Antony Prince, Dr. P. G. Sankaran, Mr. Suresh Kurup



Mr. Suresh Kurup being presented with a memento.  
Other Invitees on the dias – Mr.Prince Antony (seated) and Mr. Sajan P. John



Mr. Rajan. N., General Secretary, IME(I), Kochi Branch presenting Dr. Mohandas a memento



Invitees along with Cadet Representatives who designed the new web page as well as the News Letter



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**Entry Criteria: Master (FG) / MEO Class I (FG) / GMDSS (GOC) / ETO COC Holder and TOTA / VICT Holder**

This Course ensures that the Core publications namely, the STCW Convention and the Code and the Quality Management System is familiarized and well understood by the trainee.

This Course also covers the techniques of assessment and developing written tests and conduct of oral and practical assessments

### Assessment, Examination and Certification of Seafarers

**Dates: 13th May 2024**

**Time: 9am - 5pm**

**Course Fee: Rs.15500/- (per participant inclusive of Taxes)**

**VENUE: IMEI HOUSE, Plot No.94, Sector-19, Nerul, Navi Mumbai- 400706**

**For Registration:- [CLICK HERE](#) or click on - <https://imeimum.marineims.com/course/register>**

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## Technical Session on “Global Risks and Impact on Shipping Industry”



The Institute of Marine Engineers (India) Chandigarh Chapter, in collaboration with Institution of Engineers (IEI), Merchant Navy Officer's Association and the Company of Master Mariners of India (CMMI) organised a technical session on 1<sup>st</sup> March 2024. The topic of the seminar was “Global Risks and Impact on Shipping Industry.”

The seminar was moderated by **Shri. Jagmeet Makkar**, Director SkillsPlus. His esteemed panellists included: **Mr. Taran Jot Singh**, Marine Engineer, BW LPG; **Mr. Sagar Jaswal**, Consultant, EY; **Capt. Prabhat Nigam**, Vice President, Chitkara University; and **Capt. Jagdeep Kahlon**, Managing Director, Ocean One Ship Management.

The presentation and the panel discussion included Rapidly changing space that encompasses immense challenges posed by Geopolitical, Geo economical, interstate wars; Unprecedented voting population in one year in more than sixty nations with high probability of changing policies and possible alignment adjustments; Changing trading patterns; Proactive regulations in Maritime industry as well as technology enablers;

Misinformation and disinformation environment that can affect the perceptions, transport people from facts to 'lies & fiction' leading to brain washing and further suffocate human through its antisocial and antinational agenda.

Shri. Makkar discussed about decarbonisation and digitalisation which are now embedded in the industry as structural issues. The panellists too mentioned that a lot of development is taking place with alternative fuels; a lot of fantastic things are happening. The panel believed the biggest and most worrying risk is war







between states and the way that geopolitical risks are moving to geoeconomic risks. “That is dangerous. It means every country is just trying to look after its own benefits. Jagmeet mentioned that you cannot call it deglobalisation but it is almost like anti-globalisation and it is already happening. Trade flows will change, and it will have a serious impact on shipping. As mentioned in the recent Global Risks Report 2024, 19th Edition by World Economic Forum, Trade barriers are said to have increased by 38% in 2023 compared with 2022 – meaning indirect tariffs, cabotage, increased duties, policy changes, protective measures, and protective trade policies are seen to have more impact on trade than direct tariffs. Further Mr. Makkar added that, “Direct tariffs you can see, but trade policies that are restrictive in nature can have a very high impact on maritime trade. “This year is going to be a very difficult year – 64 countries will be going to elections; half of the world’s population will be voting. One can imagine the policy upheaval. There will be serious disruptions, because when governments

change, policies change, geopolitical scenarios change, and the relationship between countries goes through positive or negative impact. The impact on the entire supply chain is going to be a challenge.”

Unforeseen extra impact of the Houthi attacks on shipping in the Red Sea is obvious, the moderator continued, and ships diverting around the Cape of Good Hope rather than transiting the Suez Canal will be racking up thousands of extra trade miles, with associated carbon costs, let alone the additional costs of chartering, bunkering, wages, and so on, which will have to be passed on to customers and consumers. Jagmeet and the panel pointed out that there is no problem with demand for shipping but the main issues are the supply chain challenges and disruptions, and resilience – or lack of it.

The panel concluded with a few pieces of advice as to what should be do at the ground level. The informative session was appreciated by all.



## Enthusiastic Participation by Student Fraternity in Technical Seminar

The Institute of Marine Engineers (India), Chennai branch successfully hosted an online Technical Seminar on 19th February 2024 at 1830 hours, attracting a robust attendance of over 200 members, including students from MTIs, on the Microsoft Teams platform.

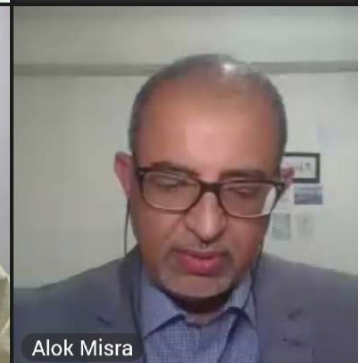
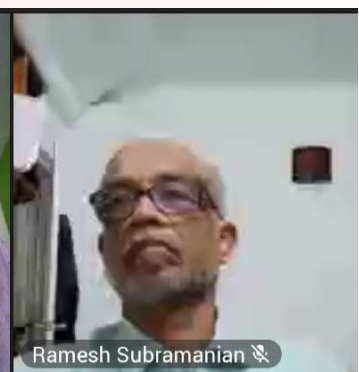
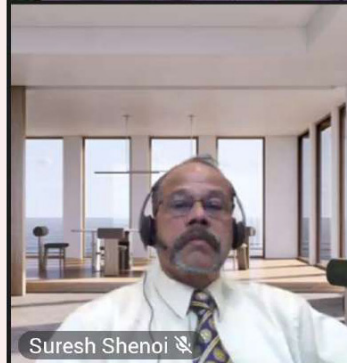
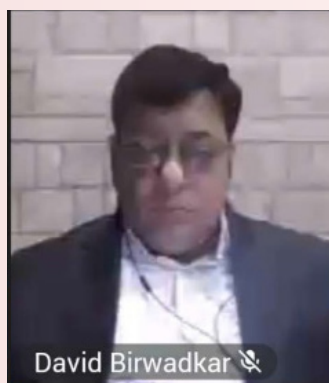
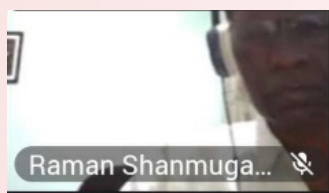
The event commenced with **Mr. R. Muthusamy**, Hon. Secretary, IME(I), Chennai, introducing the online seminar's concepts and ground rules. **Mr. Suresh Sheno**i, Chairman, IME(I), Chennai, extended a warm welcome, outlined the meeting's agenda, and expressed gratitude to the substantial turnout of members and MTI students. Mr. Muthusamy skillfully anchored the proceedings.

The keynote address was delivered by **Mr. David Birwadkar**, IME(I) Students Committee Chairman & Chairman Mumbai Branch, who expressed appreciation for the invitation from the Chennai Branch. **Mr. S. Ramesh**, EC Member, IME(I) Chennai, introduced the Guest of Honor, **Mr. Alok Misra**, Technical Manager, Goodwood Shipmanagement Singapore. Mr. Misra presented an engaging and interactive topic, leaving a lasting impression on the participants.

**Dr. K. Sivasami**, Honorary Treasurer, IME(I), Chennai, introduced the cadet speakers from AMET University, moderating the technical session. The topics covered included:

- Cadet. K. Keerthivaasan: "Marine Gas Turbine Technology propelling the future of Naval"
- Cadet. Apoorva Srivastava: "Exploring the Different types of Governors in Marine Diesel Engines"

Mr. Muthusamy facilitated the Q & A Session, and the meeting concluded with a vote of thanks. He expressed gratitude to Mr. Birwadkar, Mr. Alok Misra, cadet speakers from AMET University, and the authorities of AMET University (Student Chapter) for their support. The grand success of the technical seminar was attributed to the active participation and keen interest shown by the cadets and participants.





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## Technical Session on “Understanding the Basics of the Arbitration and Conciliation Act, 1996”



**T**he Karnataka Chapter of The Institute of Marine Engineers (India) organised a dual event on 13th March 2024 at the Eden Club in Mangalore. This event comprised a Technical meeting and a Stress Management session.

**Ms. Rupali Joshi**, the Hon. Secretary of the Karnataka Chapter, extended a gracious welcome to all attendees. She introduced the distinguished speakers for the evening: **Ms. Shraddha Ojha**, Deputy Manager, Corporate Legal at the New Mangalore Port Authority, and **Ms. B K Sneha**, a revered facilitator from the Brahma Kumari Centre in Mangalore.

Ms. Ojha delivered an educative presentation on 'Understanding the Basics of the Arbitration and Conciliation Act, 1996.' She highlighted the intricacies of the Alternate Dispute Resolution (ADR) system, encompassing negotiation, mediation, conciliation, and arbitration. Additionally, she provided a comprehensive overview of the benefits and also limitations inherent in ADR. Drawing parallels, Ms. Ojha likened the outcome of arbitration to a judicial judgment, emphasising its binding nature on the parties involved, as adjudicated by the tribunal.





In the second segment of the session, Ms. Sneha delved into the crucial topic of stress management in contemporary life. With empathy and insight, she highlighted the pervasive impact of stress on individuals, emphasising its ubiquitous presence in modern society. She held a short session in meditation to emphasise on the importance of self-control in managing stress.

Both the speakers were felicitated by **Shri. Bodhraj**, Surveyor-in-Charge, MMD, Mangalore in the presence of **Shri. Preetam Kumar**, Chairman, Karnataka Chapter.

Both sessions received commendable attendance and were met with appreciation from all participants. Following the enlightening discussions, Ms. Joshi graciously delivered a vote of thanks, expressing gratitude on behalf of the Karnataka chapter of IMEI and attendees.



# 100<sup>th</sup> Governing Council Meeting – An Overview



The 100<sup>th</sup> GC Meeting of the Institute was held on 08<sup>th</sup> -10<sup>th</sup> March, 2024 at Visakhapatnam along with Glomar Maritime Seminar (GLOMARS) 2024 organised by IME(I) Visakhapatnam Branch at Hotel Taj Gateway.

The President, Mr Rajeev Nayyar, who chaired the meeting, welcomed the GC members and commenced the proceedings.

The Chairpersons of the various Subcommittees and Branches presented their activities/Proposed Budgets for the FY 2024-2024 with the future plan.

The Agenda for the GC Meeting, which usually addresses matters of governance, also included discussions/information/proposal and resolutions such as:

Declaration of Nominee for Omkarnath and Chuni Wazir award for Excellence in Education – Facilitated the award to Dr. Kalyan Mitra with the certificate and prize.

Adoption of 99<sup>th</sup> GCM minutes, approval of Proposed Budgets for the FY 2024-245, Ratification of New 531 and Transfer of Grade 167 members, informed the pending legal issues, Status of the Training Courses in Goa and Kolkata Branch, Installation of Solar Power systems at HO approx. 75KW with confirmation of availability of extra FSI if any, installation of Infrastructure/ equipments in the Auditorium at HO while conducting the hybrid zoom meetings/Technical Meeting conferences including procuring of laptop for each branches, Cyber security infrastructure, cloud based storage data, IME(I) iConnect publicity to all members, updation on MER iMélange, elibrary, clarity on the responsibility on the updation on the website contains with the visibility of IME(I), updation of the day to day activities with the future events (including social Media), identify the professional entity, increase of student chapters at various branches and updation on the Benevolence fund.

The Proposal to amend ORP for updating the sub committees functions was also discussed. Reports on external bodies including BES, Update on IMO meetings, (Including to involvement/participation of more active

members to do the volunteers work in the shadow committee in various areas, IMU with the proposal of R&D and research activities, report on meetings attended by IME(I) on Assocham, FICCI and MoPSW, acknowledgement of reports from the Election Committee with their suggestions.

Following suggestions also noted such as:

More participation of student's members in future International Seminar WMTC

Suggested each Branch to nominate their representatives on the same

To Increase the Value added courses in each branch with the infrastructure facility.

To plan and decide to organise future seminars in Kochi COMARSOM and ISCO in Kolkata Branch in 2024-2025

To procure of Land at Kochi and Chennai branch to run the DG Approved courses and Value added courses with the guidelines of procurement of immovable properties laid down in the ORP.

To convert the Chapters into Branch (with the Vision of Chapter's for the next 5 years) as per the criteria laid down in the ORP.

To prepare a strategic Documents with the plan upto 2030

Suggested Kolkata Branch to invite Patna Chapter's members on 3<sup>rd</sup> April 2024 in the NMDCC technical meeting.

Member's welfare subcommittee started planning to gather the data from the members to get the concessional rates on their premium (on top up too).

For student members covering medical insurance up to their course completion period.

Suggested to coordinate with ISWAN with enter into MOU for the benefit of the Corporate members of IME(I)

The meeting ended with a vote of thanks to the Chair by the Vice President.



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**5**  
Days



#### Course Dates:

**Basic IGF:** 1st April 2024/ 22nd April 2024/ 6th May 2024/ 20th May 2024

**Advanced IGF:** 15th April 2024/ 14th May 2024/ 11th June 2024

Time: 8:30am - 4:30pm

Registration Link: <https://imeimum.marineims.com/course/register>

Course Fee: Rs.15000/- (per participant inclusive of Taxes)/Rs.13500/- For IME (I) Members (inclusive of Taxes)



MEO CL-I (FG)	2 months	01st May 2024/ 01st July 2024/ 02nd Sept 2024/ 1st Nov 2024	Rs. 30000/-	<a href="#">CLICK HERE</a>
MEO CL-III NCV-CEO	2 months	1st July 2024	Rs. 25000/-	<a href="#">CLICK HERE</a>
MEO CL-II (FG) - NEW	4 Months		Rs. 40000/-	<a href="#">CLICK HERE</a>
MEO CL-III NCV-SEO PART - A	2 months	1st August 2024	Rs. 25000/-	<a href="#">CLICK HERE</a>
MEO CL-III NCV-SEO PART - B	4 Months	May 2024	Rs. 38000/-	<a href="#">CLICK HERE</a>
MEO. CL-IV NCV	4 Months	01st July 2024	Rs. 31000/-	<a href="#">CLICK HERE</a>
Diesel Engine Gas Combustion Simulator for MEO Class I	3 Days	27th April 2024/ 2nd May 2024/ 6th May 2024/ 27th June 2024/ 1st July 2024/ 4th July 2024/ 29th August 2024/ 2nd September 2024/ 5th September 2024/ 29th October 2024/ 4th November 2024/ 7th November 2024/ 28th December 2024	Rs. 12000/-	<a href="#">CLICK HERE</a>
Engine Room Simulator Management Level for MEO Class II	5 Days	1st Apr 2024/ 25th Apr 2024/ 2nd May 2024/ 27th May 2024/ 1st June 2024/ 25th June 2024/ 1st July 2024/ 26th July 2024/ 1st Aug 2024/ 27th Aug 2024/ 2nd Sep 2024/ 25th Sep 2024/ 1st Oct 2024/ 26th Oct 2024/ 1st Nov 2024/ 26th Nov 2024/ 2nd Dec 2024/ 26th Dec 2024	Rs. 14000/-	<a href="#">CLICK HERE</a>
Engine Room Simulator Operational Level for MEO Class IV	3 Days	08th April 2024/ 18th April 2024	Rs. 9990/-	<a href="#">CLICK HERE</a>
Refresher Updating Training Course for all Engineers (RUCE )	3 Days	8th April 2024/ 22nd April 2024	Rs. 7000/-	<a href="#">CLICK HERE</a>
Basic Training for Ships using Fuels covered within IGF code Course	5 Days	1st April 2024/ 22nd April 2024/ 6th May 2024/ 20th May 2024/ 3rd June 2024/ 17th June 2024	Rs. 14500/-	<a href="#">CLICK HERE</a>
Advanced Trg. for Ships using Fuels covered within IGF code	5 Days	15th April 2024/ 14th May 2024/ 11th June 2024	Rs. 20500/-	<a href="#">CLICK HERE</a>
Assessment, Examination and Certification of Seafarers	10 Days	13th May 2024	Rs. 15500/-	<a href="#">CLICK HERE</a>



## India Successfully completes the 1<sup>st</sup> IMO Member State Audit

On 4<sup>th</sup> March 2024, India successfully completed the 1<sup>st</sup> IMO Member State Audit at DGS demonstrating its full compliance of the relevant IMO Conventions, Codes and Guidelines as applicable.



The international team of IMO IMSAS Auditors from Poland, Germany, Singapore and the IMO Secretariat, London after the Audit closing session at DGS on 4th March 2024



## Pro-Vice Chancellor, IMU Applauds Emerging Leaders at their Passing Out Ceremony

To inspire and guide future leaders, **Dr. Rajoo Balaji**, Pro Vice Chancellor of Indian Maritime University and a Fellow member of The Institute of Marine Engineers (India), graced the Passing Out Ceremony for ETO 29 Batch at HIMT College, Kalpakkam, Chennai, on 22nd February 2024. Warmly welcomed by **Shri. Sanjeev S Vakil**, CEO of HIMT, alongside **Mr. Tirth S Vakil** and **Capt. Anand Subramaniam**, Principal of HIMT, the event kicked off with a vibrant Ceremonial Parade, during which the Chief Guest took a salute, symbolising respect for the dignitaries.



After engaging with faculty members, Dr. Balaji embarked on a campus tour, praising the state-of-the-art facilities and educational opportunities. Addressing the cadets, he shared his academic journey, applauded the college's growth, and emphasised the vital role of Indian seafarers in global maritime excellence. Offering insights into the evolving marine industry and emphasising continuous learning, Dr. Balaji concluded with motivational quotes, encouraging the cadets to persist in their careers.

Subsequently, **Shri Abid Ansari**, CIC, presented a comprehensive course report, featuring projects by each cadet. The ceremony continued with the cadets taking an Oath of Pledge led by **Mr. V. Ganpati Rao**, followed by the Prize Distribution Ceremony, marking a memorable conclusion to the event.







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# 17th Annual All-India Technical Seminar “Transtech 2024”



The 17th edition of the All-India Technical Seminar “Transtech 2024” was organised by Tolani Maritime Institute (TMI), Pune & Institute of Marine Engineers (India), Student Chapter, TMI, Pune in association with Institute of Marine Engineers (India), Pune Branch & The Institution of Engineers (India), Pune Local Centre from 6<sup>th</sup> - 8<sup>th</sup> March 2024, at TMI Campus.

The technical carnival of TMI “Transtech 2024” portraying this year’s theme, ‘Revolutionizing Shipping: Trends, Technologies, and Sustainable Development’, began on 6th March 2024 with the arrival of the Chief Guest, **Dr. Vibha Dhawan**, DG, T.E.R.I., New Delhi, the Guest Speaker, **Mr. Rajesh Doshi**, Founder Director, and CEO of Dwarka Kutch Ferries & Tourism Pvt Ltd., the President of the Institute of Marine Engineers (India), **Mr. Rajeev Nayyar** and the Secretary, IEI-Pune, **Mr. Uttam Awari**, followed by the lamp lighting ceremony and the Vandana of goddess Saraswati.

The TMI Principal, **Dr. Sanjeet Kanungo** shared his feelings in his welcome address and introduced Transtech 2024 as the official platform for the professionals



of tomorrow from Maritime Training Institutes and Engineering Colleges across India to showcase their talent and churn out new ideas for the future of the maritime sector. This was followed by the address of Mr. Nayyar, and **Mr. Abhishek Kumar**, Faculty in Charge, Institute of Marine Engineers (India), Student Chapter, TMI Pune.

**Dr. Dhiren Dave**, convenor for Transtech 2024, shed light on the current state of the shipping industry and the various trends and technologies that are shaping its evolution. He highlighted the need to acknowledge the significance of embracing sustainable practices and responsible development within the shipping sector. He emphasized the importance of adopting eco-friendly approaches, safeguarding maritime security, ensuring the well-being of the individuals involved in shipping, and fortifying the resilience of supply chains.

The inaugural function was also graced by the guest speaker; Mr. Doshi, who spoke on “Fishing and Salt-Pan Workers.”

The Chief Guest Dr. Dhawan, released ‘Transtech-2024 - Book of Proceedings & ‘Tolani Maritime Institute’s Journal of Maritime Fundamental and Applied Research’ followed by her Inaugural speech on “Climate Change: Impacts, Adaptation & Mitigation”. The inaugural session was concluded with the vote of thanks by the Vice-Principal, Marine Engineering, **Mr. Shailendra Kumar**.

The inaugural session was followed by Technical Paper presentations conducted in presence of the Judges **Mr. Anand Thakoor**, **Mr. Anil Bhat**, **Mr. Ajit Shelar** along with the session chairs **Dr. N.D. Junnarkar** and **Capt. Arvind Tripathi** from TMI, wherein eight papers were presented on various topics by the participants.

Day 2 of Transtech 2024 was equally eventful and energetic. The guest speaker of the day was **Mr. Kishore Darda**, Vice President, Garware Tech. Fibres Pvt. Ltd. He presented a very informative lecture on the





“Innovations in Rope Technology to Enhance Crew Safety and Ease of Operations”. Following this, Vice Principal, Nautical Studies, **Capt. Indranath Banerjee** presented vote of thanks.

The session was followed by Technical Paper presentations chaired by **Ms. Sujata Male** and **Mr. Sankar Subramanian** respectively. A total of six papers were presented on various topics by the participants.

The event was followed by the much-awaited Marine Quiz. The quiz was preceded by an elimination round as a total of seven teams participated. In the final four teams, Tolani Maritime Institute, Maharashtra Academy of Naval Education and Training and Samudra Institute of Maritime Studies competed with each other with their full potential, skill and knowledge but in the end, the winner of the Marine quiz was declared as Tolani Maritime Institute.

The final day of Transtech 24 was the valedictory function. The event began with the welcoming speech by Dr. Kanungo, Principal, TMI followed by the a very informative talk by the Guest speaker **Mr. Koustubh Phalnikar**, Joint GM, L&T Defence, Powai and a very inspiring talk by the Chief Guest **Mr. Shirish Deshmukh**, Director, Padmashree Electronics, Pune. The Guest speaker Mr. Phalnikar, talked on “Indigenous Technologies for the Naval Sector” while the chief guest, Mr. Deshmukh, spoke on the topics like missile technology, his work experience with Dr. Abdul Kalam, out of box thinking etc.

Finally, the much-awaited Prize Distribution function was held in which all the winners were awarded certificates and Cash Prizes. The Transtech 2024 Theme Poster prize was won by **Cdt. Anshul Kushwaha**. The wonders of their graphics and photography skills were being aired on all three days as **Cdt. Karan Gulati**, **Cdt. Samarth Jogi** and **Cdt. Harsh Sharma** won the Transtech Video Making Competition. The winners of the very popular Marine Quiz competition were **Cdt. Rushil Jain**, and **Cdt. Anik Raj** from Tolani Maritime Institute, followed by **Cdt. Samrudh**, **Cdt. Alampalli Manjunath Sukesh** from MANET, Pune, in second place and **Cdt. Dhruv Kumar Mangal** and **Cdt. Shivam Kumar** from the TMI secured the third position.



A total of 24 entries were registered for the Model-Making Competition. The models were judged by **Mr. Deepak Saranjame**, **Mr. Arvind Kumar** and Technical Superintendent, MOL Group, **Mr. Amarbir Singh**. The winner of the Model Making Competition were **Cdts. Omkar Giri, Prashant Shedage, and Vaibhav Tijare** from Anglo Eastern Maritime Academy with their model on “Solar powered alternators to reduce GHG emissions.” This was followed by models by other two teams of TMI at second and third positions. Out of the 6 potential entries, the winner of the Poster Making Competition were **Cdts. Manav Kengar, Aniket Palave, and Kohinoor Jethani** from TMI for their poster on, “Toroidal Propeller: The Future of Propulsion”.

Two special prizes for best girl cadet in paper and model category were sponsored by **Mr. Sanjeev Ogale**, Former President, Institute of Marine Engineers, Pune. The prize for best paper presenter girl was won by **Cdt. Vaibhavi Pare**, from T. S. Chanakya. The prize for best model maker girls went to **Sharvari Karhe and Ruchita Kagne** from PVG College of Engineering, Pune.

The General Manager, Class NK, **Mr. Sumithran Sampath**, also awarded the cash prizes and certificates, instituted by Class NK for model makers of TMI.

The technical paper presentation, being the highlight of the event, had its top three technical papers in the following order; the third place was secured by **Cdts. Manav Gurjar, Karan Rautela** from TMI, for their paper titled, “Renewable Energy-Driven Liquid Nitrogen Generation for High-Pressure Work Extraction in an Open-Loop System”. The second place was taken by **Cdts. Vatsshree Dwivedi, Jeet Shah, Hardik and Niharika** from TMI, for the paper titled, “Applications of Quantum Sensors in Shipping”. The winner of the paper presentation competition were **Cdts. Vaibhavi Pare, and Aditya Gaikwad** from T. S. Chanakya, for their paper titled, “Green Shipping and Environmental Sustainability - Ammonia Fuel Cells”.

Capt. Manoj Hirkane, the Sr. Vice-Principal, concluded the valedictory session with a vote of thanks.





## “Unreasonable Conduct is Negligence”



The recent decision of Madras High Court in *Value Shipping Limited v Owners and parties interested in vessel MV Nadhenu Purna* [2024] makes it clear that the commercial parties can be said to commit negligence if they seek unreasonable extensions for performing their part in a commercial contract as agreed.

### Facts of the case

The parties (buyer and shipowner) signed a Memorandum of Agreement (“MoA”) for sale and purchase of MV Nadhenu Purna (“vessel”). The buyer made a security deposit as consideration towards purchase of the vessel under an Escrow Agreement signed by both parties and the Escrow Agent. The shipowner, *inter alia*, had undertaken to obtain vessel delivery documentation such as statutory clearances, governmental permissions and certificates for legal transfer of ownership of the vessel in favour of the buyer and issue a notice of readiness to the buyer before a contract cancellation date as agreed in the MoA by the parties. This undertaking prima facie was one of the main terms that went to the root of the contract. The shipowner sought several extensions for postponing the cancellation date, one after the other as granted by the buyer, however upon receiving fourth such request for extension the buyer cancelled the MoA, citing breach of MoA and contended that the time is essence of the MoA. The buyer under MoA had all options either to extend the cancellation date or to cancel the MoA itself and reserved all rights to claim any damages irrespective of whether the buyer extends the cancellation date or cancels the MoA itself.

### Buyer's claim

The buyer submitted that the shipowner had failed to obtain the required clearances and governmental permissions and thus failed to issue the notice of readiness by the agreed cancellation date which was granted several extensions as mentioned above. The buyer also contended that any prudent shipowner, being in shipping business would know about complexities in obtaining required approvals, clearances and permissions. The buyer thus sought refund of the security deposit with interest and other costs and damages from the shipowner.

Upon buyer's application to secure its interests, the court granted an order of arrest based on above pleadings from buyer and the vessel was arrested as a result.

### Shipowner's contention and defense

The shipowner sought lifting of the arrest order against the vessel.

The shipowner, *inter alia*, submitted in its defense that it has asked for extensions of cancellations date of MoA on bonafide grounds while it has carried out all due diligence as required in securing the above clearances and permissions however could not secure them timely due to governmental inaction. The shipowner thus submitted there occurred circumstances which were beyond its control. The shipowner in its defense also argued governmental inaction as **force majeure** event as mentioned in the Escrow Agreement and thus attempted to escape liability. The shipowner also disputed the buyer's claim that MoA being a contract





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of sale falls under section 4(1)(r) of the Admiralty Act 2017 as shipowner contended that MoA was not perfectly executed. Shipowner argued that for MoA to be categorised as a contract of sale an addendum to MoA was yet to be executed. Further, the security deposit was paid to the buyer and the shipowner sought lifting of the arrest order without being liable to pay anything else to the buyer.

### Buyer's response

The buyer opposed the *force majeure* plea as pleaded by the shipowner (applicable to Escrow Agreement) contending that shipowner, carrying on business for several years, was well aware or ought to be aware of the time that may be required for obtaining required clearances and permissions from the government. Further the Escrow Agreement and MoA were two different agreements and thus *force majeure* could not be read along with MoA. Moreover, as the dispute has arisen of the contract for sale of a vessel, the suit is a maritime claim under section 4(1)(r) of the Admiralty Act 2017. The buyer also contended that legal costs and expenses incurred for enforcement of maritime claim is also a maritime claim.

### Issues before the court

- (a) Whether the claim is a maritime claim falling under Section 4 of the Admiralty Act, 2017?
- (b) Whether the shipowner has committed breach of contract under MoA?
- (c) Whether the shipowner is required to furnish security to vacate the earlier issued order of arrest passed against his vessel?

### Decision of the court

The court rejected the shipowner's argument that MoA was not a contract for sale and held that claim is a maritime claim. The court observed that maritime claims are enumerated in Section 4(1)(r) of the Admiralty Act, 2017 that deals with disputes arising out of a contract of sale of vessel. The court observed that the term "arising out of" in Section 4(1) of the Admiralty Act, 2017 are words of wide amplitude and there is no reason to give any restricted meaning to the said words. The term "contract of sale" thus includes both actual sales and agreement for sale. As the buyer has invested huge money for the said purchase of the vessel and has further made several efforts to seek remedy, he is justified in exercising maritime claim against the shipowner.

On whether the shipowner committed a breach of contract, the court observed that when the MoA stipulates a cancellation date, before which the notice of readiness will have to be issued by the shipowner of the defendant vessel, the shipowner is necessarily bound by the same. The buyer need not wait endlessly for the completion of sale by the shipowner, that too when he has already made a security deposit covering 15% of the total sale price with the Escrow Agent. As per the court, the reasons for seeking extensions of the cancellation date by the

shipowner, on a prima-facie consideration, reveal the negligence on the part of the shipowner to take required measures to obtain required clearances and governmental permissions. Therefore the shipowner cannot shirk its responsibility by blaming the authorities for its failure to obtain all the necessary permissions on time.

On the third issue, the court cited the Supreme Court's decision in *Videsh Sanchar Nigam Limited v M.V. Kapitan Kud [1996 (7) SCC 127]* where the apex court held that the test an Admiralty Court follows at the time of grant of arrest or vacating the order of arrest is whether the plaintiff has "a reasonably arguable best case". Considering the breach of contract as committed by the shipowner as discussed above, the court held that the buyer has made out a reasonably arguable best case to substantiate its claim. Further the court cited the Supreme Court decision in *Chrisomar Corporation Vs. MJR Steels Private Limited & Another [2018 (16) SCC 117]* where the apex court held that interest and legal costs are also a maritime claim. The Admiralty Court grants arrest of vessel to secure a maritime claim, which could include interest and maritime costs. The court found various costs and expenses as listed by the buyer as genuine or as not disputed by the shipowner and thus directed the shipowner to furnish equivalent security as against vacating the order of arrest of the vessel except the loss of profits for which there was insufficient evidence presented by the buyer in front of the court.

Interestingly the shipowner argued for the dispute over costs and expenses to be referred to arbitration as the MoA consisted of an arbitration clause, however the court after citing the decision of Bombay High Court in *Siem Offshore Redri AS Vs Altus Uber [2018 SCC Online Bom 2730]* opined that the present suit was an *action in rem* and only after the security is furnished by shipowner as per the directions of the court thus making an appearance, the action in rem will become an *action in personam* and the parties will have to go for arbitration in accordance with the arbitration agreement contained in the MoA.

The court also provided clarity on why the MoA and the Escrow Agreement could not be read together as was argued otherwise by the shipowner. The court observed that:





- a. MoA was the contract for sale between the parties.
- b. Escrow Agreement was to secure the sale consideration and to protect the interest of both parties with the inclusion of a third party – Escrow Agent.
- c. Considering the language of the “Entire Agreement Clause” in the MoA, both contracts cannot be read together.
- d. As Arbitration Agreements in MoA and Escrow Agreement are different and even seats of arbitration are different, both are prima facie independent contracts.
- e. Force Majeure clause is not available in MoA and is only present in Escrow.

### Comments

The court through above judgment has made it clear that delaying tactics employed by parties such as in above case may lead to adverse results. Parties like shipowners who are reasonably considered to understand all intricacies involved in shipping transactions including ship sale and purchase must be mindful of their conduct as against the promises they make to other parties while dealing with them. Parties must also pay attention to include consistent terms while drafting two or more agreements which they contemplate to be read together during contract execution. Drafting of clauses such

as Force Majeure, Arbitration Clauses, Governing Law Clauses etc. must be paid close attention taking into account all scenarios including disputes as may arise in future between the parties. Also noticeable was the court’s observation that Section 35 and 35 (A) of the Civil Procedure Code are applicable only to Commercial Courts Act, 2015 where the court imposes only realistic costs on the offender as against the costs awarded in the ordinary civil suit. If realistic costs are not imposed, the object of the Commercial Courts Act will get defeated. Furthermore, the court also made it clear that mere existence of an arbitration agreement is not a bar to the Admiralty Court granting arrest and proceeding further till the shipowner furnish security for the claim or as per the directions of the court to secure the claim for the claimant.

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# Auto Dock Using Sensor System



**Abstract:** The future is automation. Auto-Dock is an automation based system which enables the vessel with bow and stern thrusters to dock herself without the involvement of human. Auto-dock uses a sensor based setup which would be installed on the hull's port and starboard sides. The sensor cluster consists of sensors like LIDAR, RADAR and Cameras. The auto-dock system works using industrial grade hardware and software fused together using a computer (Auto-Dock Computer) that can handle thousand of processes at a time. Auto Docking eliminates human error and makes docking a super easy task. Algorithms like EKF (extended Kalman filter) predicts the future states and accurately and docks the ship without any possibility of accident.

**Keywords:** Neural engine, Aeries II, EKF (Extended Kalman Filter), HMI (Human Machine Interface), Automation

## Introduction

### 1. Need For Automation

In the modern world everything revolves around sensors and automation. This paper proposes the

process and method for implementation of sensors on board to make Auto-Dock possible for cargo, cruise and autonomous ships. This complex yet easy to use system would be a great help to the officers on board in performing docking, which is considered as one of the most hectic operations.

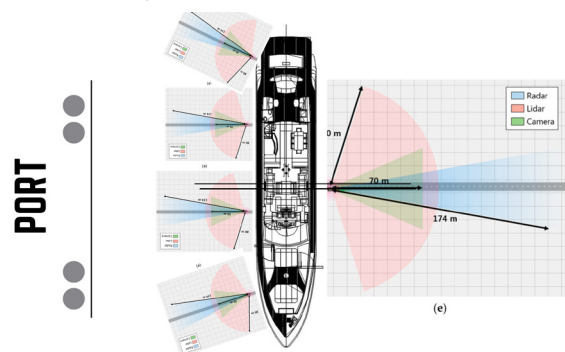


Figure 1. Representing basic sensor set used for auto-docking

### 1.1 Need for Auto-Dock

Automation is much faster than humans specifically than the human mind. Auto-Dock is needed to eliminate the human error to prevent all the berthing accidents. It



saves time and money as the ship can be berthed faster as well as leave the port faster. Due to Auto-Dock, the requirement of a lot of officers on watch is reduced and thus they can be employed at other important work on board.

## 2.2 Statistics

This table represent the ports with the highest wind speeds and waves where docking is a tedious task and auto-Dock can help in these scenarios effectively.

**How auto dock can help in areas with high winds and high waves**

PORTS	WIND SPEED	WAVE SPEED
MUMBAI PORT	20 KNOTS	5.39m
ROTTERDAM	12-16 KNOTS	3.048m
SIDI KERIR	12 KNOTS	3m
AL BASHRAH OIL TERMINAL	12 KNOTS	4m
AIN SHUKNA	10 KNOTS	2.3m

This table represents the cost analysis of the auto-dock system in comparison to the approximate cost of standard docking that is available in ports. By basic mathematics it can be assumed that the cost of retrofitting the auto-dock system will be fulfilled in 10 times the cost of docking using tugs. This system will have negligible maintenance cost.

COST ANALYSIS	
TOTAL COST OF AUTODOCK+INSTALLATION	25,000 USD
AVERAGE COST FOR DOCKING A SHIP WITH TUGBOATS	2500 USD

## 2. Main Work

### 2.1 Chipset Computer Components

This computer is the heart Auto-Dock. The logic of various components as in how they will work, perform functions and work together to provide data calculation is provided below:

**Neural Engine:** It is a processor used to perform complex calculations requires for AI and deep learning application.

**Camera Serial Interface:** It acts as an interface between a host processor and a camera. It is a protocol that connects the camera sensors to a host processor.

**Image Signaling Processor:** It consists of sets of algorithms and techniques used to enhance the quality of digital images captured by a camera. This system includes operations such as color correction, noise reduction, and image stabilization.

**Safety System:** It provides immense redundancy and overlapping and only allows the execution of codes that have been approved by the authorized signatory.

**Accelerated Processing Unit:** Autonomous machinery require extreme processing power, so rather than traditional CPUs, they utilize APUs. APU has both CPU and GPU for processing and rendering data.

### 2.2 Sensors

Sensors play a major role is making Auto-Dock successful. The sensor information is processed by the computer and it processes the data and makes necessary calculations and then provides the output which basically controls the thrusters accordingly.

The Sensors used in Auto-Dock are:

**AERIES II-** Developed by AEVA Tech. This sensor provides a lot of features such as:

- Long range
- Compact design
- LiDAR
- Camera Level Ultra Resolution
- Object detection and tracking

#### Ultrasonic Sensors:

An ultrasonic sensor is basically an electronic device which is used for measuring the distance of an object by emitting sound waves and then converts reflected sound into an electric signal.

#### Cameras:

Cameras placed around the vessel are used to provide a side view of the surroundings and will be used in docking.

#### Anemometer:

Anemometers are instruments used to measure wind speed on ships.

#### Radar

Radar is an acronym for Radio Detection and Ranging.

#### GNSS:

GNSS is an acronym for Global Navigation Satellite System

## 3. Kalman Filter

The Auto-Dock computer uses a lot of algorithms for processing data and accurately predicting the next step while the ship is docking. Kalman filter is one of the most important algorithm that takes part in sensor fusion and accurate prediction. This helps in the accurate functioning of Auto-Dock.

To predict the next state, the Kalman Filter uses a two-step process:



### 3.1 Sensor Fusion using Extended Kalman Filter

In sensor fusion, multiple sensors provide measurements of the same system, and the goal is to combine these measurements to produce a single, more accurate estimate of the system's state. The EKF is well suited for this task because it can handle non-linear models and can incorporate multiple measurements into its estimate. In the EKF, the system's state is represented by a set of variables, and the measurements from each sensor are modelled as functions of these variables. The EKF uses a linearization of these functions at each iteration to estimate the state of the system.

### 3.2 Collision Detection using Kalman Filter

The Kalman filter can be used in collision detection by modeling the movement of objects and using measurements of their positions to estimate their future states. The filter can then use these estimates to detect potential collisions by evaluating whether the estimated positions of objects intersect at some point in the future.

The filter uses equations and any deviation/error can be corrected by Gaussian variables and covariance matrices.

**This is done using 2 processes:**

- **Prediction Step:** The filter uses the motion model and the current state estimates to predict the future state of each object.
- Let's take an example, a ship moving at a constant speed of 1 knot. The filter will make an equation based on it.

$$x_{t+1} = 0x_t + 1x_t$$

$$x_{t+1} = 0x_t + \Delta t x_t$$

- Here  $x$  is the position of the vessel and  $t+1$  is the corresponding time
- These equations are written in the form of a matrix.
- Any error and noise can be corrected by Gaussian variable and a covariance matrix.
- **Update/Correction Step:** In this step, this filter updates and improves the previous step. It takes new measurements of the system which are noisy and have some deviation. This deviation in the initial estimation is called "surprise term" by calculating the surprise term and combining both these estimates in a single term, a final output estimate is generated.

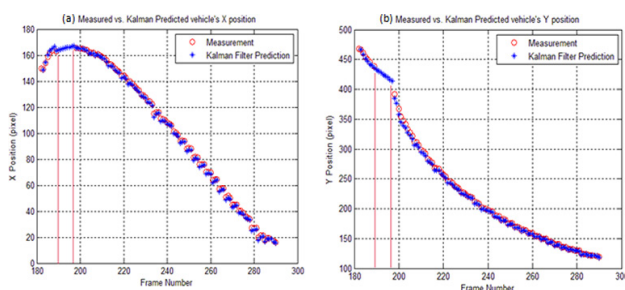
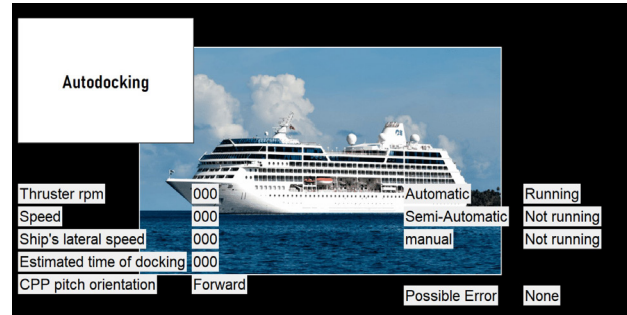


FIGURE 3. This graph shows the accuracy of the Kalman filter.

## 4. Human Machine Interface

This display is made using programming language. The display provides essential information like thruster rpm, CPP pitch below in the display orientation as shown panel. It enables the officer to input as well as change the necessary parameters like the landing speed and landing angle. The display also shows any possible error in the sensor cluster or the program.



## 5. Working of Auto-Dock

As the vessel approaches with its port or starboard side of the hull facing the port/jetty and when the ship's speed is zero knots, the officer would have to just click on the Auto-Dock button present on the display panel. Then the officer will be prompted with a pop-up window where he would have to enter all the essential parameters as provided by the pilot.

The system has three modes available which are automatic, semi-automatic and manual; even after having zero errors, sensors may fail, so to counter that, manual mode is available in the Auto-Dock system where the officer can use the standard joysticks to control the thrusters and berth the vessel. Semi-automatic mode is provided for AI assisted berthing of ship using joystick with the support of cameras and the various sensors which may assist the officer while the ship is berthing by giving them the manual speed control of the thruster while the ship controls parameters like ship's yaw and continuously monitors the environmental condition and keeps informing the officer via prompts on the display panel so as to make it an easy task when if done manually.

At first the sensors present in the sensor cluster will scan the environment and the surrounding conditions like the wind speed using Anemometer and traffic around the ship using the radar.

The LiDAR sensor (Aeries II) will create an image of the port and surroundings and send the data to the Auto-Dock computer which will then process it and make prediction for the future states using algorithms like extended Kalman filter. After the computer has done so, it will send the signal to the Digital to Analog Converter (DAC) which will start running the thruster motors accordingly. The sensors at this point will provide real-time information like imaging by the cameras, distance to the port by the ultrasonic sensors. Signals from Aeries II will be processed by the computer in real-

time which will help the Auto-Dock system navigate the vessel towards the dock, detect any obstruction in the path and predict collision. The sensors and the thrusters would keep working until the ship has reached the dock. The computer would stop the Auto-Dock as it confirms using the sensors that the ship has touched the fenders on the port. The camera like image signal resolutions by the Aeries II enables to scan every detail and it would help the computer to start and stop the docking process.

As we know, the Centre of mass of the ship shifts according to the cargo/load present on board. Due to this, the bow and stern thrusters cannot run on the same speed. If they do, then the yaw will change with respect to it's original position when the docking starts. To prevent this, the yaw data from Aeries II would be fed to the computer when the docking starts. As the yaw angle changes with respect to the original state, the computer will increase the speed of the bow or the stern thruster accordingly; so the yaw of the ship returns to it's original state.

## 6. Safety System of Auto-Dock

According to any environmental conditions or any hardware problems, the auto dock is made to be robust, so as it can take decisions according to the changes.

Some of the problems that occur during docking are as follows:

- *Ship's lateral speed faster than the speed due to the thrust of the thruster because of heavy winds or waves*

**Ans.** When the docking starts, actuators and the computer work together. The computer is preset with the speed that the vessel should maintain. It keeps taking speed information from the doppler log. Due to any abnormal environmental conditions, if the ship starts moving faster than expected, the ultrasonic sensor would detect the distance reducing faster than expected with the thrust provided by the thrusters. In such a critical situation, the vessel may tend to approach the dock in a harmful way and collide with the dock. To prevent this when the computer senses such a condition and is in auto mode, it will indicate the pitch actuators if the thrusters which will change the pitch orientation and will control the speed accordingly. This condition may happen due to strong wind currents or waves.

- *Failure in sensor system*

**Ans.** When the autodocking starts, the computer runs a scan on the hardware and the software to check for any malfunctions. If the computers finds any, it will indicate the officer with a display prompt and appropriate troubleshooting options. If any sensor fails in midway of docking process, the computer will automatically sense the sensor failure and make the vessel hold its position.

- *Assisted docking in the case of sensor failure.*



**Ans.** Looking at the above condition, if the ship is now holding its position and say a sensor cluster is not working. To counter that each sensor cluster is also provided with a backup camera which will run through a separate channel than the other sensors so in case if a sensor cluster fails, the officer can dock the ship safely using the backup and all the other cameras.

## 7. Acknowledgment

Capt. Arvind Tripathy Sujit Das

Swapneil Tamhankar

Capt. Parbodh Bande

Abhishek B. Sharma

Chetan Sharma

Dr. Manoj Kumar Kar

Pranav Bhalekar

## 8. Conclusion

This paper proposes a way to dock a vessel which is equipped with bow and stern thrusters autonomously. This eliminates the human error and also make docking accurate and faster than usual which in turn saves a lot of time and money of the crew and the company respectively.

The paper includes all the necessary components and logics which are used in the Auto-Dock system like sensors, Auto-Dock computer, algorithms etc. and also explains the way of working of the system.

During operation water is forced through the tunnel to push the ship sideways either to port or starboard as required. The unit is mostly bridge controlled and is most effective when the ship is stationary.

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## A “Falling Out” with a Crane

I boarded her at Sheerness, UK.

The ship “Anna” was a 11 year old Pure Car Carrier, with fixed decks and my first V Type Main Engine, medium speed with gearing. If memory serves me right, there was also a shaft generator. (Most Car Carriers - these days - have their alternate decks liftable, to stow ‘roll on - roll off’ cargo of different heights.

I am unable to find a photograph of the ship.

There was no stern ramp, only side ramps. The 2 Main Side Ramps, one on the port side and one on the starboard side, were slightly forward of midships which, when lowered, served as the main ramp for entry of cars into the Main Deck, with fixed internal sloping passageways, the only exception being one movable section on the main deck, to make it gas and watertight. A combination of hydraulic rams and winches / wire ropes were in place to lower and raise this ramp.

The vertical separation below the main deck - to reduce permeability in case of flooding - was through heavy sliding doors, hand winch operated and dogged down before we left port. These doors were the ones through which the cars would pass to the furthest corners when being loaded or discharged.

On all Car Carrier and Super Carriers, irrespective of where the ramps are situated, the gangway space on port and starboard side are (mostly) in a similar location as in the photograph. The Bunker pipes for Fuel Oil, Diesel Oil, Lubricating Oi, Discharge Pipes of Slop tanks, Sewage, Fresh Water replenishment pipes - are all located in this gangway space. A watertight door closes this space off from the Main Deck. Pilots also board from this point, eliminating the need for long Pilot Ladders and/or Combination Ladders. A lift (elevator) will be situated close by inside the cargo spaces that takes the Pilot directly to the Bridge. The freeboard at this gangway space will be just a metre or more.

The two images show two different types of accesses. Today, most ships have stern ramps, the lowering and raising (and securing) of which is a heart stopping period for the ship’s staff because, on the larger ships, the stern ramp can weigh anywhere between 120 to 200 tons.

**This ship also had a narrower side door**, located on the starboard side, about 3/4th or more towards aft of the ship’s length that could be raised and locked at either of two locations, to serve as the exit or entry point for



One of the Car Carriers with a Stbd side Side Ramp. Note Gangway and gangway space just aft of the Side ramp. Our main access door for cargo was very nearly similar to the above

vehicles into 2 decks well above the Main Deck. Pretty confusing?

**A long, about 3 metres wide, portable ramp** stowed on the topmost deck, starboard aft of the accommodation, weighing about 15 tons, would be **lifted with a 25 ton crane** and lowered over the side to hook on and lock on to the entry space created by the raising of the aft side door. (My purpose of these details will become apparent shortly).

This crane was also used for domestic use, to lift up stores and spares.

Unlike on later car carriers, the Accommodation spaces and other ancillary rooms were spread out over the large expanse of the top deck. This made for larger spaced cabins. But, being Japanese built and meant for Japanese personnel - her former name had been ‘Hojin Maru’ - the furnishings in the cabins were sparse and staid. Only the Captain and Chief Engineer cabins had attached bathrooms, toilets. The toilets, being unheated and poorly insulated, we had to contend with ice in the toilet room during winter voyages. I took the liberty of directly ordering as many portable space heaters as required from the Ship’s Chandler in Japan.





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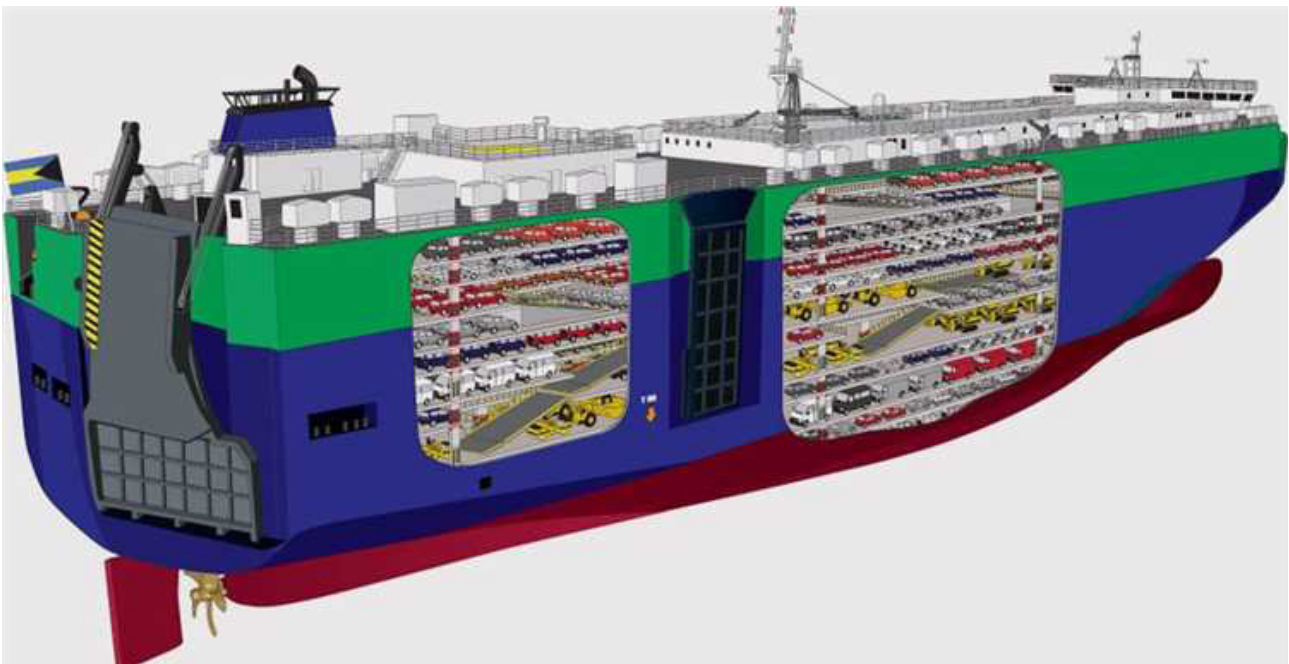
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Courtesy macgregor.com // A Typical Side Ramp



(This is just an attempt to show the interior of a typical car carrier)

For the others, there were common, open bathrooms in a large, communal, room that had showers and a steam heated 2 metre square x 1.5 metres high cement, tiled, tub for them to have a communal soak. They were supposed to have a shower and then jump in together. Good bonding.

After Barber's took over the full management of the ship and after our crew joined, some makeshift stalls were provided to save the modesty of the Indian sailor. The problem came when Chief Officers or Second

Engineers, or others below those ranks brought their families.

More modern, or later, car carriers had half their top deck area taken up as cargo space for cars. In consequence, as all cabins were on the top deck, they were smaller.

The Chief Engineer was going home in a hurry for a family emergency. The unwritten protocol during those kinds of takeovers is to assist in freeing him of his duties as quickly as possible.

That said, a few documents of vital importance need to be verified before signing, which can sometimes get to be an issue.

The quantities remaining on board (ROBs) of Fuel Oils, Diesel Oil, Lubricating oils is one such. The incoming Chief Engineer has to assure himself that the quantities listed in the Handing Over Documents are actually on board, as he will have to provide explanations - and maybe be penalised - if any shortfalls are found at a later date.

I found there was no need of that, as the ullages and ultimate calculations had all been done by the Second Engineer, who was a protégé of mine, who I trusted. I only compared the calculated figures to the Engine Room Log Book figures and, finding the discrepancies to be minimal, signed the ROB document.

The (comparitively) young outgoing Chief Engineer was pretty distraught about his family. I told him not to worry, patted him on the shoulder and told him to forget about the ship, sent him on his way to get home to look after his family.

He left within one hour of my boarding the vessel.

I was not too worried about the Engine Room, as the Second Engineer was a very capable hand.

The Captain was on his first tenure as Master and had just joined the ship, with me.

The Chief Mate was an experienced one, just within touching distance of his promotion.

I had sailed with all of them at various times when they were in their junior ranks.

All in all, first impressions were that it was going to be a smooth tenure. And so it proved to be, except for some serious, unsolved problems that had been carried over for several years. Later, on hearing of them, I took the bait and made it my mission.

### ***The Aft Crane:***

It was around 4 pm, on the same day that I had joined the ship. Discharging of cars - and some loading - was going on. I was in the Engine Room, making myself familiar with various items.

I became aware and 'heard' of one of the long standing, chronic problems, when a massive '**thud**' reverberated across the entire ship, coming from the top deck.

Running up on deck, I saw that the crane wire had parted just after the aft ramp had been removed from its locked position at one of the locations for cargo discharge. After lowering the ramp on to the wharf, the crew had rigged four wire ropes for the final lift to the vessel.

As the crane lifted the ramp from the wharf, the wire had parted.

The practice was to have four wire ropes to lift the ramp from the ship, lower it on the wharf, swinging it and placing it 90 degrees to the ship, change to two wire ropes for the near corner, lift one end till it reached the

locking arrangement on the side door, lock the ramp in place - it would now be angled down to the wharf - and take away the crane hook, after which cargo operations could start.

The whole operation is reversed for stowing the ramp back on board after cargo work.

All had gone well when the crew had unhooked the ramp from the side door after completion of cargo and laid it on the wharf, for changing over to four wire ropes and had started lifting, with long guide ropes to position the ramp and prevent any swing. Normally, the ramp would be lifted and simultaneously swung around so that it comes parallel to the shipside, lifted, brought on board, stowed abeam and secured.

But the crane wire had parted, the ramp fell, luckily when it was only about a metre from the wharf. The crane jib, which was practically just above horizontal, came crashing down on the railings and on deck.

There were no injuries, only a bit of cement had come off the wharf, the ramp was bent a little.

The crane jib had suffered the maximum damage and was sharply bent at the middle.

The Deck crew and staff did not seem very perturbed about it.

When I asked them if any had been injured, they replied that they were all fine. Their further comment jolted me; they said they were always careful of themselves and others when using this crane, as it is accepted that the jib will fall every 6 to 8 months or so.

The Chief Mate added that he had personally inspected the wires just a few days back and all was fine. Because of the history of this luffing wire parting and subsequent jib damage, every inch of the crane wire was inspected every month and the wires greased.

It seemed to be a problem even when the Japanese were operating the ship. The crane wire would part at intervals of around 8 months, seemingly for the last 11 years, from the time she had come out of the shipyard.

For the moment, a shore crane with a good outreach and capable of lifting more than 15 tons was called. The crane jib, which was bent with nearly half the length protruding over the side, was first hooked up, picked up, slewed inboard and laid on the deck, as it could not be lowered on to its crutches. The damaged ramp was picked up and landed on board.

The Hong Kong Office, when informed, took it in their stride knowing the history of the crane damage. They asked us to wait till Japan for shore workshop repairs, which was more than a month away. Because of this, the starboard aft side ramp could no longer be used for cargo operations.

I do not know why, but I asked the Chief Mate to cover and tape the broken ends of the wire, to prevent corrosion by seawater or sea air.



I had just taken over as Chief Engineer a few hours back. Luckily, no one thought of me as a harbinger of bad luck due to the past history of the crane. But, it bugged me that a long standing problem had been literally banged into my lap, like a ton of bricks, even though everyone accepted it and expected it to happen.

It also challenged me. Looking back, I realise that I had an unconventional, stubborn, streak within me that made me go off the beaten path to explore possibilities that others have not traversed.

So far, everybody had taken it for granted that the wire would part and the crane would fall, which set a series of activities rolling - a specification for repairs, a requisition for new wire ropes, a "Purchase Order" made by the Superintendent and a quotation received, the designated workshop appears on board, cuts out the damaged section, welds on a pre-fabricated section, welds are tested, a load test is carried out in the presence of a Surveyor and a certificate issued. (Since the same workshop was being used, they had the full drawing of the crane jib in their possession).

The root cause of the problem was never in focus.

To my mind, that this serious problem had not been studied to its roots, is indicative of inter departmental and official apathy. The Deck Department, under whom, technically, the crane and its maintenance was under, had done their bit in examining the wire ropes, drums, sheaves regularly. The Engine Department thought that the parting of the wire rope was the realm of the Chief Mate and hence had not given much thought to it. This apathy had led to this problem remaining unsolved for years. Had a fatality occurred, everybody, the Office included, would have jumped, all to no avail. Later, I had some rather harsh words to say to the Superintendent of the vessel on the crane matter as well as other problems that I encountered.

I was determined to break this cycle.

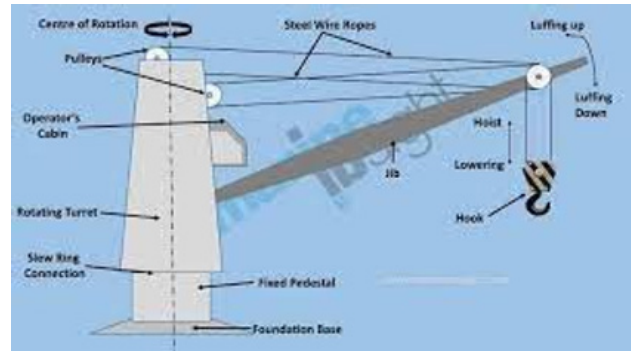
(I had been working on cranes since my Fifth Engineer days and on Derricks and Stulkens since my Second Engineer days. So, it was, more or less, a challenge to me).

Over the course of the next two weeks, whenever I found the time, I went through the records of the past two years, since Barber's had taken over. Everyone had done their best - they had inspected the wires frequently, no twists found, nothing amiss, they had checked the sheaves for any burrs, none found. They had checked to see if the right wire was being used; all wires, both luffing and hoisting wires, were as per manufacturer's specifications. This was the fourth time that the crane jib had been damaged since Barber's took over, due to the wire parting. The Japanese, when handing over to Barber's had cautioned them about the crane.

Only one (Japanese) report had mentioned that the split had occurred over, approximately, the same length of the wire twice in a row. I could discern this much from sketches that the Japanese had meticulously made in

their reports. This report sent question marks flooding into me.

A couple of weeks later, after attending to comparatively smaller problems in the Engine Room and in the Car Decks, I once again found myself sitting on the damaged jib and picturing the whole scenario, when the ship was at sea.



Courtesy marineinsight.com // Note the placement of the luffing sheaves and hoisting sheaves, nearly similar to what we had



Courtesy picclub.or.jp // A damaged and bent jib // The bend of this jib is, comparatively, much less than the damage to our jib.

Slowly, I visualised each step of each operation, including the smaller nuances like limit switches etc. and could find nothing wrong. Then I went into the crane housing and started working my way up. The hoisting and luffing drums seemed good. The wire guides were in good condition. The limit switches were all operational.

The next day, I went still further up and came to the trap door leading to the head or crown of the crane, where all the sheaves are located and to inspect the sheaves. Climbing up the ladder, I undogged the watertight trap door and climbed up to the small platform next to the sheaves.

I was now standing on the topmost part of the crane and had a grand view of the entire ship. Looking aft, I could see the wake of the ship for miles. Looking forward, I was practically on the same horizontal eye line as the Engine Room funnel, with all the various exhaust gas uptakes' goose necks pointing aft, towards me.

The ship was at full speed (about 20 knots) and the clear smoke was flowing past both sides of me and

above my shoulders and into my face - I could feel the current and the heat and see the shimmering mirage of the flow of exhaust gases. Because of the exhaust, I could not stand there for even a minute and was forced to come down, sit and breathe in some fresh air.

I am, by nature, a very slow thinker and have no 'Eureka' moments. But the thought processes slowly started evolving.

Reading some of the manuals, I listed some of the constituents of the flue gases that are emanated.

- Oxides of Nitrogen (NO<sub>x</sub>)
- Oxides of Sulphur (SO<sub>x</sub>)
- Carbon Dioxide (CO<sub>2</sub>)
- Carbon Monoxide (CO)
- Hydrocarbons (HC)

(Above list is from the Engine Manual).

Unburnt Hydrocarbons will dirty the place, as soot particles. Sparks can be seen at night.

Carbon monoxide can cause death if inhaled.

Carbon Dioxide can disorient you and, finally, cause death through lack of oxygen.

Oxides of Sulphur - **creates acidification.**

Here I had it.

The exhaust or flue gases passing over the crane head was passing over the wires at the sheaves as well. **Rain water (rain being a regular feature at sea) and sulphur compounds form Sulphuric Acid, which gets soaked up by the wires, causes internal corrosion, weakens the core of the wire over a period of time. In this weakened state, the wire can part whether on load or on an empty hook.**

**Records showed that only the luffing wire parted each time, as in this case.**

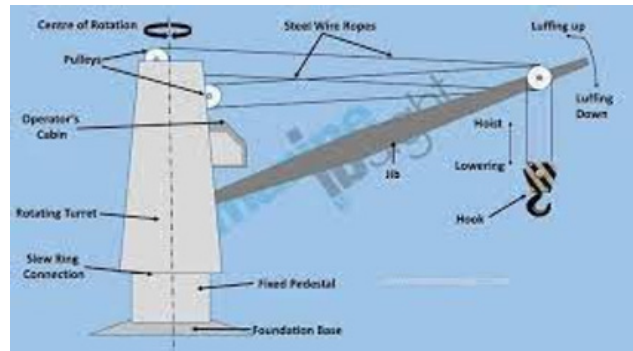
The question, then, begs the asking "Why is only the luffing wire affected and not the hoisting wire"?

Because the luffing sheaves were directly in line with the flue gases, whereas the hoisting sheaves were located about nearly a metre below the luffing sheaves and did not get the full impact of the gases.

We cut pieces of the wire at the broken section and sent it by courier (to the agent) for **lab analysis** in Japan. **Acidic corrosion** from acids of sulphur was confirmed at a much later date, after we reached Japan and completed repairs.

(On querying the ship's Superintendent on the Analysis Report of the wire, I found he had not sanctioned the cost for lab analysis and, hence, the Japanese Agent had not forwarded the wire sample to the lab. A few harsh words emanated and the analysis finally done).

Solution? At the next dry dock, raise all exhaust gas outlets in the funnel by a metre or so. Dry Dock Specifications were made. (Dry Dock was more than a



(Image repeated once again to clarify positions of Luffing Sheaves and Hoisting Sheaves)



year away). (Cannot really call it a 'gooseneck' as the bend of the stack was less than 60 degrees)

Temporary fix? After every use, cover the entire crane head with custom made thick canvas having eyelets and tie it down to minimise rain and smoke touching the wires. Allow the wires to sag down before vessel sails out.

The crane and ramp were repaired in Japan. The crane was load tested and certified. The ramp was tested statically and certified. I served on this ship for about 8 months and returned for a second tenure after 3 months. No wire rope failure occurred.

A few years later, I was told that there had been no more accidents on the crane.

The ship 'Anna' proved to be full of surprises and a test of ingenuity and logistics, which I hope to elaborate later.

Written by:-

**A. Ranganathan**



The author is a 1966 ~ 1970 Batch DMET. Sailed for 38 years, 28 of them as Chief Engineer. Worked on Self Unloaders, Car Carriers, Super Carriers, Bulk Carriers, Multi Purpose Carriers, General Cargo vessels - all Dry Cargo ones. Last ship was in 2008.

Then a 6 year stint as a Consultant.



## Joining Ship



I thought that nothing could be worse than the summer in Bombay during May. Madras (Chennai's name in those days) took offense and roasted me in June as I went to the agent's office to complete the ship-joining formalities.

The agent dropped me at the gangway of the ship and left. I looked up and the gangway seemed to be set at 90° to the vertical to test my stamina and strength. The ship looked huge. (Later, I was C/E in ships six to eight times larger). I huffed and puffed and dragged my heavy luggage (uniforms, boiler suits, warm clothing, books) and managed to reach the peak.

My heart was beating fast not only from exertion but also from anxiety. All the stories of how the tough second engineers make fifth engineers wish they were not born, were playing endlessly in my mind. I was praying to all the gods to grant me a kind-hearted second engineer (graduate, if possible, but I should not be too greedy while asking gods for favors) and entered the accommodation from the main deck.

The sudden A/C cool air felt wonderful. As I looked at the deserted alleyways, I found a door saying 'Engine Room'. I opened it and saw a man in a white boiler suit, white cap and sporting a walrus mustache. He was putting on his shoes. 'Excuse me, sir, where can I find the second engineer?' I asked him timidly. He looked me up and down. 'I am R.Khanna, second engineer, what do you want?'

He had grapes in his right hand. My mouth ran dry. I did not know whether to shake hands (he had grapes) or smile and say hello (he might take offense) and I did nothing. So, I stood there gulping. 'Don't tell me you are the new fifth engineer?' he exclaimed. 'Yes, sir, I am,' I replied in relief. 'My God, what specimens the company sends! Okay, keep your luggage in the cabin, give your

documents to the purser and report to the engine room in...' he looked at his watch, 'in fifteen minutes.' I said, 'Yes, sir,' and came out and was lost.

There was no one around; all the alleyways were deserted. I did not know where my cabin was and whom to ask. Then in the duty mess, I found one very drunk steward. Luckily he was our deck steward. So, he guided me to my cabin, I changed into the boiler suit, went on the bridge, gave my documents to the purser, one Mr. Mallik. It is surprising how I remember the faces and names of everyone on my first ship but have difficulty in recollecting people of my last few ships.

Then I rushed to the engine room. The engine room was like an oven. Within seconds, I was lost. I caught hold of an oilman and asked him to take me to the second engineer. He walked me through what looked like an intricate maze of pipes, machinery and into the cool air-conditioned control room. There, second engineer, third and fourth engineers, and electrical officers were having tea and gossiping. I shook hands with them and introduced myself.

They looked curiously at me as if I were a rare specimen. I made myself tea and sat at the table. I will use abbreviations C/E, 2/E, 3/E, 4/E (engineers), E/O (electrical officer), R/O (radio officer) to make writing less tedious.

There are many similarities between a new daughter-in-law and a brand-new 5/E joining a ship. The difference being, the new daughter-in-law will have one mother-in-law but a new 5/E will have more than two. The 2/E is the main mother-in-law, directly in charge of disciplining and educating (read harassing and tormenting) 5/Es. C/E is the chief mother-in-law to whom 2/E reports about commissions and omissions of 5/Es. If 5/E is lucky, masters can be benevolent observers like

fathers-in-law or else they can join the mother-in-law brigade, hell-bent on disciplining the new breed.

Then 3/E, 4/E, and E/O take on the mantle of the husband's sisters. This breed can be very sadistic and derive vicarious pleasure in the discomfort of 5/Es; they keep filling the mother-in-law's ears about the misdeeds and mischief of poor 5/Es. In case of a new daughter-in-law, the husband's sisters, especially if unmarried, can be a real pain in the neck and elsewhere, they keep harping on their brother, 'You have changed a lot after marriage, you used to be so affectionate,' thus forcing the poor man to take them to the movies and shopping, all the while neglecting his poor wife.

Then the engine crew takes the role of servant maids and, cooks, who act as spies and whisper in the ears of mothers inlaw about the negligence, laziness, or carelessness of 5/E, like how he didn't clean the filters, though he told you that he had done it, how he was goofing instead of tracing pipelines and how he was taking naps behind the switchboards. In daughter-in-law's parlance, it is the equivalent of being slow in bringing in the laundry when it rained, not watching over boiling milk, and being careless while peeling potatoes so that one fourth kg curry resulted from a kg of potatoes.

But the similarities end here. A 5/E has the advantage that he is not landed for life with the monsters-in-law. If he weathers the storm or is patient, either they or he will sign off. Once he is eventually accepted, he will be promoted to the in-law status; whereas a new daughter-in-law will either be trampled into submission or fight like Lady Lara Croft or Rani Laxmi Bai to assert her rights (as in the movie *Seeta aur Geeta*, and other such movies).

Then 2/E asked me the question I was dreading. 'Are you a graduate?'

I took a deep breath and said, 'Yes, sir, BE (Mech-Marine),' and waited with bated breath.

'See how lucky he is? When I joined, I was the only graduate and what a tough time I had! Now except C/E and Pal, all of us are graduates,' he told the others.

I almost jumped in joy and would have broken into a dance had I been alone.

'Who is Pal?' I asked 4/E in a low voice.

'He is the other 5/E. C/E is ex-Indian Navy,' he replied, elaborating on 2/E's remark.

'Now you go to your cabin and relax. Report at 6 p.m. From today you are on night watch,' 2/E told me.

I thanked him and left. I was determined not to get lost in the jungle of machines, pipelines and equipment and to reach my cabin without seeking help from anyone. I kept going in circles, reaching the same place every time and one oiler who was working at one place asked me rather tactlessly if I was lost and needed help. I tactfully replied that I was checking some machines and managed to avoid him in the next round and ended at the boiler platform.

Finally, I managed to extricate myself from the tentacles and reached my cabin. I unlocked the door,

entered and felt like I was in heaven. I loved my room. It was to be my home for the next twenty months. It was small and compact, with a bed, a sofa, a writing table, a few chairs, and an attached bathroom. I was whistling as I unpacked; this was the luxury that I had lacked. Ours is a large family, four brothers and one sister, and though we were not living in cramped quarters, I never had a room of my own.

Though I lived in hostels, the common bathrooms and waiting for turns was tiresome. Here I had a room completely to myself and I enjoyed the luxurious feeling. The best feature (which was absent in all my other ships, including when I was C/E) was the calling bell placed next to the bed, which summoned the steward. When I got up, I had to just stretch my hand and press it and the steward would come with a tea tray in ten minutes. That was a luxury I never had on any other ship.

I unpacked, got a few hours' sleep and went to the engine room thirty minutes before I was due. I made allowance for my getting lost in the maze. I went to ECR (engine control room); no one was there. Pal and the Oilers were nowhere to be seen. I came out of ECR and was looking around when a blur of movement caught my eye. I looked up and my jaw dropped as I saw a figure sliding along the railings of the staircase.

He was holding the rails and with both feet in the air he slid: zip... zip... zip... he stood in front of me in a few seconds with a big smile. 'Hi, I am Pal, 5/E,' he extended his hand.

'Hi, I am Girisam, new 5/E. If you slipped, you could have broken a few bones. Tell me, why were you sliding?' I shook his hand and asked him, puzzled.

He laughed. 'While going up, you have to climb, there is no option, but we can save energy and time while coming down. I will teach you. Next week, you will also be doing same,' he said as we entered ECR.

I looked at him curiously. He had tight, slanted eyes and was short and athletic. He had a typically British, clipped accent. It was so incongruous. He smiled. 'I know what you want to ask though you are hesitating to do so. My Chinese eyes—my mother was from Burma and dad was from Calcutta,' he told me.

'Was?' I asked hesitantly.

'I am an orphan. They are no more,' he said.

'I am sorry,' I said. We were silent for a few minutes. I didn't know how to break the awkward silence. 'Apart from sliding down stairs like Spider-man, what are the other skills you have?' I asked him.

He asked me to lift my hands. I did. With his forefinger, he pressed a spot in my ribs, and I was paralyzed. I could not move a finger and I could not even scream. He removed his finger, and as I rubbed the spot, I asked him in amazement what it was.

'Karate. I am a black belt. With a light chop on your neck, I can make you unconscious,' he told me casually.

I said, 'Wow,' impressed. After a few minutes of apprising me about the ship, he left. After twenty months,



when I went home, I promptly joined a taekwondo school and attended school regularly, religiously for a month, until one day the instructor made us carry a partner on our shoulders for a full round of the ground. First, I had to sit on the shoulders of my partner, a thin, lanky Muslim teenager, with my legs wrapped around his neck. All the time he was carrying me, I was scared he would stumble and I would fall flat and break my nose and a few bones.

That boy was cursing me, why I was so fat (I was not, in those days I was slim) and why I couldn't be a few kilos lighter. I thanked him and God when he safely deposited me after an anxious ride. Then I carried him. I found his manner irritating and insulting. He was acting as if he was a king and I was his horse. He was enjoying the ride and was urging me to gallop and overtake others. So, that was the end of my taekwondo ambitions.

I am an enthusiastic starter but a poor finisher. I start something with gusto, pursue it with vigor and enthusiasm for some time, until the enthusiasm wanes. I tried to fool myself and others that it was due to my sailing; had I been employed ashore, I would have pursued them to the end.

My wife gets mad with the piling up of semi-used, unused, and intended-to-be-used-in-the-future products. To make matters worse, though my daughters inherited their mother's beauty, they refused to download her enthusiasm, capacity for hard work, or her active lifestyle. Instead, they downloaded the latest, upgraded version of my laziness, procrastination, and 'five minutes more sleep' attitudes.

Their software has additional packages of no remorse, feelings of guilt, or other nonsensical sentiments. My younger daughter is like a fly on a hot, sweaty summer day. Whatever you do, you can never discourage a fly from scrubbing its feet on your sweaty forehead, eyebrows, upper lip or make it stop its irritating droning sound.

My daughter will never rest until you accede to whatever her current demand is. She will drive her mother almost to tears (Dad is sailing most of the time, advising wife not to give in to her blackmail tactics). Once she gets what she demanded, her interest might not last even a few hours. An Easy Slim tea packet gathers dust after she consumes one teabag and loses interest. Then she hounded me till we bought a guitar after browsing through several shops. She attended one class at Mellowing Musical Institute and lost interest in the thing.

Since then, the ungainly, hideous guitar developed a nasty habit of lodging itself where you want to sit or lie down. If you want to sit on the sofa, it is there; you want to lie down on the settee, and it rushes there before you. When you want to sleep on the bed, some instinct makes you look at the bed before you crash on it, and there it is, lying sideways, occupying the entire length and breadth of bed.

I managed to convince one of my elder daughter's friends to take it. He promptly returned it after a few days, perhaps, after his neighbors complained to the police that sounds of women being murdered and tortured were

emanating from his flat, mistaking the awful ruckus this sadist instrument was making, for those.

After its return, it has learned a few new tricks. It keeps quiet for the whole day; when it is past midnight, it incites my younger daughter to strum it. It enjoys it when my wife, her brother, and my daughters have a big fight. My younger daughter was enthusiastic about karate. For one day she attended, I paid for full three months, tennis (one week), Veena (this lasted surprisingly longer), and several others. When reminded about the colossal amount of money wasted, she tells us to keep a record of all expenditure; and that she would repay it with interest after she is employed. But my wife somehow managed to stand firm and say no to her demands for a puppy. She managed to divert her with a newborn chicken (on a rental basis) or fish or tortoise or rabbit.

My wife, the poor lady, has to deal with not one, but three specimens. My daughters have a fixed belief that one needs to sleep till ten minutes before actual time to leave the house. Every day there is a mad rush, panic to find towels, hair clips, hair dryer, shampoo, black leggings or green top, earrings, and finally ID cards. After the kids leave, the house resembles a battlefield. Clothes are flung everywhere, all items helter-skelter. It would take my wife a full two hours to get things back to normal.

Be that as it may, after Pal left, I decided to get the hang of the engine room. I wanted to reach ECR from any point without getting lost. That was my project for the night. Duty oilman was an old Muslim man, who lectured me about character, conduct, and the evils of alcohol.

After roaming for a few hours in the engine room, I got the hang of the layout. When I was having tea at 9 p.m, the phone rang. I answered. 'Good evening, ECR,' I said.

'This is Chief Engineer. Who is this?'

Sir, I am Girisam, new 5/E,' I said politely.

'Girisam, see and tell me the position of the telegraph,' C/E asked me.

I thought telegraph was a file or something like a telegram. I looked around and told him that I could not see telegraph.

C/E blew his top. 'What? You can't see the telegraph? Are you blind? Ask the oilman to call me,' he yelled and put down the phone.

I called the oilman and asked him to call C/E. He called and told C/E that the telegraph was in Finished with Engine position, put down the phone and told me that C/E wanted me to go to his cabin. I was sweating as I knocked on his door after a few minutes.

Written by:

**A.K. Girisam**

*After graduation, chose a career in merchant navy. He sailed for more than four decades in ships, (three decades as a chief engineer). He published a book, 'Whispers of the waves', narrating his experiences in a lighter vein. He featured in Ric Bratton's "This week in America".*  
<https://youtu.be/nSjzdHyj01Y>



## Obituary

### **Chunduri Venkata Veerabhadra Rao (F 1959)**

**C**hunduri Venkata Veerabhadra Rao (fondly known as CV or Veeru to many) passed away on 21.02.2024. He was 65 years old - an untimely silencing of a wise man.

CV, a Marine Engineer, apprenticed at the Visakhapatnam Port Trust and began his career at Mackinnon Mackenzie as a Junior Engineer. His knowledge, skill, discipline and passion for his work quickly propelled him up the ranks to Chief Engineer.

CV joined Tolani Shipping Company Limited (TSCL) in 1989 as a Chief Engineer. After 5 years at sea, he transitioned ashore as Superintendent Engineer, rising to head the Technical Department at TSCL in a short span. During his tenure, he led shipping operations as well as numerous initiatives to remain in lockstep with the ever-changing technical, commercial and regulatory landscape. He devoted himself unconditionally, tirelessly and with the highest level of integrity to the health and the growth of the organisation. 'Not possible' were not words in his dictionary. His inputs were instrumental in setting



up the academic infrastructure of the Marine Engineering Programme at Tolani Maritime Institute. Acknowledging his invaluable contribution to the various organisations of the Tolani

Group, CV was invited to join the Board of TSCL, as Director (Technical). He commanded respect of all on the Board for his wise counsel and solving problems with ingenuity and tact.

Apart from his association with the Tolani Group, he was an insightful voice on the various committees and organisations he participated in.

CV was a humble individual, who delivered without expecting a pat on the back. His concise and accurate opinion, couched in simple words devoid of jargon, was always the last word. He strived for his family, Tolani, the shipping industry and overall wellbeing of society.

We will miss him dearly. Instead of prayers for his sake, CV would prefer unsolicited acts of kindness that promote the wellbeing of society. We request your support to honour this wish.





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