



eMARINA

The quarterly newsletter of
The Hong Kong Joint Branch of The Royal Institution of Naval Architects
and The Institute of Marine Engineering, Science and Technology,
and The Hong Kong Institute of Marine Technology
皇家造船師學會暨輪機工程及海事科技學會香港聯合分會
及香港海事科技學會季刊

Vol. 4 Oct-Dec 2023

HKJB & HKIMT Activities

Technical Visits and PAAMES Conference in Japan

HKIMT, HKJB and HKIE-MMNC jointly organized a technical visit and the PAAMES Conference from 16 to 21 October 2023. This was our first overseas technical visit after the international travel restriction imposed by the Covid-19 pandemic for the past three years. A total of 11 members participated in this technical visit.

Day 1, 16 October 2023

Technical Visit to Yanmar Power Technology Co Ltd (YPT), Amagasaki Factory

The Yanmar, Amagasaki Factory was established in 1936. It was the first factory in the world where commercially viable small diesel engines were built. As technological advancement continued, the factory manufactured larger and larger diesel engines for the industry. Today, Yanmar focus their attention on the large-scale production of marine propulsion and auxiliary engines. A smaller part of their capacity continued to produce general purpose application diesel engines on land and gas turbines. In an effort to reduce the environmental impact of diesel engines, Yanmar also developed Dual Fuel engines and the selective catalytic reduction system for their engines.



Team photo at Yanmar Amagasaki Factory

The factory tour enabled members to learn the Efficient Production System enhanced by “Kaizen’s” 5S processes and 3T practices. The word “Kaizen 改善” refers to the Japanese philosophy of the unrelentless pursuit for improvements in which 5S is to organise work in five stages represented by five different Japanese words, namely “SEIRI” - Sort, “SEITON” – Set in order, “SEISO” - Shine, “SEIKETSU” - Standardise and “SHITSUKE” – Self Discipline. The goal of 5S is to improve order and cleanliness. 3T in Japanese are “TIE” – Where to put, “TIE HIN” – What to put and “TIE RIYO” – How much to put. It is a method to improve efficiency and precision during the manufacturing processes to reduce wastage. The Yanmar Technical Training School was also in Amagasaki. It provides trainings for the qualifications to maintenance and performance monitoring of Yanmar engines for ship owners, operators and ship builders around the world.

Members were fascinated to find the World’s First Commercial Diesel Engine displayed in the Yanmar Amagasaki Factory. It was built by the German company MAN at their Augsburg factory. The engine was number 21 in the crosshead-type series. This engine was built by MAN Corporation in 1899 for commercial use using the patented by Dr. Rudolf Diesel. After it was sold, the engine took various roles in the industry. It



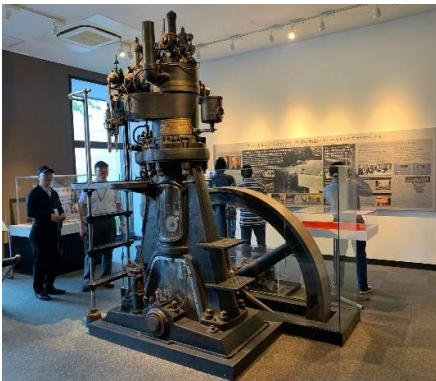
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served the industry for 38 years and returned back to MAN Corporation for display after its retirement. It was then presented to Yanmar's founder, Magoichi Yamaoka in 1957, for his successes in miniaturizing the diesel engine and his efforts to promote the use of the diesel technology.



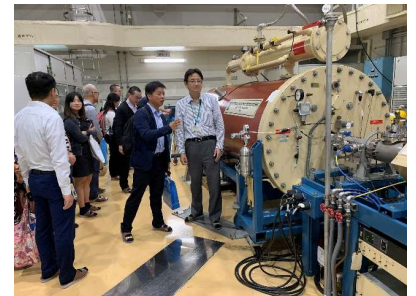
MAN Diesel Engine built in 1899

The visit had strengthened our understandings in the making and operation of diesel engines that we used in the trade. HKIMT and HKJB were very grateful to the management of Yanmar Power Technology in arranging this visit. We would like to express our whole-hearted gratitude to Ichiro Fuwa san, Yutaka Koyama san, Diasuke Takahashi san and all the staff in Yanmar for hosting this factory visit.

Technical Visit to Kobe University, Fukae Campus

With the kind arrangement from Professor Akihisa Abe, the Dean of the Graduate School of Maritime Sciences, Kobe University and his colleagues Prof Kenji Sasa and Dr Haruo Mimura, we were able to visit the Kobe University Fukae Campus in the afternoon of 16 October 2023.

Fukae Campus is where the Graduate School of Maritime Science is located. It has a long history of providing maritime education in Japan. The establishment is a great learning environment to provide the graduates to acquire the essential principles in the maritime industry. The campus has many experimental training and research facilities that include Ship Model Basin, Ship Navigation Simulator, Hyper-Cryogenic Laboratory and Accelerator and Particle Beam for materials analysis. A training ship "Kaijin Maru" is also there for practical trainings on board ship.



Visit to Accelerator and Particle Beam



Team photo with Kobe University training ship "Kaijin Maru"

The University Library for the Maritime Sciences houses a great varieties and number of old and new books about the sea and the ships for the graduates to read and do their researches. The volumes of books and articles acquired and accumulated over the years is a great asset of the campus! A large number of historical artifacts related to ships are also on display in The University Maritime Museum. The Graduate School is an educational and research institute aiming to produce professionals who can contribute to the society to sustain the future developments of the maritime industry.

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We were very grateful to Professor Akihisa Abe and his colleagues in introducing the Fukae Campus of Kobe University and explained to us the various facilities for the training of their maritime professionals.

Day 2, 17 October 2023

Technical Visit to Kawasaki Heavy Industry Ltd, Kobe

Upon our arrival to the Kawasaki Heavy Industries (KHI) Kobe Headquarters, we were welcome by the KHI Executive Deputy General Manager Mr. Kenichi Masamoto, P.E. Jp. He introduced the current developments in his company by three technical presentations: (i) Electric Hybrid Propulsion System by Mr. Shingo Maekawa; (ii) Jetfoil by Mr. Tomoki Kuwabara and Mr. K. Kitabayashi and (iii) Hydrogen Technology by Mr. Masanori Higashida.



Team photo at KHI Kobe Head Office

Hydrogen is one of the best sources of clean energy. It has no carbon footprint when used as an energy source and can be produced from various substances. It can be stored, transported and used in a wide range of appliances for power generation, transportation and other industrial uses. Expectations are high that hydrogen will play an important part in addressing climate change and providing a stable supply of energy.

To boost the hydrogen production, Kawasaki had developed and commercialized the first hydrogen liquefaction system for the industry by cooling it to -253 degree Celsius and reducing its volume to 1/800. Based on their past experiences in the operation of liquefied hydrogen storage tanks for rockets, Kawasaki had developed a 2,500m³ storage tank with a vacuum insulation structure. Gas turbines that cater for the rapid hydrogen combustion characteristic had also been developed to allow the use of 100% hydrogen.

In the afternoon, we were guided by KHI to visit Kobe Maritime Museum. Under the theme of “the journey of Kobe and its port”, the museum conveyed the development of the Port of Kobe and its role and its contributions to the better use of maritime resources for the future. In addition to the exhibition of the history of Kobe port, the structure and role of the port and a diorama model of vessels were displayed.

Annexed to the Kobe Maritime Museum was the Kawasaki Good Times World. It was a corporate museum of KHI that has worked hand in hand with the port of Kobe since its opening. It had nine zones which were very popular with the visitors: (i) Founders Area, (ii) History Area, (iii) Theater, (iv) Motorcycle Gallery, (v) Land Zone, (vi) Sea Zone, (vii) Air Zone, (viii) Robots and (ix) Kawasaki Good Times World Techno-Lab.

HKIMT, HKJB and HKIE-MMNC would like to express our appreciation to Kawasaki Heavy Industry for hosting this visit to our members, especially the support from Mr. Hiromi Hashimoto for planning the details of the itineraries, the transportation arrangements, the meal and tickets for visiting Kawasaki Good Times. We were particularly grateful to Mr. Hiromi Hashimoto who came all the way from Tokyo to Osaka/Kobe to meet us.



Day 3, 18 October 2023

PAAMES International Standing Committee Meeting and Welcome Reception at Kyoto



The 10th PAAMES International Standing Committee and Members

HKIMT, HKIE-MMNC and IMarEST NEAD participants arrived Kyoto and some of them attended Pan Asian Association of Maritime Engineering Societies (PAAMES) International Standing Committee Meeting. HKIMT Chairman Mr. Simon Chen, HKIE-MMNC Past Chairman Ir Alan Tsang and IMarEST NEAD Representative Mr. Ernest Chan attended the meeting.

The purpose of the meeting was to confirm the guidelines for the selection of the best paper awards in Advanced Maritime Engineering Conference (AMEC) 2023: Taking into account the work of New S-Tech Conference (predecessor of AMEC) and AMEC, the Best Paper Awards were selected from papers presented by students and young engineers/researchers in the Conference.

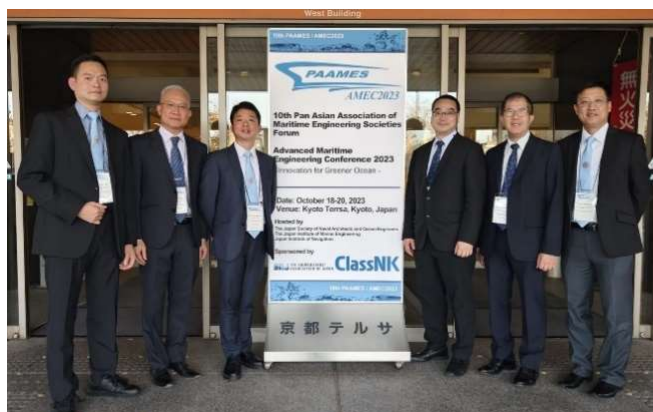
Another key agenda was to determine the venue and the hosting societies for the 11th PAAMES/AMEC 2025. The meeting had decided that Singapore will be the host in 2025!

A welcome reception was held after the International Standing Committee. Most of the conference participants attended the reception and stayed late in the evening to acquaint with old and new friends.

Day 4 – 5, 19 – 20 October 2023

PAAMES Advanced Maritime Engineering Conference

The 10th PAAMES Forum and AMEC was held on 19 and 20 October 2023 at Terrsa, Kyoto. The keynote speech in PAAMES Forum was made by Mr. Jun Kohno, Deputy Director-General for Engineering Affairs,



HKIMT/HKIE-MMNC/IMarEST NEAD members attending PAAMES AMEC 2023 at Kyoto Terrsa



Presenting HKIMT memento plaque to Professor Masahiko Fujikubo (3rd Left) and JASNAOE President Kunifumi Hashimoto (2nd Left)



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Maritime Bureau, Ministry of Land, Infrastructure, Transport and Tourism of Japan. In his speech, he summarized the energy transition in international shipping including measures for GHG net-zero emission likes “levy for fossil fuels” and “rewards to zero-emission fuel”. Asian countries, which build 90% of ships in the world, were expected to contribute to carbon neutrality in international shipping by developing new safety standards for zero emission ships. Shipyards, engine manufacturer and other suppliers were encouraged to work together for develop technologies to achieve zero emissions.

The theme in AMEC 2023 was “Innovation for Greener Ocean”. There were 104 papers submitted from different countries and region including Japan, Korea, Singapore, China, Taiwan and Hong Kong. Among the 104 papers, 21 papers are on the Computer Application in Maritime Engineering, 18 papers are on Research, Development and Technology for Zero Emission Ships and 8 papers are on the Technology Development and Maintenance of Offshore Wind Power Generation Facilities. IMO 2023 Strategy on the reduction of GHG emissions from ships adopted by MEPC 80 was one of the key discussion topics in PAAMES and AMEC.

One of our members, Ir Leslie Lee, presented a paper in this conference to share our experience in response to the IMO 2023 Strategy. His presentation was on “Achieving Continual Reduction of Greenhouse Gas emission in the Maritime Industry through a Case Study of diesel-electric vessel in Hong Kong”.



Ir. Leslie Lee was presenting a paper about a case study with topic of Achieving Continual Reduction of Greenhouse Gas emission in the Maritime Industry at AMEC 2023

Taking into account the work of New S-Tech Conference (predecessor of AMEC) and AMEC, the Best paper Awards were selected from papers presented by students and young engineers/researchers in principle. Best papers were nominated by AMEC Session Chairs and selected by the PAAMES International Programing Committee. The best three papers selected by the Committee were as followed:

Session 3-5: Other Topics in Maritime Engineering III

A Methodology for the Estimation of Energy Storage Demand for Floating Offshore Wind Farms in Taiwan

**Ting-Li Lin, Shun-Han Yang*



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Session 1-4: Computer Application in Maritime Engineering IV

Hull Form Design Optimization using ROM with Machine Learning and Active Subspace Methods

**Wontae Hwang, Jaewon Kim, Febriani Rohma Dhana, Jong-Chun Park, Seongim Choi*

Session 2-1: New Technology of Maritime Industry, including Shipboard Machinery

A parametric study on the blade geometry for a Coanda propeller

**Jun-Hee Lee, Kwnag-Jun Paik, Hwi-Su Kim, Jaehyoung Jun, Sung-Mok Ahn*

The awards were presented by Professor Masahiko Fujikubo, Chair of PAAMES Local Organizing Committee at the Closing Ceremony & Banquet in the evening on 20 October 2023.

Day 6, 21 October 2023

Excursion – A Journey into the Heart of Japanese Culture

The Executive Committee of the 10th PAAMES organized an excursion after the meetings, participants were able to experience the scenic beauty and culture of Kyoto. In this one-day trip, we visited the Byodoin Temple. It is the place that thousand years ago the Japanese rulers tried to embody the idea of “Buddhist Pure Land” in its construction. Fushimi Inari Taisha Shrine in Kyoto is one of many such shrines in Japan to honour Inari - Shinto god of rice. Over one thousand gates were built in the construction of this Shrine. And Nijo-jo Castle is the only castle in Japan that was built without the intention of being used for battle.

In addition to visiting the tourist attractions in Kyoto, participants had the opportunity to have a thorough understand of Kyoto. Historically, it was the center of power and culture in Japan. Throughout the tour, local Japanese guide from this prefecture were around to help and explain to us in experiencing and understanding the Japanese culture. The delicious combo bento lunch (included different Japanese cuisine such as sashimi, hot pot, soba, green tea etc.) was the most mouthwatering meal in this visit.

(Reported by Leslie Lee and Simon Chen)



Team photo at Kyoto Byodoin Temple

2023 HKIMT and HKJB Annual Ball at Kowloon Shangri-La Hotel

The HKIMT and HKJB Annual Ball this year was held on 10 November 2023 at the Kowloon Shangri-La Hotel. The last Annual Ball was held on 22 November 2019! Similar events had been suspended for the last three years due to the onset of the COVID-19 pandemic. We all missed our annual ball!

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VIP Table: Mr. Wellington Koo, Ir Dr. Hon. Lo Wai Kwok, SBS, MH, JP, Mr. and Mrs. Jagmeet Singh Makkar, Capt. Lothair Lam, Ms. Miriam Lau, GBS, JP, Ms. Petty Leung, Ir Fanny Ting, Mr. Gwynne Lewis, Mr. Andrew Wong, Mr. and Mrs. Roy Kaushik, Ir and Mrs. Simon Chen, Mr. David Koo, Ir Louis Szeto. Ir and Mrs. Francis Law

Since its launch in early September, the response from the industry was overwhelming! Nearly 30 parties making generous support to the event and a total of 318 guests from the local industry and overseas filled up 32 tables. In particular, we were honoured to have the CEO of IMarEST Headquarters and its Asia Pacific Regional Manager from Singapore also joining us in this important event.

After our MC Ms. Annie Wan and Ir Leslie Lee invited the 18 VIPs to the head table, the Chairman of HKJB, Mr. Kaushik Roy, Chairman of HKIMT Ir Simon Chen and CEO of IMarEST, Mr. Gwynne Lewis were invited to speak to the audience. The key note speech was delivered by the Guest of Honour - Chairman of Hong Kong

Shipowners Association (HKSOA) Ltd., Mr. Wellington Koo before the ball commenced.

Mr. Koo reiterate the commitment of the HKSOA and their collaboration at the local, regional and international levels among industry and government counterparts to foster and cultivate the next generation of maritime professionals. Mr. Koo also emphasized the importance of embracing sustainability in the industry to strive for zero-emission and their efforts in maintaining the Port of Hong Kong. The full text of his opening speech is excerpted below for reference.

“Ladies and Gentlemen, Esteemed Colleagues,

It is a distinct honor to address you tonight at the Gala Dinner of The Hong Kong Institute of Marine Technology, and The Hong Kong Joint Branch of The Royal Institution of Naval Architects & The Institute of Marine Engineering, Science & Technology. As the Chairman of the Hong Kong Shipowners Association, I stand here as a representative of a sector that is as robust as the vessels we command and as versatile as the seas we navigate.

Let's first reflect on the astonishing facts that underscore the significance of our sector. Hong Kong proudly boasts the 4th largest Shipping Registry globally, with a remarkable 127 million gross registered tons. We oversee 2,158 internationally trading ships, in addition to 180 local vessels ranging from small cargo ships and tankers to ferries and tugs. Collectively, our HKSOA members manage and own 2,500+ vessels with a total deadweight of 223 million gross registered tons.



Key Note Speech by Mr. Wellington Koo

Hong Kong's port, the beating heart of our maritime activity, maintained its position as the 9th largest port in the world, handling an impressive throughput of 17 million TEUs. When we add the contributions of the Greater Bay Area ports, the total annual throughput reaches a staggering 71 million TEUs. That's enough containers to stack end-to-end from here to the moon, and halfway back, I believe. Not that I am suggesting we try to do it and see if I am correct!

Our industry isn't merely about size. It's about the breadth and depth of services we offer. From banking to insurance, ship management to freight forwarding, along with burgeoning fields like carbon trading and fintech services - we are indeed a one-stop-shop for maritime needs.

The HKSOA is committed to fostering collaboration at local, regional, and international levels. Through our partnerships with educational institutions, we can help cultivate the next generation of maritime professionals. We can work closely with the government to develop policies that promote sustainable practices and foster innovation. We can also cooperate with our counterparts in Mainland China, sharing best practices, fostering technological exchange, and building a stronger, more resilient maritime industry that benefits not just Hong Kong, but the entire region.

Internationally, we can amplify our influence by engaging with various global maritime organizations, contributing to policymaking, and setting industry standards. It's not just about sailing our own ship; it's about helping to navigate the entire fleet towards safer, cleaner, and more efficient operations.

Turning to sustainability, the Chief Executive has recently emphasized the importance of smart, green, and sustainable development in logistics. This call to action is one we must heed. Yet, the path towards sustainability presents unique challenges. As shipowners, we are grappling with essential decisions about adopting low and zero-emission fuels to meet the new greenhouse gas goals. It is a bit like trying to predict the winner of the next Cup Race – will it be green methanol, LNG, green ammonia, or hydrogen? It is anybody's guess!

Our local shipping industry can play a pivotal role in this green transition. The conversion of local vessels, such as ferries and tugs, to zero or near zero-emission power systems is not only feasible but a necessary step forward. With the support of the Hong Kong government, we might soon see our harbor dominated by green ships.

However, we still face some stormy seas. Nitrous Oxide and particulate emissions from larger ships are significant contributors to Hong Kong's poor air quality. We need to adopt practices like 'cold ironing' - allowing ships to switch to shore power while at berth. Just think of it as a spa day for our ships, letting them rest and recharge with cleaner energy.

As we chart our course forward, we must focus on enhancing our policy development, fostering the use of green fuels, striving for zero-emission local shipping, and promoting the use of cold ironing. These are not just targets, but commitments to our industry, our city, and our planet.

In the words of the great Greek philosopher, Heraclitus, "No man ever steps in the same river twice, for it's not the same river and he's not the same man." Our industry is that river, always changing, always moving, and it is our responsibility to adapt and grow with it.

In conclusion, let us hold our course steady, adjust our sails as needed, and above all, enjoy the journey. As we navigate the challenging yet exciting waters of change, let's remember that our collective strength lies in our resilience, our adaptability, and our shared commitment to a sustainable future.

Let's make waves, together. Our future is not just green, it's also blue!

Thank you for your attention, and here's to a prosperous voyage ahead!"



J Motion Dance Academy



Willy and his band

This year, we had invited Willy and J Motion Dance Academy as our stage performers for the night. Guests were motivated and amazed by the powerful voice of Willy and the great music by his band. The floor was packed all night long! The graceful and colourful LED

Wings from the dancers of the J Motion Dance Academy was a stunning performance. Performing arts and modern technologies were integrated and exploited to the fullness extent by the dancers for the best visual and sensual effects and were marvel by all! Samba and Bollywood dances followed. Guests were invited to participate during their performances. Occasional roaring laughs and thundering cheers were heard throughout the night. Towards the end, our complementary singer, Mr. Nelson Yu wrapped up the night with his melancholy voice singing his favourite songs.



Packed Dancing Floor



Organising Team Chairman Mr. Nelson Yu on stage



Applause to 2023 Annual Ball Organising Committee

The climax of the event was undoubtedly the lucky draw! The generous sponsors had enabled the acquisition of great lucky draw prizes like cash vouchers, fancy food and beverage gifts, travel tickets and hi-tech gadgets. Many walked away with armful of gifts and a heavy head! No doubt, everyone had an enjoyable, relaxing and pleasant evening. Who cares what tomorrow may bring! Life is enjoyable after all! All guests are yearning for another of this happy event next year!

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(Reported by Catherine Fok)

HKJB & HKIMT Coming Activities

Date	Event
16 January 2024	HKJB AGM
23 January 2024	Career talk on Long Term Development of Sea Going Career in HK
12 March 2024	HKJB Committee Meeting

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