MPA ACADEMY SINGAPORE

HORIZON

MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09

01
EDITOR'S NOTE

STAYING RESILIENT AND STEADFAST IN THE NEW NORMAL

The fight against the COVID-19 pandemic continues with many countries imposing lockdowns in recent months to curb new waves of infection. New variants have emerged and are reported to be more transmissible and resulting in higher fatalities. The number of cases worldwide hit about 128 million in Mar 2021 with around 2.8 million deaths from the virus. While vaccines have been developed, it will take time for enough vaccines to be produced and to inoculate the millions of people around the world. Even before the pandemic is over, global supply chains have been put under further pressure with the recent blockage of the Suez Canal that will have repercussions on maritime trade. Countries will have to stay resilient and steadfast to tackle the new challenges ahead.

In *Feature*, we highlight how MPA has been pressing ahead with capacity building for the global maritime community. The need for capacity building has become more imperative as the maritime industry grapples with the challenges resulting from the COVID-19 pandemic. MPA through its training arm, the MPA Academy (MPAA), has been conducting flagship programmes for overseas port and maritime officials to hone their leadership skills. The Academy also offers technical training under the Singapore-IMO Third Country Training Programme to enhance the capacity of IMO Member States to implement international maritime regulations and standards, including supporting the training needs of the IMO as a Council member.

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09

During this challenging period, we re-connected with Ms Rebecca Pskowski, who is the second recipient of the World Maritime University (WMU)-Koji Sekimizu PhD Fellowship on Maritime Governance. Ms Pskowski, who is an Attorney-Advisor in the US Coast Guard, talks about her interest in taking up the Fellowship, her research area and how COVID-19 has impacted her PhD programme as well as the US shipping industry. We also caught up with one of our MPA Academy alumni, Ms Liya Dominic, who attended the 9th Maritime Public Leaders Programme in 2019. Ms Dominic, who is Head of Human Resources Services at the IMO, shares about the insights gained from attending the programme and how the IMO is adapting to the changes resulting from the ongoing pandemic.

In this issue, we have a contribution from Mr Eddie Ng, Vice President (Group Cargo Solutions & Platform Development), PSA International, and Mr Oh Bee Lock, Managing Director, Port & Logistics Navigators Pte Ltd and MPAA Adjunct Fellow, on "From new to normal – digital platform is the inevitable norm in container logistics". The article looks at how COVID-19 has further upturned attitudes and accelerated behaviour change towards digitised logistics as new metrics for resilience and seamless integration are added to baseline of supply chains. End-to-end container flows, with stakeholders in physical logistics, government compliance and financing digitally connected on platforms, have become the inevitable norm to meet flexible and seamless physical to information flows. The article talks about the 3 key features of digital platforms - CONNECTIVITY, COLLABORATION AND CONTROL.

To ensure that the technical training provided to MPA officers meets international standards, MPA obtained accreditation for its training programme for marine surveyors from Institute of Marine Engineering, Science and Technology (IMarEST) in 2021. Gaining accreditation means that the MPA's Marine Surveyor training programme meets the knowledge, understanding and skills required for professional registration. It is a stamp of excellence that is internationally recognised and involved a rigorous review process, analysing the technical content taught and the processes put in place to ensure effective delivery of the programme. One of the areas of excellence identified by IMarEST was that the marine surveyor training programme offers many opportunities to work and gain experience in the wider global maritime sector. Another strength is that it supports marine surveyors to pursue personal/career development opportunities and academic qualifications.

In *Highlights*, we interviewed Dr Parry Oei, Adviser (Hydrography), who was MPA Chief Hydrographer from 2004 to 2019. He talks about the changes in hydrography over the years resulting from technological advances, his contributions at regional/international hydrographic fora, and what it has taken to make the Hydrographic Division into the world-class operation that it is today. And to gain some insights into the day-to-day work of hydrographic surveying, we spoke to Mr Wong Tuck Meng and Mr Edwyn Ang, both from the Hydrographic Survey Department. They share how hydrographic survey work has evolved with the introduction of new equipment/technology and the training of new officers.

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09

As countries around the world continue the fight against the virus, let's stay resilient and steadfast to overcome the new challenges ahead.

We hope that you will enjoy reading this issue of HORIZON. If you have any comments or suggestions for future issues, please send us an email at MPA_Academy@mpa.gov.sg.

We wish you safe and well.

Tan Suan Jow
Dean, MPA Academy

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09

02
FEATURE

ENHANCING CAPACITY BUILDING FOR THE GLOBAL MARITIME COMMUNITY

BY RAHITA ELIAS

The MPA, through the MPA Academy, is actively helping the global maritime community to expand its skills and capabilities. The need for capacity building has gained further urgency as the industry is grappling with the challenges resulting from the COVID-19 pandemic.

Capacity building is the process by which people and organisations obtain, retain, retrain and reinforce the skills, knowledge, and tools needed to perform their jobs and roles more effectively and efficiently. Building up one's capacity has become all the more important in the current climate, given that the COVID-19 pandemic shows little signs of flagging any time soon.

This uncertain and challenging period means that the world, and the maritime industry in particular, are sailing through uncharted waters. Expanding our skill sets and capabilities will equip us to endure and overcome the prevailing and incoming buffeting waves. It also allows us to take advantage of possible opportunities with the changing trends and consumption patterns.

The Maritime and Port Authority of Singapore (MPA) is committed to capacity building for both the local and international maritime industry through its training arm, the MPA Academy. The Academy organises a wide range of courses for MPA officers to enhance their skills and knowledge. It also conducts flagship leadership training programmes for overseas port and maritime officials and offers technical training to fellow IMO member States, and in so doing supports the training needs of the International Maritime Organization (IMO) as a Council member.

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09

The Academy's capacity building efforts cover two broad areas – global leadership development and technical training.

MPA Academy Flagship Programmes – Leadership Training

In terms of honing leadership and management skills, MPA Academy has three flagship programmes. All three offer a multi-faceted learning experience through classroom learning, site visits, case studies and group discussions as well as networking opportunities. Participants have found the programmes to be both relevant and applicable to their jobs. They also found the networking contacts and friendships gained through the programmes to be very beneficial. The flagship programmes are:

Participants of the 3rd AMLP held in 2019

- The Advanced Maritime Leaders' Programme (AMLP) is the academy's apex programme designed for senior port and maritime officials at the Chief Executive and Deputy Chief Executive level. Conducted biennially, it seeks to further hone the leadership skills of senior maritime leaders and build new capacity to transform their organisations amidst an increasingly complex and globalised environment.

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09

Participants of the 3rd AMLP held in 2019

"I hope for my future maritime colleagues around the world that MPA will continue this programme. The tie-up with the Singapore Management University is also very fruitful for the whole programme. Leadership and maritime knowledge are the perfect combination for this programme and help to develop the maritime administrations around the world – and at the same time the administrations get to know each other better."

- Ms Charlotte Ahrendt Steen, Deputy Director General, Danish Maritime Authority (3rd AMLP 2019)

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09

- The Maritime Public Leaders' Programme (MPLP) is a broad-based executive programme for senior officials in maritime administrations who are at least Director-level or equivalent. It covers a wide spectrum of topics ranging from port planning and management, shipping economics and maritime law to public leadership and governance.

9th MPLP held in 2019

"This is a really important programme for people in the maritime administration. It gives a holistic grasp of present and future events that are and will be important to the maritime Industry."

- Capt Jorge Parga, Deputy Director, Directorate General of the Maritime Territory and Merchant Marine, Chile (9th MPLP, 2019)

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09

- The Port Management Programme (PMP) is specially designed for port masters, harbour masters and middle management personnel from maritime administrations or port authorities. Participants will have the opportunity to gain insights into Singapore's maritime operations and broad planning strategies through interactive sessions and site visits.

6th PMP held in 2019

"Singapore's port management programme was just superb, quite educational, well arranged to international standards and so relevant to my area of specialisation and truly international."

- Mr Tevedzerai Mangombe, Lake Navigation Controller, Ministry of Transport and Infrastructural Development Zimbabwe (6th PMP, 2019)

6th PMP held in 2019

To date, MPA Academy's flagship programmes have benefitted more than 350 participants from close to 90 countries. Despite the current challenges posed by the pandemic, which has restricted international travel and large gatherings, MPA Academy remains firmly committed to delivering its programmes through virtual sessions to groom more maritime leaders to drive progress in their respective domains. We will continue with our capacity building efforts.

Singapore-IMO TCTP (Third Country Training Programme) - Technical Training

"Singapore has been supporting IMO's technical cooperation programme since 1998 through the Third Country Training Programme (TCTP) framework, which was one of the very first partnership agreements setting out an exemplary scheme promoting joint efforts urged by the IMO Convention. In this regard, IMO is grateful for the in-kind contribution and support that Singapore has provided for more than two decades." - Mr Xiaojie Zhang, Director, Technical Co-operation Division, IMO

Technical training is offered under the Singapore-IMO Third Country Training Programme (TCTP) memorandum of understanding (MOU), which was first signed in 1998. Through the TCTP, Singapore seeks to enhance IMO Member States' capacity to implement international maritime regulations and standards.

Regional IMO Workshop on the International Safety Management (ISM) Code - Tanzania, 2019

Over the years, the programme has been extended and enhanced. In 2000, the MOU was extended indefinitely. Through the years, the geographical scope of the Singapore-IMO TCTP was expanded and it now covers regions such as Africa, Asia, Caribbean, East Europe, Middle East, Pacific Islands and South America.

Workshop on MARPOL Annex V and Port Reception Facilities - Philippines, 2019

Since the TCTP was launched, it has conducted training and development programmes for over 2,100 participants from more than 90 Member States.

Enhanced training and technical co-operation package with IMO

To commemorate the 70th anniversary of the adoption of the IMO Convention and the 20th anniversary of the Singapore-IMO TCTP MOU, Singapore launched an Enhanced Technical Cooperation and Training Package for the IMO and its Member States in April 2018. The package comprises fellowships, scholarships and training courses valued at up to USD 5 million (about SGD 6.9 million) over a period of five years. The enhanced package reaffirms Singapore's commitment to support capacity building in the international maritime community.

The enhancements are three-fold. First, Singapore is increasing the scale and scope of the technical assistance under the Singapore-IMO TCTP MOU. It will hold additional training courses, and open them to more participants from developing Member States. In addition, the MPA will work with IMO to conduct IMO Member State Audit Scheme (IMSAS) training courses to assist fellow Member States in preparing for their IMSAS audits.

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09

Training on IMO Member State Audit Scheme in Singapore, 2019

Second, Singapore has expanded its co-operation with the World Maritime University (WMU), providing new fellowships and scholarships for maritime officials from IMO Member States studying at the WMU and maritime institutes in Singapore.

Third, Singapore is working with the IMO to enhance global maritime leadership training, and to provide new fellowships for maritime officials from Member States to attend MPA Academy's various flagship programmes in Singapore.

Paying back

Both MPA's flagship and technical assistance programmes reflect Singapore's commitment to the global maritime fraternity. When Singapore had just gained independence in 1965, it received a great deal of assistance from other countries. Now, the country is keen to do its part and help those who require help just as Singapore did in those early years.

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09

03
INTERVIEW

ADVANCING SAFETY AND COMPLIANCE IN SHIPPING

BY CHRIS CHUA

November 2020 saw Ms Rebecca Pskowski from the United States becoming the second recipient of the World Maritime University (WMU)-Koji Sekimizu PhD Fellowship on Maritime Governance. Launched in June 2019, the Fellowship is spearheaded by the WMU and supported by the Maritime and Port Authority of Singapore (MPA) and Dr Koji Sekimizu – former IMO Secretary-General.

Ms Rebecca Pskowski
Attorney-Advisor,
U.S. Coast Guard

The Fellowship is part of Singapore's enhanced technical co-operation and training package for the International Maritime Organization (IMO) and its Member States. Aimed at nurturing the next generation of skilled maritime professionals, the PhD Fellowship seeks to equip participants to contribute to the international shipping community, and facilitate research on the impact of the IMO and relevant United Nations (UN) agencies in maritime governance over the past six decades.

Ms Pskowski is currently an Attorney-Advisor in the U.S. Coast Guard, having spent 17 years in the shipping industry. She has extensive shipboard experience aboard sailing passenger vessels, as well as shoreside experience as a maritime attorney and a judicial law clerk with the U.S. Department of Labor, where she has heard several maritime cases. This issue, we spoke

with Ms Pskowski about her area of research and discovered how COVID-19 has impacted her PhD programme and the U.S. maritime sector.

| What made you pursue a career in the maritime industry?

After completing my undergraduate degree in English Literature, I decided to work on board passenger sailing vessels thanks to my childhood interest in sailing. I sailed full-time for eight years before enrolling in Law School, and have since been a maritime attorney.

In my current position at the U.S. Coast Guard Office of the Judge Advocate General, I conduct research and draft commandant decisions, advising the Chief Judge on legal appeal in two categories: merchant mariner suspension and revocation proceedings, and civil penalties.

| Tell us more about the Fellowship and why it interests you.

The Fellowship is aimed at developing a new area of study in international maritime governance, specifically by looking at the IMO's development and impact over its 60-year operational history. I pursued this Fellowship because of my interest in the regulation of shipping. Given my experience in this area in the United States, the Fellowship offers an unparalleled opportunity to learn about the global context of maritime regulation.

| What is your research area and why is it important for the maritime sector?

My focus will be on the regulatory function of the IMO, specifically on the techniques it uses to keep its 50 treaties up to date. I hope to find out how the texts of the treaties can be used to strengthen the enforcement and compliance measures for vessels sailing under all the world's flags. While the IMO has been very successful in developing broadly-accepted treaty instruments governing maritime safety and marine pollution, it has little role in enforcement and must rely on member states to execute their treaty obligations. I hope that my research will provide insight into improving safety and environmental compliance in the shipping sector.

| What do you hope to gain from the Fellowship?

The Fellowship will allow me to learn new social science research skills to complement my legal training and expand my professional network. The insights I gain at the WMU will be invaluable as I continue my career as a maritime regulatory attorney. With globalisation, technological developments and the need to address climate change are expected to bring about changes to maritime regulation. The research skills and international exposure I will gain

will equip me to advise on those changes. I am also interested in teaching maritime law and policy in the United States, and the global perspective I obtain here will be a great asset for that work.

| How has COVID-19 impacted your PhD programme?

COVID-19 delayed the start of my PhD programme by three months due to the challenges of international travel. In addition, it has led to all my courses being conducted online. The IMO's current remote meeting practices may impact my research and data collection. I plan to spend part of my second year of study as a resident intern at the IMO in London, but given the current climate of uncertainty, it is impossible to know when or if that will happen.

| How has COVID-19 impacted the U.S. shipping industry?

The coronavirus has placed a huge strain on the broader shipping industry in the United States, with crew change problems, cancelled sailings and orders, and obstacles to inspection, training and certifications. COVID-19 has had a devastating impact on small passenger operations. Many vessels were laid up for the entire 2020 season and it is unclear when and how they can restart operations.

| What has the U.S. government done to minimise disruption from COVID-19 to the maritime sector?

The U.S. Department of Transportation Maritime Administration (MARAD) has coordinated with the U.S. Coast Guard and the Centers for Disease Control and Prevention (CDC) to assist vessel and port

operators in keeping maritime commerce moving in America. For merchant mariner credentialing, special provisions have been made to prevent credentials from expiring while testing or evaluation services are unavailable, and similar contingency plans have been put in place for vessel inspections.

| What are your thoughts on decarbonisation in the maritime industry?

Decarbonisation is the defining challenge of our century. One major challenge for the maritime sector in moving forward with decarbonisation is the long life of a modern merchant vessel. While there are many promising technologies in development, ship owners may be understandably reluctant to invest in new vessels employing those technologies if they are uncertain or fear that new regulations or technological advances may leave them with stranded assets. One important role that the IMO can play is to provide regulatory certainty for vessel owners, by clearly broadcasting its plans for emissions regulations going forward. While negotiations towards establishing these regulations may be painful, I believe all of the IMO's member states need to recognise that acting swiftly and decisively is in the best interests of the planet, the global population and the shipping industry.

| How do you think COVID-19 has impacted the drive for digitalisation of the maritime industry?

COVID-19 has sped up the pre-existing drive for digitalisation in this sector. Due to the difficulty of domestic and international travel, digital and virtual solutions that might have been years away from implementation have been adopted virtually overnight. One example is the IMO's shift to an online meeting format. Looking ahead, I expect interesting developments in remote ship surveys and digital maritime inspections technology, and anticipate that this will gain greater acceptance in the industry.

| Moving forward, how do you think the maritime sector can further unlock digitalisation's full potential to drive greater resilience in global supply chains?

Hopefully, digitalisation in the maritime sector will accelerate and streamline the global supply chain, while enhancing safety, security and environmental protection. I am confident that secure and reliable digitalisation of bills of lading, certificates and inspections can reduce the regulatory burdens on ship and port officers, while improving the performance of the maritime industry.

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09

04
INTERVIEW

CONVERSATION WITH AN MPA ACADEMY ALUMNA

BY RAHITA ELIAS

Ms Dominic talks about her experiences at the 9th MPLP, where she gained insights to a wide range of issues that affect the maritime industry. She also discusses the Programme's relevance in the wake of the COVID-19 pandemic, and how the IMO is adapting to the changes resulting from the spread of the virus.

Ms Liya Dominic
Head of Human Resources Services,
International Maritime Organization

I head the International Maritime Organization's (IMO) Human Resources Services, which provides this United Nations body with the ability to meet organisational needs by managing and supporting its workforce. Our Service is responsible for several key areas, ranging from strategic functions, such as development of policies and programmes and staff engagement, to managing the internal justice system, including dispute resolution, as well as operational functions such as recruitment and selection, performance management, and health and wellbeing services, amongst others.

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09

In 2019, I attended the 9th Maritime Public Leaders' Programme (MPLP), organised by the Maritime and Port Authority of Singapore (MPA). I wanted to take part in the programme because its curriculum seemed interesting and holistic, offering a good balance of management perspectives and operational aspects in an international context.

MPLP – an insightful programme

The Programme lived up to my expectations. One particularly insightful session highlighted how crucial it is for a Maritime Administration to take a strategic and innovative approach in order to adapt to and deal with challenges and difficulties in the field. The transformation of the Port of Singapore from a regional Malayan distribution centre for cargo traffic to becoming the principle centre for shipping activities and international cargo serves as an inspiration and remarkable reference for other Maritime Administrations. The role of the vision and direction provided by leadership, whether governmental or organisational, in the development of effective policies, and nurturing the desired outcomes and performance is particularly relevant.

The MPLP created a setting where participants from diverse backgrounds and Maritime Administrations from different countries could gather. This gave us the opportunity to interact, learn, and share knowledge with colleagues from around the world. Being able to hear first-hand from other Maritime Administrations their achievements, plans, and challenges gives one a sense of unity in purpose.

Balanced programme

The Programme was both engaging and relevant. The course tutors were all expert professionals in their field, while the course itself had a good balance of classroom sessions and onsite visits, including observing a chemical spill exercise at sea. We got the opportunity to watch the port traffic controllers in action, guiding ships into and out of the port – that was riveting!

All in all, I was impressed with the meticulous attention to detail, and care in organising the programme. I would recommend the programme without any hesitation.

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09

MPLP addresses vital issues

I think that the MPLP has become all the more relevant since the COVID-19 pandemic and the ensuing lockdown. Some of the course topics, such as crisis communication, strategic planning, and digitalisation, have become particularly useful and pertinent, in adapting to the new normal. Having these issues raised during the Programme seems almost prescient now.

Impact of COVID-19

Since the onset of the COVID-19 pandemic, we have been focusing on ensuring business continuity, and smooth operations in all areas of management as well as safeguarding the health and well-being of our staff members. As Management, we have to provide reassurance and maintain relevant and timely communication, liaising with the United Nations and, since we are based in London, the host country Government.

We had been an organisation that functioned fully on-premises. Overnight, we had to switch to remote work operations like many other businesses and organisations around the world. As a result, team management and dynamics have changed, resulting in the need to find ways to engage and involve our team remotely, and to continue achieving work objectives and completing projects.

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09

Also as a regulatory body, whose programme of work is mainly conducted through meetings involving Member Delegations, all scheduled meetings had to be rescheduled to a virtual format.

In the subsequent months, our efforts were focussed on drawing up plans to re-open the building, and to operate a revised virtual meeting schedule. With respect to the IMO's mandate concerning the COVID-19 pandemic, the key focus and efforts have been on addressing the issues of seafarers' welfare, crew changes, and introducing appropriate measures to support the global supply chain.

Rethink required

Indeed, the COVID-19 crisis has called for a rethink on how to maximise efficiencies in all areas of work. The financial and technological aspects have especially been impacted given that budgets have become more constrained, and resources more limited. We have also sharpened our focus on developing policies that will help guide the organisation through transformation and change, increasing automation and digitalisation of work functions, while tackling the challenges of maintaining and enhancing cyber security. Events, such as "The Future of Shipping" webinars, which was jointly hosted by IMO and the MPA , reflect the themes that are in focus globally.

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09

05
CONTRIBUTION

FROM NEW TO NORMAL – DIGITAL PLATFORM IS THE INEVITABLE NORM IN CONTAINER LOGISTICS

BY EDDIE NG, VICE PRESIDENT (GROUP CARGO SOLUTIONS & PLATFORM DEVELOPMENT), PSA INTERNATIONAL AND OH BEE LOCK, MANAGING DIRECTOR OF PORTS & LOGISTICS NAVIGATORS PTE LTD, AND MPAA ADJUNCT FELLOW

Before the pandemic, ports and carriers were busy coping with mega ships, consolidation, IMO2020, and emerging effects of digitization. There was sufficient impetus to leverage digital technologies – experimenting with cloud, IOT devices, automation, analytics, platforms, blockchain, AI and more, to transform businesses and customer experiences.

Mr. Eddie Ng
Vice President
(Group Cargo Solutions & Platform Development),
PSA International

Mr. Oh Bee Lock
Managing Director of
Ports & Logistics Navigators
Pte Ltd, and MPAA
Adjunct Fellow

COVID-19 further upturned attitudes and accelerated behavior change towards digitized logistics as new metrics for resilience and seamless integration are added to baseline of supply chains. The "new" norm became "normal" as we rapidly moved into an environment of ubiquitous digital fluency amongst individuals, companies, and governments – underpinning transformations in B2B, B2G and B2F[1] communities.

[1] "Business to Finance"

End-to-end container flows, with stakeholders in physical logistics, government compliance and financing digitally connected on platforms, becomes the inevitable norm to meet flexible and seamless physical to information flows. Stakeholders now interact and operate with a level of velocity and efficiency which was not possible previously, innovating and co-creating solutions to:

- Enable resilient and agile supply chains with better synchronized movements and faster speed to-market.
- Facilitate green and sustainable logistics
- Maximize productivities and ROI of investments

CONNECTIVITY, COLLABORATION AND CONTROL are 3 features of digital platforms.

CONNECTIVITY

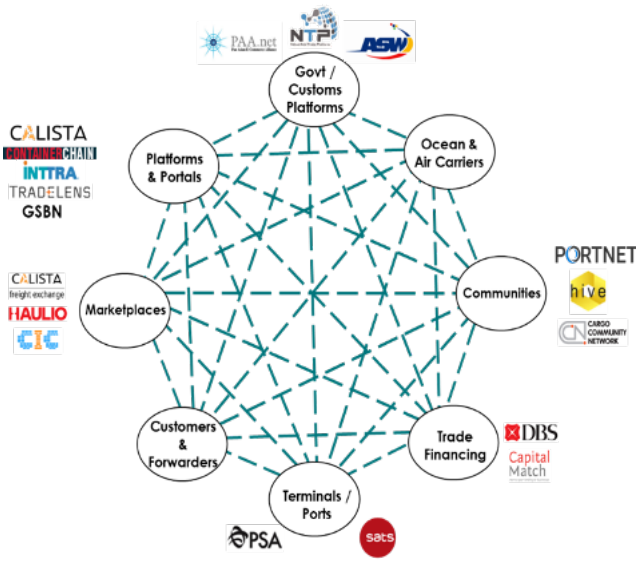
A digital platform provides a trusted and unified source of events and transaction logs for stakeholders to align logistics goals and jointly optimise performances for execution. Beyond e-booking portals and workflow managers, new-gen platforms (e.g. TRADELENS, GSBN, CAMELOne, CALISTA) allow stakeholders to extend their business reach without physical footprint expansion. With digitized data and transactions, these platforms can replicate many-to-many exchanges of work flows across a broad network of B2B, B2G and B2F domains.

Digital platforms in turn enable new combinations of physical connectivity modes. Logistics planners typically utilize a limited range of transport modes and avoid re-handling to assure performance reliability and cost efficiency. Digitized logistics engenders higher confidence in visibility, seamless regulatory clearance and inter-operability across multi-modal transport. New transport routes such as Southern Transport Corridor demonstrated the potential of such connectivity with a 50% reduction in transit time compared with the traditional Yangtze River route[2].

Graphics by the Straits Times
July 4, 2018

[2] A transport corridor utilising a new logistics network of railways and shipping provided a more direct route between South East Asia and Western China (and onward to Central Asia and Europe via the overland Chongqing-Xinjiang-Europe intermodal route).

COLLABORATION



Example of supply chain collaboration

A core goal of logistics is effective synchronization of multiple inter-connected moving parts. Platform participation offers the foundation to ameliorate this, and further efforts to value-capture data visibility could create collaboration opportunities for stakeholders to share resources and better aggregate demand to optimize resource allocation. For example, CALISTA is integrated with PORTNET and Haulio[3], with an extended value chain from the port to distribution hubs. CALISTA is also connected directly with carriers, INTTRA, CargoSmart and Infor Nexus to allow shippers to make an ocean freight booking, provide visibility and eVGM declarations.

It is also important for regulatory functions to be integrated with other trade-related transactions to facilitate efficient trade. Singapore Customs' Networked Trade Platform (NTP) performs this role as a one-stop interface for Singapore Customs' trade-related regulatory transactions with connectivity to commercial services such as trade financing, and offers traders and their banks a fully digitised Electronic Bankers' Guarantee Programme when lodging Banker's Guarantees with Singapore Customs.

In the B2F domain, aggregated data insights of physical execution and regulatory compliance will equip finance institutions, insurers and regulatory agencies higher confidence to simplify KYC processes and improve stakeholder's working capital, prevent money laundering or avoid multiple financing using the same documents.

It is impractical to expect a single "super" B2B platform to adequately cover the diverse logistics communities and needs of supply chains across different geographies. However, we should also resist the temptation to propagate platforms. It is useful for all (in particular SMEs) to collectively tap the network effect of platform communities already set up, as well as participate in efforts to develop practical and effective bridges for platform-to-platform inter-operability.

To facilitate effective digital collaboration, we will require broad-based industry support for common standards and interface harmonization with initiatives such as Digital Container Shipping Association (DCSA), Terminal Industry Committee (TiC 4.0) and MPA's digitalOCEANS. In May 2020, Singapore announced Alliance for Action - AfA for supply chain digitalization. One of AfA's initiative is to uplift local

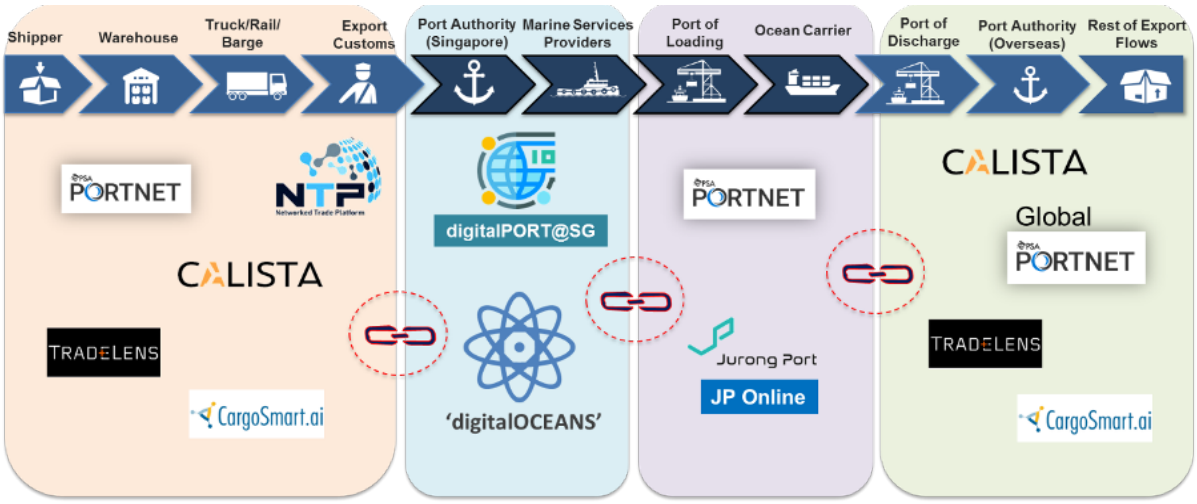
[3] Haulio is a Singapore-based digital start-up providing a marketplace for shippers and truckers to manage and optimize their fleet of vehicles and share idle assets.

supply chain ecosystem through a Common Data Infrastructure to leverage Singapore's position as a trusted digital trade and fulfilment hub. This is a good step especially for SMEs which will help them to address fear of data monopoly and monetization.

Concurrently, platforms backed by major industry stakeholders such as TRADELENS by Maersk-IBM and GSBN by COSCO/OOCL/Hapag Lloyd and PSA/SIPG/Hutchison/Qingdao Port/COSCO Ports are also exploring ways to connect and collaborate to serve their customers.

To simplify the reporting formalities for ships calling at the Port of Singapore, MPA has developed digitalPORT@SG™ (Portal for One-stop Regulatory Transactions) as a one-stop portal for smart e-form submissions of maritime-related regulatory transactions (maritime single window). For digitalPORT@SG™ to achieve seamless interoperability with various global maritime transport chain digital platforms, there is a need for secure and transparent data exchange between different platforms. Under the digitalOCEANS™ concept, MPA is advocating data exchange through the use of Open or Common Exchange And Network Standardisation (OCEANS) such as Application Programming Interfaces (APIs) to foster interoperability of public and private digital platforms.

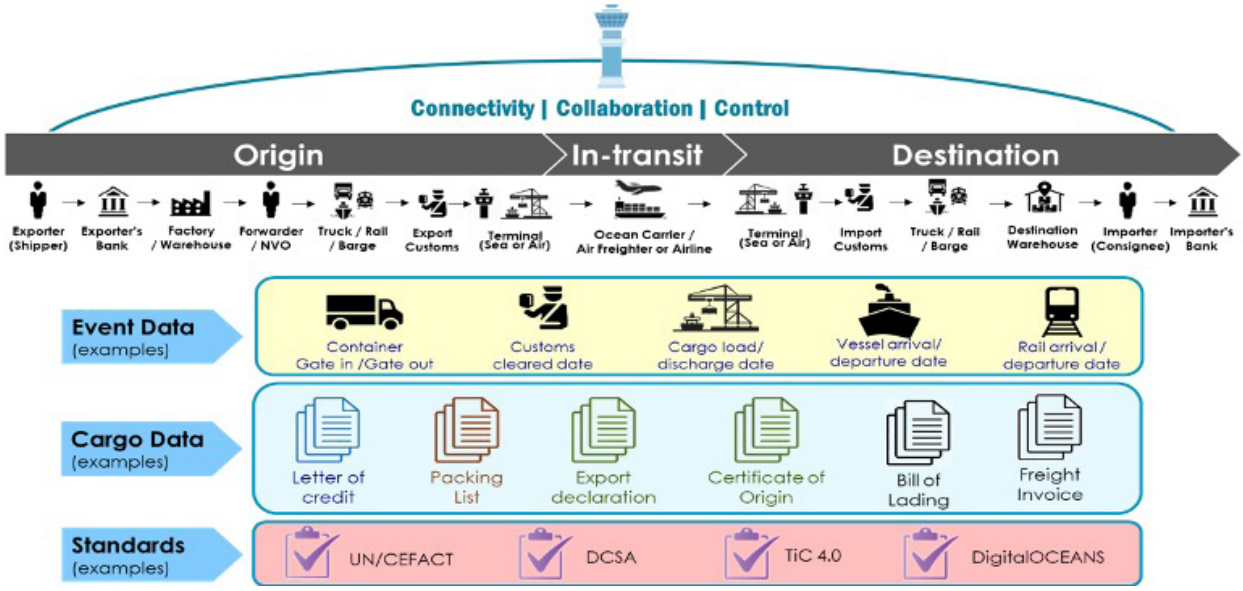
To this end, on 28 Jul 2020, MPA signed a MOU with five other international partners to develop and adopt common data standards and API specifications, which will facilitate data exchange for port and maritime services transactions. The five partners are CargoSmart (solution provider for Global Shipping Business Network), GTD Solutions (representing TradeLens), GeTS and PSA International (jointly representing CALISTA), and the Port of Rotterdam Authority.



Cargo Export Flows

CONTROL

The ability to re-route cargo on the move and enhance visibility details down to stock-keeping unit (SKU) level will create new competitive competencies for stakeholders. For example, in the logistics of medical supplies such as surgical or special purpose masks – knowing the types, colors and sizes of SKU will enable the timely and appropriate replenishment of inventory to meet demand accordingly.

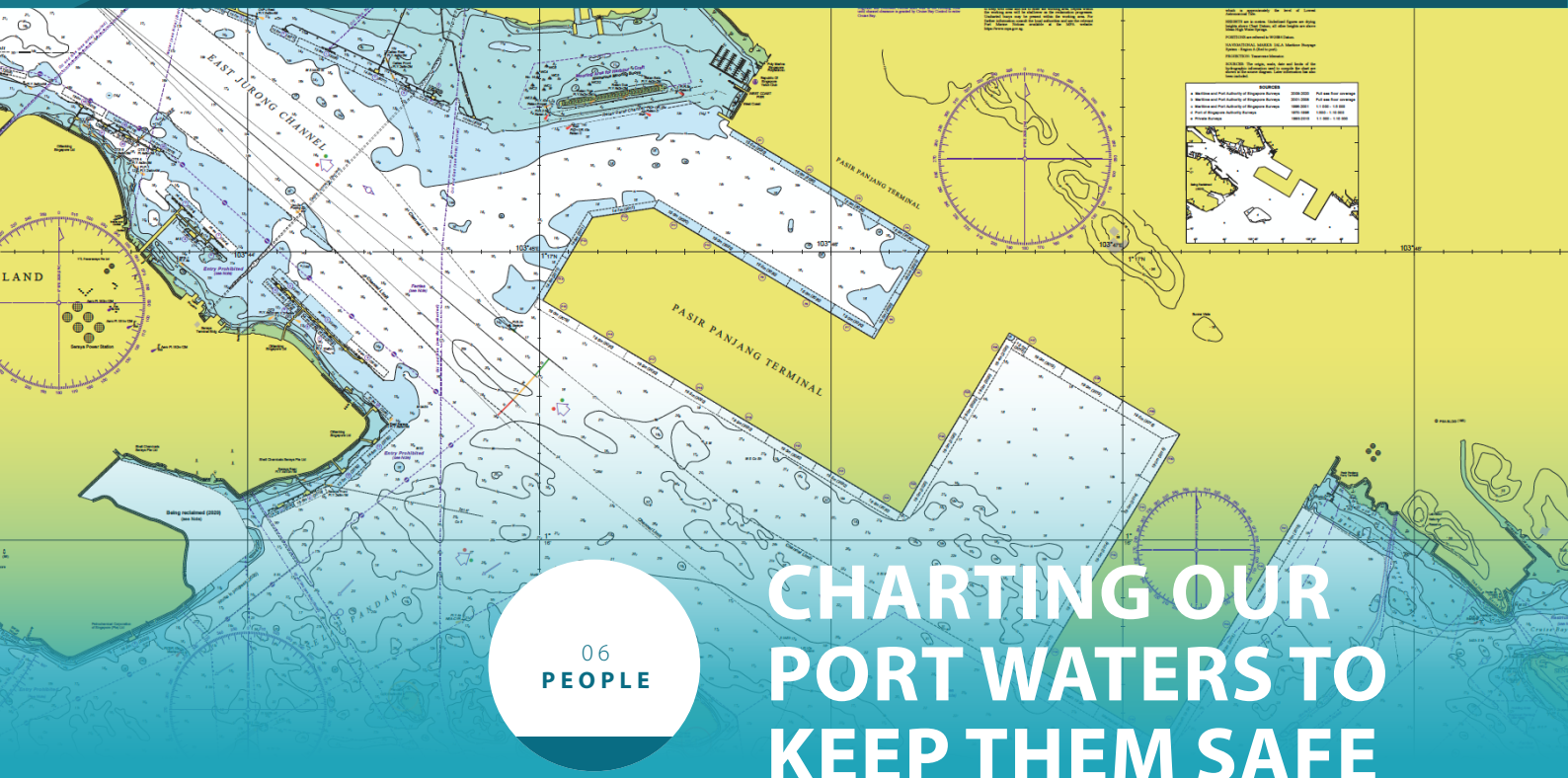


Utilizing data points from platforms, a logistics control tower allows stakeholders to monitor shipments and synchronize allocation of transport resources to avoid wastages and provide better assurance of execution. A pro-active coordination of resources enhances optimization of transport routes, flexibly re-plan and respond to operational disruptions and/or market shifts. Supplemented by data and AI-supported capabilities, stakeholders can confidently achieve the resilience and flexibility metrics sought by customers in the supply chain they serve.

CONCLUSION

Digitalization is driving fundamental changes to the performance metrics expected of global supply chains. Digital platforms and technology start-ups are offering the logistics industry fresh approaches and capabilities to innovate and transform business models, service offerings and cost-competitiveness. However, technologies will continue to evolve and mature, and experimentations with change can be costly if not managed appropriately. Stakeholders should reset their mindset and tap digital platforms to transform themselves with Connectivity, Collaboration and Control capabilities.

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09



06
PEOPLE

CHARTING OUR PORT WATERS TO KEEP THEM SAFE

BY RAHITA ELIAS

Singapore is the world's busiest port in terms of shipping tonnage. To ensure navigational safety within the port waters and its approaches, MPA manages a state-of-the-art Vessel Traffic Information System. MPA's Hydrographic Department also conducts hydrographic surveys, produces nautical charts, and operates aids to navigation to enhance the safety of navigation. Three men, who have helped shaped the team and its capabilities, tell their stories.

| Dr Parry Oei

Adviser (Hydrography)

Ever since Parry Oei was a boy, he was fascinated by the sea. By the time he was in secondary school, he had set his heart on a sea-going career. Just before he was due to enlist for National Service, he signed up to be a midshipman in the Republic of Singapore Navy, and spent almost six years at sea.

When he was slated to take up a shore position with the Navy, he wanted to stay at sea. So he decided it was time to leave the military and join the merchant navy. While waiting for a suitable posting, Dr Oei joined what

was the then Port of Singapore Authority as a cadet Assistant Hydrographer in 1982. The six-month stop-gap job became a career that has lasted nearly 40 years.

Technological advances

Hydrographer using an analogue single-beam echo sounder for the measurement of the seabed depths.

Deploying multi-beam echo sounder for survey work.

Over that period, hydrography changed tremendously, aided by quantum leaps in surveying and computing technology. While the methods have changed, one thing has not.

Dr Oei, MPA's Chief Hydrographer from 2004 to 2019, says, "Safety has always been a key focus, and technology has facilitated changes in our work over the years."

Looking back, he says, "We started off in the early 1980s using sextants for surveying work. We subsequently adopted the microwave, laser and the global navigation satellite systems (GNSS). These were very advanced technologies in the 1980s and early 1990s. We were an early adopter of the Acoustic Doppler Current Profilers to measure the velocity of water currents. More importantly, we expanded its use in-house and developed it to measure current on the vessel in the dynamic mode. This not only increased productivity to cover a larger area but we are also able to measure nearly the entire water column."

Dr Oei reckons that the technological turning point came in the mid-1980s.

"Because of the offshore industry downturn then, the equipment manufacturers made the hydrographic offices their target market". Hyperbolic systems, microwave systems and underwater acoustics became the main technological tools for surveying.

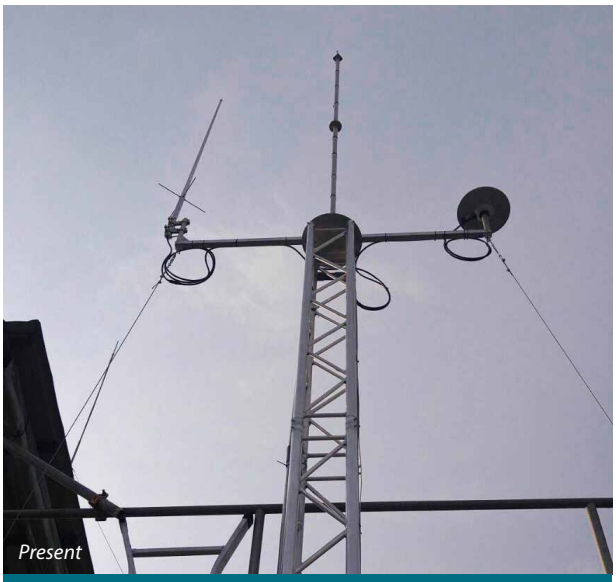
GNSS takes off

In the 1990s the adoption of GNSS as a primary positioning system began to gain momentum. With more satellites in space, determining one's position became more accurate. Advances in the technology itself further enhanced precision.

"From GPS, we went into differential GPS (dGPS). The latter is more accurate because it uses a precise ground point to measure the values and then sends signals to the receiver stations, which then make the necessary corrections."

Dr Oei says, "Now you can get sub-metre accuracy from dGPS."

Hydrographer using a sextant to determine the position at sea.



Advanced technology like GPS base stations gives more accurate positioning.

E-charting the waters

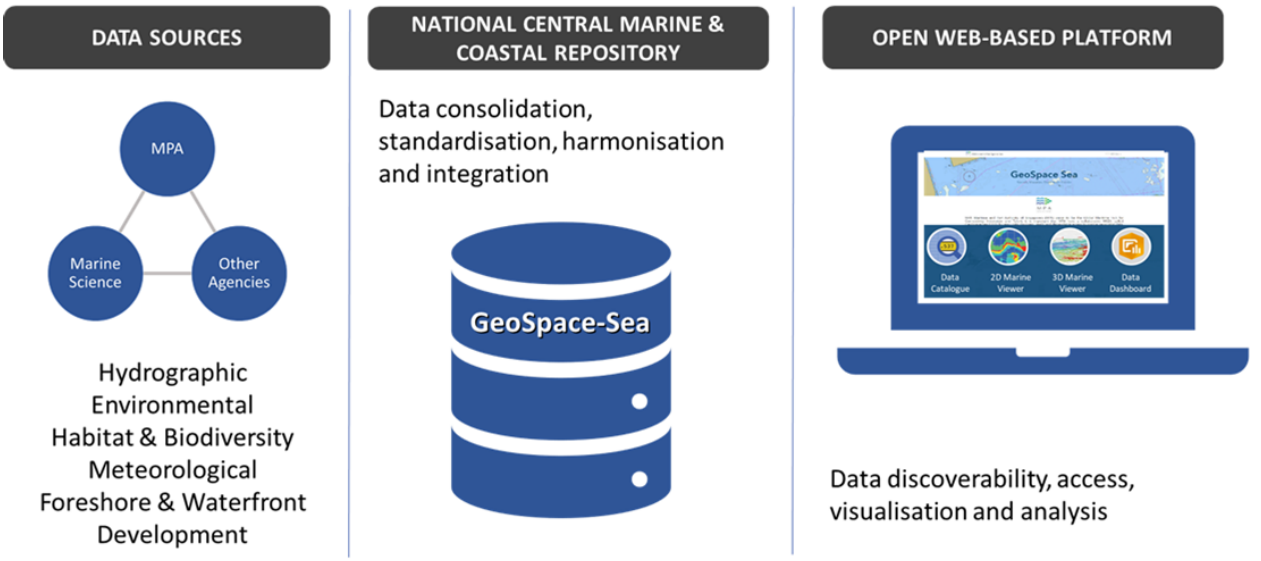
MPA's Hydrographic Department also does nautical cartography. Initially, the survey results were sent to the UK, which would produce nautical charts using the data provided.

In the late 1990s, with shipping traffic density through the Singapore Strait projected to grow exponentially, Singapore acquired the necessary cartographic capabilities and decided to create electronic navigational charts (ENC) of its waters.

"We have to aid and lessen the burden of the navigator onboard the ship transiting through our waters. The Electronic Chart Display and Information System (ECDIS), which uses ENCs, was the way to go since it allows for almost real-time positioning and wireless updating, which is faster and more accurate," says Dr Oei.

Following these Singapore-produced ENCs, MPA and the United Kingdom Hydrographic Office (UKHO) also signed an agreement in 2001 that paved the way for the production and sale of dual-badged charts. The charts, which bear the UKHO and MPA marques, cover Singapore's port waters and its approaches.

Today, the ENC data is more than just a navigational tool. It is the foundation for Singapore's National Marine Spatial Data Infrastructure (MSDI) called GeoSpace-Sea. Currently, different agencies manage information about sea space. When fully developed, the inter-agency GeoSpace-Sea system will provide comprehensive and consolidated geospatial data for port, marine and coastal planning, and environmental management promptly and efficiently.



Singapore's National Marine Spatial Infrastructure named GeoSpace-Sea

International efforts

Singapore is actively involved in developing MSDI globally. It is part of a working group under the United Nations Committee of Experts on Global Geospatial Information Management.

Another international effort in which Singapore participates is the East Asia Hydrographic Commission (EAHC). Member countries joined forces to create the South China Sea ENC in 2005.

Dr Oei, who was vice-chairman then chairman from 2003 to 2009, says, "I restructured EAHC to build long-term sustainability and promote capacity building within the region. This included establishing a training, and research and development centre funded by South Korea. It is also a platform to develop the second level of leadership in East Asia."

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09

East Asia Hydrographic Commission (EAHC) at Singapore's World Hydrography Day 2019 Celebrations where GeoSpace-Sea was officially announced.

Dr Oei, who was Chairman of the International Hydrographic Organisation's (IHO) Inter-Regional Coordination Committee, adds that Singapore is establishing an IHO innovation and technology laboratory. The laboratory will facilitate research or investigative projects and/or test-bedding in the field, create knowledge for standard-setting, and promote a multidisciplinary, collaborative environment.

Good team of people

The evolution of the Hydrographic Department over the years underscores its ability to adapt to the ever-changing seascape. As a result, it has become the world-class operation it is today. This, says Dr Oei, is all thanks to its people.

"To build a good team, you need to identify and recruit the right people, and then make sure that they are constantly challenged and excited. And I think we have achieved that."

| Mr Wong Tuck Meng

Senior Manager, Hydrographic Survey

Wong Tuck Meng joined MPA's predecessor, Port of Singapore Authority, in 1980 after completing his "O" levels.

"After we joined PSA, we carried on with our studies, a four-year part-time diploma course in 1981 at the Singapore Polytechnic. We worked in the day and went to school about 3-4 nights a week. Much of the training though was on the job."

Analogue days

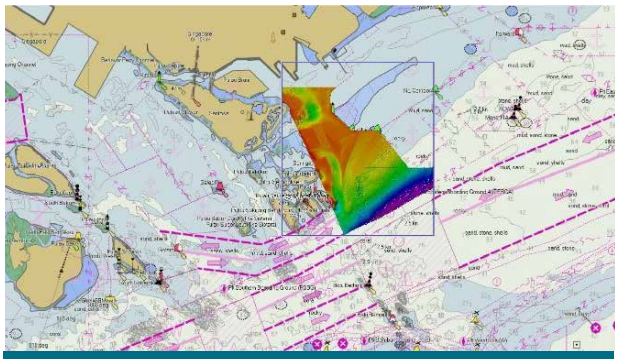
"Almost everything then was analogue. While one person would plot the position, two others would use sextants to determine the angles and another would operate the echo sounder – the only electrical device we had at that time."

The survey office had about 30 people in those days. At any one time, half would be out at sea while the rest would be in the office processing the data collected.

"After completing the survey at sea, we would have to return to the office to manually re-plot everything. A small area of say one square kilometre would take at least one week to plot."

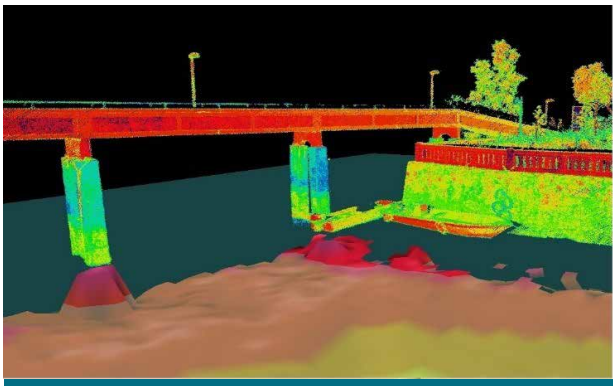
These drawings were still only drafts and would be redone for greater clarity and accuracy by cartographers. Once approved by the Chief Hydrographer, the charts would be printed on paper which had to be of a certain quality, colour and print. Today, charts are electronic and can be more quickly and accurately updated.

Station pointer on paper chart.



Electronic Chart

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09



3D imaging of objects above and below water surface using multi-beam echo sounder and LIDAR.

Going digital

Mr Wong says that the Hydrographic Department started to computerise its work in the 1990s. This move to digitalisation enhanced productivity as well as the accuracy of surveys and charting. For instance, the number of people needed per survey team reduced from four to two and eventually one.

In terms of accuracy, Mr Wong explains, "In the pre-digitalisation days, the separation between each point could range between 12 and 20 metres. Now with modern technology, we are talking about a half-metre resolution or better."

Among the technological advances was in the area of multi-beam sonar and Laser Scanner (LIDAR).

"The multi-beam echo sounder was introduced in the early 2000s and completely changed the way that surveying was done. Using a single beam, we take maybe one week to survey an area. With the multi beam, it can be half a day to one day." LIDAR was incorporated later in 2013 to pick up high resolution land details.

Edwyn attending EAHC course on training for trainers.

Mr Edwyn Ang

Senior Technical Executive, Hydrographic Survey

Edwyn Ang's first days on the job as a technical officer at the Hydrographic Department in 2009 were truly memorable.

"On my first day, Mr Wong took me with him to do coast-lining. Back then, we literally had to hold a GPS antenna and walk along the coast. I was wearing a business shirt, formal trousers and shoes. By the time we finished, I looked like one of those guys on the Survivor TV series. But this kind of manual work allowed me to better understand the basics of positioning."

Field training

These days, Edwyn is closely involved in the training of new officers who join the Hydrographic Department.

New technical officers today are given immediate field training to ascertain if they are cut out for the job.

"When a young officer joins, we'll send him out to sea and see if he can take it. Some of them get seasick five minutes into the boat ride."

After the field training, they undergo several weeks of classroom training for the basic hydrography course. The course follows EAHC recommendations but the details are worked out by MPA itself.

Survey – the bedrock of hydrography

This is followed by on-the-job training, which can last between six and eight months, where their seniors will share their experiences and knowledge with them. The junior officers are attached to different sections but spend most of their time in survey section.

"Survey training is always the priority because it's the first step in hydrography. You want to know where to lay a buoy, you do a survey first. You want to produce a chart in cartography, you do a survey first. So everything in hydrography boils down to that first step – the survey of the seabed," says Mr Ang.

After several months of job rotation, the officers undergo a grilling process by a panel of their seniors. If they are able to answer the questions, they would be sent for more advanced training such as IHO certification, which usually takes between half a year to a year.

Learning from experience

Overall, while classroom training is essential, nothing beats learning from experience and making mistakes.

Mr Ang says, "Sometimes we let our officers make mistakes and learn from them. We send them on their own to do jobs which would not have major safety implications. In this way, they can make mistakes and learn from them without endangering anyone."

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09

07
HIGHLIGHTS

IMarEST ACCREDITATION FOR MPA'S MARINE SURVEYOR TRAINING PROGRAMME

BY SADDIQ HAQUE

Providing quality training to MPA's officers has always been a key priority given the many changes taking place in the maritime industry. MPA therefore sought accreditation for its Marine Surveyor training programme from IMarEST to benchmark its training programme against international standards.

To ensure that the training provided to MPA's marine surveyors meets international standards, MPA in 2020 submitted its Marine Surveyor training programme for assessment to obtain accreditation by the Institute of Marine Engineering, Science and Technology (IMarEST)[1] This is part of the MOU between MPA and IMarEST on training and professional development that was inked on 3 Oct 2019. Through this partnership, MPA and the IMarEST aim to upskill maritime talent in Singapore by creating more pathways for professional development and recognition. This will benefit marine surveyors in MPA, as well as offshore and shore-based maritime professionals.

The accreditation process is an independent assessment of an academic programme against standard learning outcomes. Gaining accreditation means that the MPA's Marine Surveyor training programme meets some or all of the knowledge, understanding and skills required for professional registration. It is a stamp of excellence that is internationally recognized and generally involves a rigorous peer-review

[1] IMarEST is an international professional body and learned society for marine professionals. It is the largest marine organisation of its kind with a worldwide membership of over 18,000 individuals based in over 120 countries.

process, analysing the technical content taught and the processes in place to ensure effective delivery of the programme.

The consultation process involves independent and experienced assessors with global academic expertise – this is a valuable tool for continuous improvement and advice on international best practice.

Within MPA. the importance of Marine Surveyor training is underscored by the fact that they play an important role in several key areas that contribute to MPA's mission. These include promoting the growth of the Singapore merchant fleet, implementing Singapore's flag and port State responsibilities, and regulating the certification of seafarers. Also, training is an integral part of MPA's culture that encourages continuous learning and development.

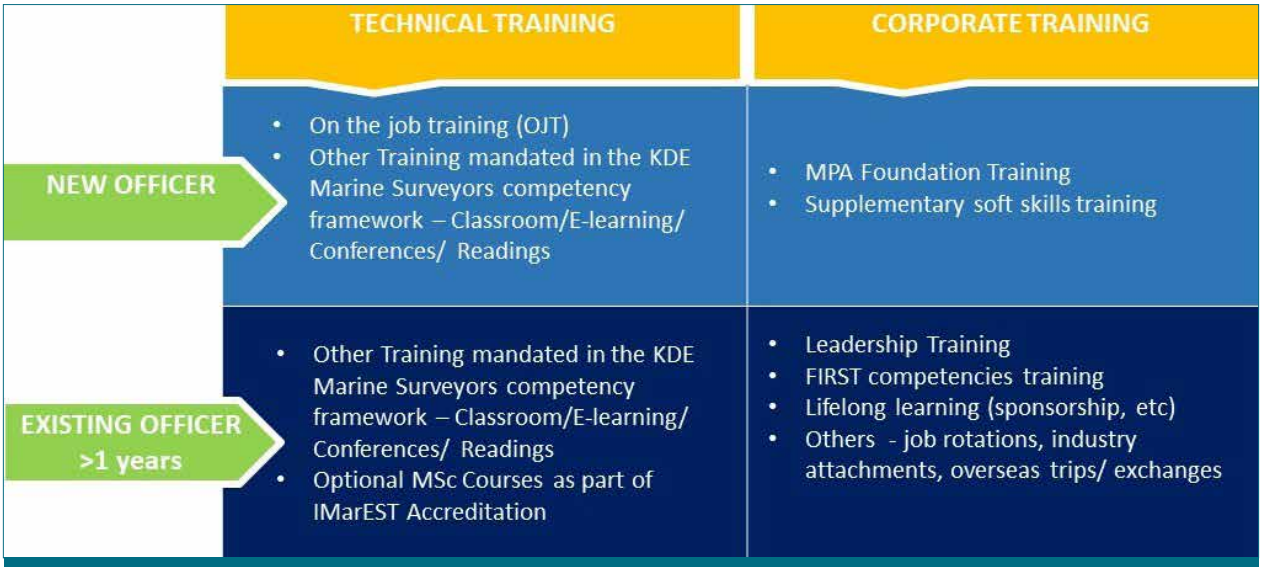
On the job training

Classroom training

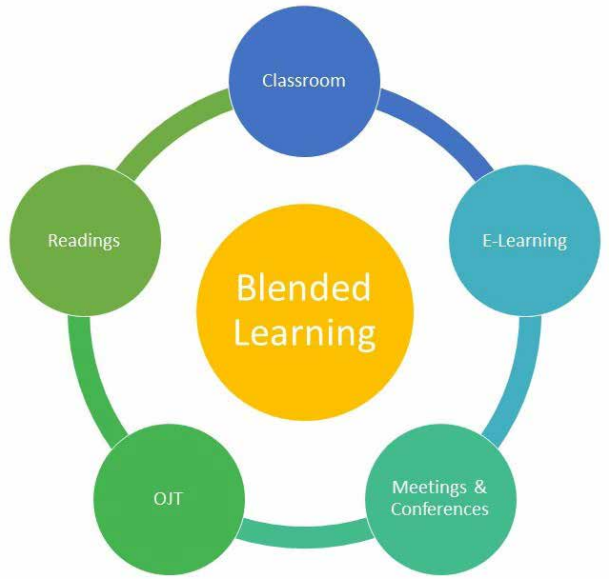
One of the main aims of MPA's marine surveyor training programme is to provide training to MPA's marine surveyors so that they are equipped with the necessary skills and knowledge to effectively perform their jobs. The training programme also aims to offer surveyors more options for professional development in working towards professional registration or chartered status. Some of the courses offered include the MSc in Engineering for Marine Professionals, MSc in Advanced Navigation for Professionals and MSc in Sustainable Maritime Operations linked to Plymouth University, U.K.

There are two main components to the Marine Surveyor training programme – Technical Training, and Corporate Training. The former is mainly for developing technical knowledge and understanding including the skills of application to practice. This includes On-The-Job (OJT) Training, which typically will last 12 to 18 months, and forms part of the first part of the Programme which all marine surveyors go through. The latter develops "soft skills" such as communications, leadership, and professionalism.

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09



A graphical overview of Marine Surveyor Training



The various components encompassing Marine Surveyor training

The accreditation process took place in Dec 2020 and involved MPA officers from MPAA, Human Resource and Shipping Divisions. Despite the logistical difficulties brought about by the COVID-19 situation, the MPA team worked to facilitate the accreditation process by submitting online as much of the materials as possible needed by the assessors. In addition, the accreditation panel, which usually flies in from London to conduct face-to-face assessments, conducted the assessments virtually which we understand was a first for IMarEST.

The virtual meeting sessions covered topics ranging from programme design and assessment channels to quality assurance procedures and trainee selection/development. There was also a session with 5 marine surveyors for the assessors to gauge their perceptions and experiences of the training provided.

The accreditation process was a success and the Marine Surveyor training programme was accredited by IMarEST in April 2021. One of the areas of excellence identified by IMarEST was that the marine surveyor training programme offered plenty of opportunities to work and gain experience in the wider global maritime sector. Another strength of the Programme is that it supports marine surveyors, regardless of rank, to pursue personal and career development opportunities and academic qualifications. Finally, the Programme offers plenty of development opportunities within the MPA itself.

Nevertheless, there were some recommendations for enhancements to the Programme. These include embedding the MPA mentorship programme within the Shipping Division as well as continuing to support and encourage surveyors to formally record their own continuing professional development.

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09

TRAINING COURSES FROM

NOVEMBER 2020 - APRIL 2021

VESSEL TRAFFIC OFFICERS

- IALA V103/2 VTS Supervisor Training Course
- IMO Model Course 6.10
- Refresher Training for Vessel Traffic Officers
- Remote On-Scene Commander (IMO Level 2 Equivalent)

MARINE OFFICERS, PORT CHEMISTS AND PORT INSPECTORS

- Shipyard Safety for Hot-Work Certification
- Basic Ionising Radiation Safety Course
- Remote Oil Spill Response Management (IMO Level 3 Equivalent)
- Remote On-Scene Commander (IMO Level 2 Equivalent)
- Understanding and Complying with the IMDG Code

OPS PLANNING & PILOTAGE

- Remote Oil Spill Response Management (IMO Level 3 Equivalent)

MARINE LICENSING & PERMITS

- Robotics Process Automation Begins with Me

MARINE SURVEYORS

- IMO Model Course 6.10
- Internal Auditor ISM, ISPS, MLC Course
- ISM, ISPS, MLC Experienced Auditor Course

HYDROGRAPHERS

- Occupational First Aid Course
- Perform Rigger and Signalman Tasks
- Supervise Safe lifting Operations

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09

ENGINEERS

- Sharing session on BCA's QFM Framework
- Training on Building Information Modelling (BIM) Software

PORT SYSTEMS

- Managing Work-at-Heights Course
- Occupational First Aid Course
- Work-at-Heights Course for Workers

INFORMATION TECHNOLOGY

- AZ-303 Microsoft Azure Architect Technologies
- Certified in Risk and Information Systems Control
- Certified ScrumMaster
- Cloud Native Solution Design
- DevOps Engineering and Automation
- Implementing Microsoft Azure Infrastructure Solutions
- ITIL® Foundation Certificate in IT Service Management
- Managing Cybersecurity Risk
- Oracle WebLogic Administration Training

INTERNATIONAL MARITIME CENTRE

- Customised Tax Training Programme

BUSINESS CAPABILITY DEVELOPMENT

- Deloitte Budget 2021 Webinar
- PwC Budget 2021 Webinar

STRATEGY & POLICY

- Enterprise Risk Management

ALL MPA OFFICERS

- Cybersecurity Awareness e-Learning
- Design Thinking Workshop
- Growth Mindset Programme (Virtual Learning)
- Tableau Fundamentals and Intermediate

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09

PLANNED TRAINING COURSES FROM

MAY 2021 - OCTOBER 2021

VESSEL TRAFFIC OFFICERS

- IALA V103/2 VTS Supervisor Training Course
- Refresher Training for Vessel Traffic Officers
- Remote On-Scene Commander (IMO Level2 Equivalent)

MARINE OFFICERS, PORT CHEMISTS AND PORT INSPECTORS

- Basic Ionising Radiation Safety Course
- Refresher course on IMDG Code
- Remote On-Scene Commander (IMO Level2 Equivalent)
- Standard First Aid Course

MARINE SURVEYORS

- Internal Auditor ISM, ISPS, MLC Course
- Standard First Aid Course

HYDROGRAPHERS

- Occupational First Aid Course
- Perform Rigger and Signalman Tasks
- Supervise Safe lifting Operations

ENGINEERS

- Session with Singapore Mediation Centre on mediation/arbitration

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09

INFORMATION TECHNOLOGY OFFICERS

- AZ-303 Microsoft Azure Architect Technologies
- Certified ScrumMaster
- Cloud Native Solution Design
- DevOps Engineering and Automation
- Managing Cybersecurity Risk

INTERNATIONAL MARITIME CENTRE OFFICERS

- Webinar training sessions on "Shipping Entity and Eco-system Knowledge"

BUSINESS CAPABILITY DEVELOPMENT OFFICERS

- Executive Tax Programme Level II (Income Tax – Corporate & Business)
- Executive Tax Programme Level III (Income Tax – Advance Tax Programme)
- International Taxation: Cross-Border Tax Issues and Tax Treaties
- Certified Scrum Product Owner

STRATEGY AND POLICY OFFICERS

- Enterprise Risk Management

ALL MPA OFFICERS

- Cybersecurity Awareness e-learning

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09

UPCOMING EVENTS

(BY INVITATION)

MAY 2021 TO FEB 2022

10th Maritime Public Leaders Programme (Virtual) – October 2021

Participants: Senior maritime officials

14th Maritime Safety Management Course conducted by MPA and Japan Coast Guard – Feb 2022

Participants: Maritime officials

HORIZON
MPA ACADEMY NEWSLETTER / APR 2021 / ISSUE 09

About us

As the training arm of the Maritime and Port Authority of Singapore (MPA), the MPA Academy was repositioned in 2014 to be a full-fledged academy with a dedicated premise with a focus on global maritime leadership training. The academy's vision is to be a global learning centre for maritime and port administration. The academy's mission is to enhance the skills and knowledge of MPA officers and to conduct flagship training programmes for overseas port and maritime officials, including supporting the training needs of the International Maritime Organization (IMO) as a Council member. The MPA Academy's dedicated facility is located at mTower and was officially launched in October 2015.

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