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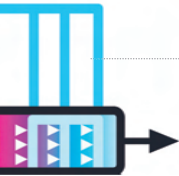
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SINGAPORE

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Port Authority of  
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# SINGAPORE maritimeweek 2010

**Singapore Maritime Week takes centre stage in 2010, with the 5th edition from 25 to 30 April.**

Steered by the Maritime and Port Authority of Singapore, Singapore Maritime Week (SMW) is an exciting gathering of the international maritime community in Singapore for a week of conferences, dialogues, exhibitions and social events in celebration of all things maritime.

This is why SMW is all about People, Ideas and Opportunities for the maritime community.

Visit us at [www.smw.sg](http://www.smw.sg) for more details.



# PEOPLE | OPPORTUNITIES IDEAS

# 25-30 APRIL 2010

5th SINGAPORE MARITIME WEEK

# Working together as one community

The Asia-Pacific Economic Cooperation (APEC) is celebrating its 20th birthday in Singapore.

Over the past two decades, the 21 APEC countries came together to promote economic growth, co-operation, trade and investment across the region.

The public-private support of boosting trade linkages and reducing business red tape is driven by the belief that by co-operating with one another, a larger outcome can be achieved as compared to each country having to depend on itself.

This issue of *Singapore Nautilus* focuses on a similar theme – international co-operation. Given the global and multifarious nature of the maritime industry, close co-operation among partners and stakeholders ensures that the maritime ecosystem flourishes and the community can achieve much more together.

This is a key principle in Singapore's advancement of the IMO's work programmes and contributions to the international maritime community.

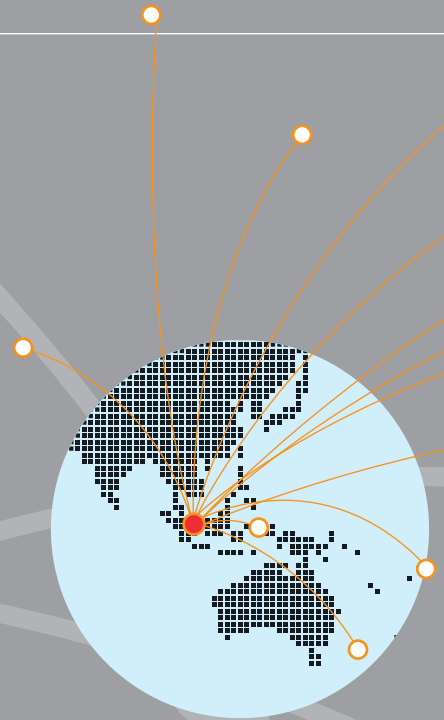
On a lighter note, for those who have been following us for some time now, you would have noticed a change to the magazine. Inspired to take *Singapore Nautilus* to new heights, we decided to update our look, and adopt new ways of looking at things and telling our stories.

I would like to take this opportunity to thank Matt, the outgoing editor-in-chief, for developing *Singapore Nautilus* and leaving us large shoes to fill.

We look forward to bringing you more interesting features and insights in future issues. If you have ideas or comments, it'll be great to hear from you. Drop us a line at **[SN\\_feedback@mpa.gov.sg](mailto:SN_feedback@mpa.gov.sg)**.

In the meantime, I hope you'll enjoy reading this issue.

*wee shann*  
executive editor



## MPA-NTUC's e2i collaboration steers job seekers



SPH LIBRARY

► The Maritime and Port Authority of Singapore (MPA) and the National Trades Union Congress (NTUC) e2i (Employment and Employability Institute) have joined hands in organising several job fairs to encourage more Singaporeans to join the harbour craft industry.

The collaboration between NTUC's e2i and MPA provides employability and employment assistance to Singaporeans as 200 job vacancies for harbour craft trainee steersmen become available over the next two years.

So far, the response has been encouraging. Out of 120 vacancies this year, 73 job seekers were offered placements over two phases of recruitment, thus filling 60 per cent of the vacancies.

The joint job fairs were held at Marina South Pier and e2i.

Mr Abdul Hamid Harun (right), a water-taxi helmsman, showing the tricks of the trade to Mr Khairul Fazli Abdul Rahman, who is taking part in the helmsmen training programme organised by e2i and MPA.

Fifteen harbour craft companies participated in the two recruitment phases and more than 500 applicants attended e2i's Industry Previews held prior to the job fairs.

To prepare suitable applicants for the job fairs, they attended a two-day Employability Camp and relevant training programmes, such as the Certified Operations Specialist Workforce Skills Qualifications (WSQ) Workplace Safety and Health course.

### Career progression

"Developing people for the maritime industry is a key

priority for MPA and we are glad to work with our partners to attract and develop more people for the harbour craft industry. The harbour craft industry is an integral part of Maritime Singapore and is also a good source of employment for Singaporeans," said Mr Lam Yi Young, Chief Executive of MPA.

To accelerate the job progression of trainee steersmen with less than Secondary Two education, MPA worked with e2i and the Singapore Workforce Development Agency (WDA) to recognise the Workplace Literacy (WPLN) Level 4 as an alternate qualification.

Trainee steersmen with at least Secondary Two education or WPLN Level 4 need only go through a minimum of three months of on-the-job training, instead of six months, before attending the Port Limit Steersman course and examination.

MPA and WDA are funding 90 per cent of the Port Limit Steersman course fees, while the employer will top up the remaining 10 per cent of the course fee for each trainee.

## MPA wins ACE Pro-Enterprise Award once again

► MPA came out tops in an annual survey by the Action Community for Entrepreneurship (ACE) on the pro-enterprise orientation of regulatory agencies.

MPA was one of the five winners of the ACE Pro-Enterprise Awards held at the Singapore Flyer recently. MPA topped this survey for the third year running.

ACE was launched in May 2003 as a national effort to foster Singapore into a creative and entrepreneurial nation where innovation and enterprise can be translated into wealth creation and where diversity of ideas thrives. The ACE Awards for pro-enterprise agencies is an initiative to encourage regulatory agencies to establish a pro-enterprise environment in Singapore.



Mr Lam Yi Young, Chief Executive (CE), MPA receives the Ace Pro-enterprise award from Mr Lee Yi Shyan, ACE Chairman, Minister of State, Ministry of Trade and Industry and Ministry of Manpower.

## Paying tribute on World Maritime Day



Ships that called at the port of Singapore on September 24 received hampers as part of the celebrations to mark the annual World Maritime Day (WMD).

About 600 hampers were distributed by MPA, the Singapore Maritime Officers' Union and the Singapore Organisation of Seamen. Each hamper contained foodstuff, a health magazine, a movie DVD and the International Maritime Organization's (IMO) message for the year.

The annual hamper distribution is also part of Singapore's efforts to promote the well-being of seafarers.

At the presentation ceremony held at the Maritime House, MPA Chief Executive Mr Lam Yi Young presented the hampers to some 20 representatives from the shipping industry. "World Maritime Day is a fitting

occasion to salute seafarers for their valuable contribution to the industry. MPA works closely with the industry to promote seafarer welfare and well-being. The hampers are a token of our appreciation to seafarers," said Mr Lam.

WMD is initiated by the IMO and is celebrated each year during the last week in September. Its focus is on the importance of shipping safety, maritime security and the marine environment and to emphasise a selected aspect of IMO's work. This year's theme is "Climate change: a challenge for IMO too!"

## 40 students awarded MaritimeONE scholarships

As part of the continued investments in manpower development, the maritime community is stepping up efforts to attract bright young talent to the maritime sector.

MPA, the Singapore Maritime Foundation (SMF) and key maritime industry players awarded 40 outstanding students with scholarships and sponsorships at the MPA and MaritimeONE Scholarship Awards Ceremony in August. Of these 40 students, 24 will be pursuing their bachelor degrees and 16 will be pursuing diploma studies at the Singapore Maritime Academy in Singapore Polytechnic.

The scholarships and sponsorships given out included the MPA Scholarships, MPA Sponsorships, Tripartite Maritime Scholarship Scheme (TMSS), Seafaring Alternative, An Investment for Life (SAIL) scholarships and MaritimeONE Scholarships.

"Despite the downturn, the maritime community remains very supportive of the scholarships and sponsorships under the MaritimeONE initiative," said MPA Chairman Mr Lucien Wong. "I would like to thank our maritime industry and the Singapore Maritime Foundation for their continued commitment to grow and nurture maritime talent."

Organised for the second time, the joint MPA and MaritimeONE Scholarship



Mr Lucien Wong, MPA Chairman presents scholarships at the MPA and MaritimeONE Scholarships Awards Ceremony.

Awards Ceremony reflects the successful partnership between MPA, maritime companies and institutes of higher learning to enhance maritime education and create a ready pool of professionals to drive the development of Singapore as an international maritime centre.

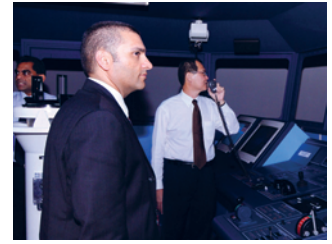
The MaritimeONE Scholarships are funded by sponsoring maritime companies. For 2009, the six sponsoring companies are Lloyd's Register Educational Trust, Pacific Carriers Ltd, Pacific International Lines Pte Ltd, Singapore Maritime Academy in Singapore Polytechnic, SMA-SMTC-Global (S) Pte Ltd, and TORM Singapore Pte Ltd.

## Visit by Thai Delegates



Captain Khong Shen Ping (left), Assistant Chief Executive, MPA, hosts a visit from the Thai Civil Service Exchange Programme (CSEP)

## Visit to ISC



At MPA's Integrated Simulation Centre (ISC) – a visit from Transport Canada led by Mr Tim Meisner, Director General, Marine Policy

## MPA Management Advance



MPA Management Advance was held at The Chevrons in July

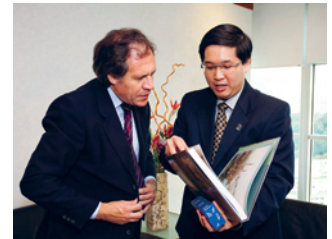
## Visit to POCC2



Captain Lindsay Copeman, Harbour Master of Port Hedland, visits MPA's Port Operations Control Centre 2

At MPA's Port Operations Control Centre 2 – a visit from Japan Coast Guard Training Vessel, "Kojima", led by Coast Guard Superintendent Manabu Sakiyama

## Visit by Uruguay Ambassador



HE Luis Almagro, Ambassador-Designate of Uruguay to Singapore calls on Mr Lam Yi Young, Chief Executive, MPA



## National Day Observance Ceremony



Ministry of Transport Family National Day Observance Ceremony 2009



Taking the national pledge

## Visit by Ginga Maru



Officers from Ginga Maru and K Line (S) Pte Ltd visit MPA's Integrated Simulation Centre



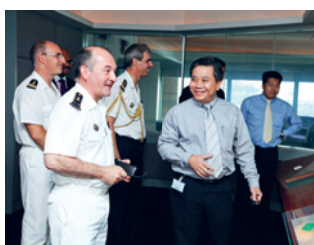
## Visit by Japanese MLIT



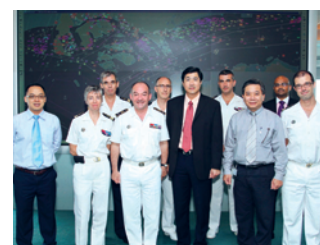
Mr Toshiya Morishige, Deputy Director-General, Maritime Bureau and Ports and Harbours Bureau, Ministry of Land, Infrastructure, Transport and Tourism (MLIT), calls on Mr Lam Yi Young, Chief Executive, MPA



## Visit by French Navy



French Navy delegation led by Rear Admiral Bruno Nielly visits MPA's Port Operations Control Centre 2



## MPA Dinner & Dance



MPA's dinner and dance 2009: Roll in the Good Times



## Visit by Swiss Ambassador



Captain Khong Shen Ping receives HE Jorg Alois Reding, Swiss ambassador to Singapore



# REGIONAL CO-OPERATION BOOSTS SECURITY

FIRST GOVERNMENT-TO-GOVERNMENT AGREEMENT ENHANCES REGIONAL  
MARITIME SECURITY AND MULTILATERAL CO-OPERATION

► In November 1999, the then Prime Minister of Japan, Mr Keizo Obuchi mooted the need for a regional agreement to address the concerns of the growing threats at sea.

This was followed by a Regional Conference on Combating Piracy and Armed Robbery Against Ships which was held in Tokyo in March 2000 where law enforcement agencies, as well as maritime industries jointly addressed these maritime challenges.

From this conference (more commonly referred to as "Asia Anti-Piracy Challenge 2000" Conference), two documents – namely the "Tokyo Appeal" and the "Model Action Plan" – were promulgated to call for cooperation, sharing of information and taking

appropriate measures to suppress piracy and armed robbery against ships.

### Regional framework

Following this conference, regional governments and law enforcement agencies held several meetings to draft the framework for a regional agreement.

The content of this agreement (known as the Regional Cooperation Agreement on Combating Piracy and Armed Robbery Against Ships in Asia, or ReCAAP), was finalised on November 11, 2004 by 16 countries (ASEAN + six countries comprising Bangladesh, Brunei, Cambodia, China, India, Indonesia, Japan, Korea, Laos, Malaysia,

Myanmar, Philippines, Singapore, Sri Lanka, Thailand, and Vietnam).

The Agreement came into force on September 4, 2006 and the ReCAAP Information Sharing Centre (ISC) which is based in Singapore was officially launched by Mr Raymond Lim, Minister for Transport and Second Minister for Foreign Affairs on November 29, 2006.

Under the Agreement, the key role of the ReCAAP ISC is to be a platform for information exchange on piracy and armed robbery incidents, as well as conducting analysis of the pattern and trends of such incidents. The centre also fully supports capacity-building efforts and facilitates co-operative arrangements.

### Strengths of ReCAAP

To date, there are 15 Contracting Parties to the ReCAAP – Bangladesh, Brunei, Cambodia, China, India, Japan, Korea, Laos, Myanmar, Norway, the Philippines, Singapore, Sri Lanka, Thailand and Vietnam. Norway joined ReCAAP on August 29, 2009 and it is the first contracting party that is outside the Asian Region.

The Agreement requires each Contracting Party to appoint a governmental agency to be its national Focal Point. These Focal Points are required to manage piracy and armed robbery incidents within its jurisdiction to facilitate law enforcement investigations and co-ordinate such actions with its neighbouring focal points.

**The key role of the ReCAAP Information Sharing Centre is to be a platform for information exchange on piracy and armed robbery incidents, as well as conducting analysis of the pattern and trends of such incidents. The centre also fully supports capacity-building efforts and facilitates co-operative arrangements.**

Information gathered from all incident reports is used by the ReCAAP ISC for research and trend analysis. The ReCAAP ISC produces monthly and quarterly reports which provide valuable data and recommend preventive measures on such incidents. The maritime community also receives incident alerts on incidents that occur around the region.

To support the information sharing process, the ReCAAP ISC conducts regular capacity-building activities which include operational visits, workshops, exercise, and technical assistance programmes that share best practices. The ReCAAP ISC also worked with partner organisations on mutually beneficial terms and with those

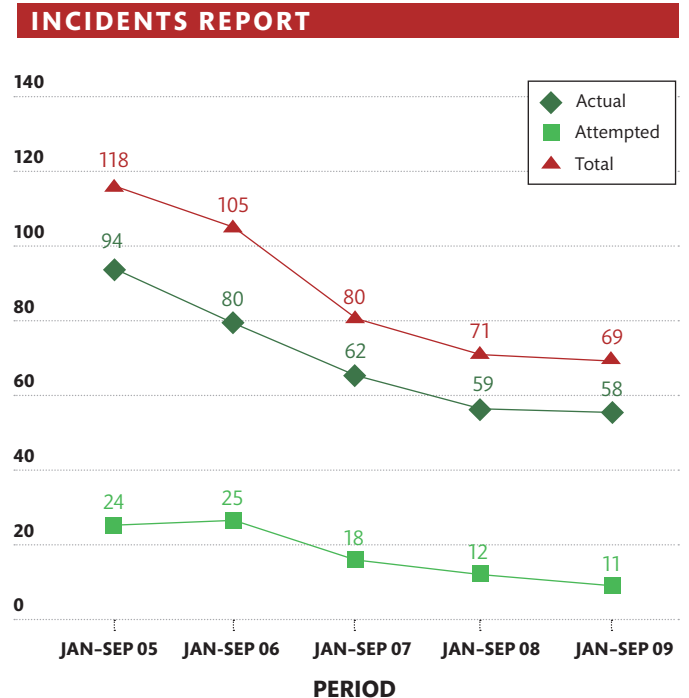
who are not members of the agreement but who wish to collaborate in its programmes.

Co-operative Agreements such as these paved the way for greater growth and progress in combating piracy and armed robbery incidents in the region.

#### ReCAAP ISC today

With its international partners, the ReCAAP ISC continues to seek avenues to address the maritime challenges ahead and assist like-minded agencies and organisations in their quest to suppress piracy and armed robbery at sea.

The ReCAAP framework was also used as a model for regional anti-piracy co-operation to emulate namely under the formulation of the Djibouti Code of Conduct.



The ReCAAP ISC encourages ship masters to report all incidents, including attempted incidents of piracy and armed robbery against ships to the Rescue Coordination Centre of the coastal states; and ship owner and ship operator to the ReCAAP Focal Points.

Multi-channel reporting and timeliness of reports enable the ReCAAP ISC to issue incident alerts to warn seafarers and the maritime community about the incidents.

In addition, it provides inputs from alternate sources which facilitate data verification, information collation and comprehensive analysis in delivering trends and patterns, and value-added reports for sharing with ship masters, ship owners, ship

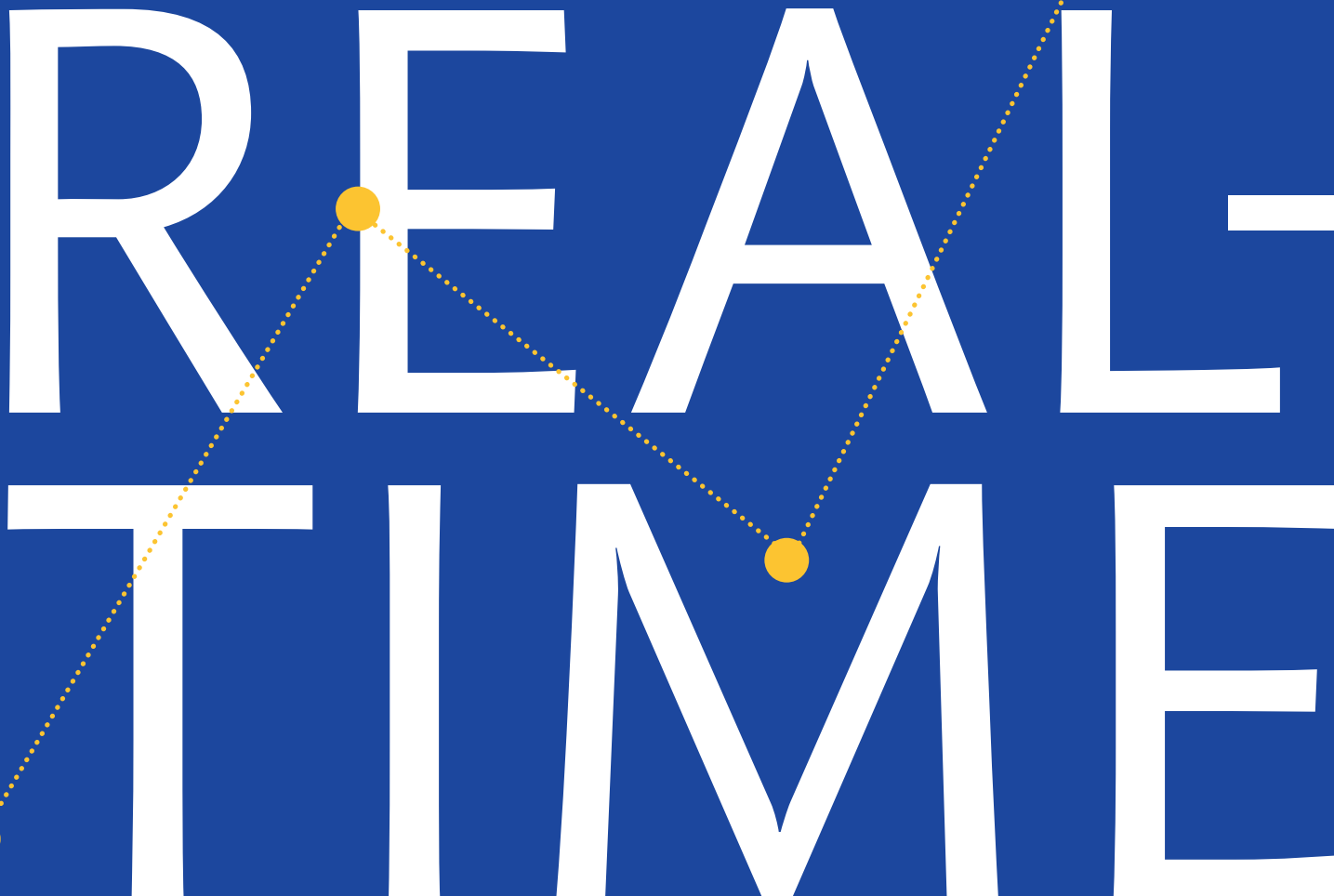
operators and the rest of the maritime community.

The successful decline in the number of incidents in the region has been contributed in part by the commitment and determination of the ReCAAP member governments and its partner organisations.

Co-operation and encouragement from international organisations like the IMO and the shipping industry have been crucial to the ReCAAP ISC's progress.

The ReCAAP initiative continues its commitment to ensure that Asian waters remain safe and secure.

This article was contributed by the ReCAAP Information Sharing Centre.



# REAL-TIME INDEX

SINGAPORE'S MARITIME SECTOR GETS A BOOST WITH THE LAUNCH OF NEW **FTSE ST INDEX**, HIGHLIGHTING 12 COMPANIES IN THE ENERGY, OFFSHORE AND SHIPPING INDUSTRIES.

# INDEX

► The recent launch of the new FTSE ST Maritime Index in August by Singapore Press Holdings, Singapore Exchange (SGX) and FTSE Group boosted several listed maritime sector companies.

The index, an extension of the FTSE ST Index series, comprises 12 companies that have at least 55 per cent of their revenue derived from maritime-related activities.

The launch of the new index reflects the strength of the maritime component of companies in the energy, offshore and shipping industries listed on SGX and underlines the exchange's efforts in enhancing this sector.

This is in line with Singapore's aim to be a leading international maritime centre. The new index provides investors and analysts with a benchmark tool to track and measure the performance of SGX-listed companies in the maritime industry that meets the indexing standards required by international investors.

### Shipping activities

Some of the initial constituents, which derive more than half their revenue from activities such as the manufacturing, ownership, operation and repairing of commercial and/or cargo vessels, include well-known local names such as ASL Marine and Neptune Orient Lines, as well as newer ones such as Mercator Lines (Singapore) and shipping trusts First Ship Lease Trust and Rickmers Maritime Trust.

Companies are classified using Industry Classification Benchmark, the leading sector

### FTSE ST MARITIME INDEX TOP 5 CONSTITUENTS

Rank	Constituent Name	Net Mkt Cap (SGDm)	Index Weight (%)
1	Neptune Orient Lines	1,700	23.64
2	Yangzijiang Shipbuilding Holdings	1,635	22.73
3	STX Pan Ocean	1,457	20.26
4	Cosco Corp	1,170	16.27
5	Rickmers Maritime	248	3.45
		6,210	86.35

Source: FTSE Group, data as at July 31 2009

### FTSE ST MARITIME INDEX PORTFOLIO CHARACTERISTICS

	FTSE ST Maritime Index
Number of Constituents	12
Net Market Cap (SGDm)	7,192
<b>Constituent Sizes:</b> (Net Market Cap SGDm)	
Average	599
Largest	1,700
Smallest	64
Median	215
Weight of Largest Constituent (%)	23.64
Top 5 Holdings (% Index Market Cap)	86.35

Source: FTSE Group, data as at July 31, 2009

classification system which enables companies in the index to be used by investors worldwide in peer-to-peer comparisons on a regional and global basis, leading to increased international understanding of Singapore's maritime sector.

The FTSE ST Maritime Index is based on FTSE ST All-Share Index and all constituents are subject to FTSE's globally recognised index methodology and eligibility criteria.

The index will be next reviewed in March 2010.

The new index's values will be displayed alongside the real-time, intra-day values of *The Straits Times* Index and other FTSE ST indices displayed at the following websites: [btstocks.asiaone.com/keyindices.html](http://btstocks.asiaone.com/keyindices.html), [straitstimes.com/stindex](http://straitstimes.com/stindex) and [www.sgx.com](http://www.sgx.com).

This article first appeared in *The Business Times*, September 1, 2009.

► Singapore is fully committed to advancing the IMO's mission of promoting safe, secure and efficient shipping on clean oceans.

From its humble entry as a member of IMO in 1966, and its subsequent entry into the IMO Council under Category C in 1993, Singapore has worked closely with the IMO and other IMO member States to develop various initiatives, such as the Co-operative Mechanism, to address the issues of safety, security and pollution control in key shipping lanes.

Since the launch of the Co-operative Mechanism that took place in Singapore in 2007, the IMO has made a significant commitment in implementing the Co-operative Mechanism, said the Director of the IMO Maritime Safety Division, Koji Sekimizu.

Speaking at the 2nd Co-operation Forum 2009 in October, he said that the historic IMO-Singapore meeting in 2007 paved the way for many subsequent initiatives under the Co-operative Mechanism. These include implementing various projects to enhance the Straits of Malacca and Singapore, promoting financial contributions, maintaining and replacing aids to navigation in the Straits of Malacca and Singapore.

### Growing contributions

Sekimizu's comment serves to highlight Singapore's modest but growing contributions to the global maritime agenda.

As a major maritime nation and the world's busiest port,

Singapore has always been fully committed to advancing safe, secure and efficient shipping on clean oceans.

Over the years, Singapore has been actively contributing to shaping the strategic direction of the IMO, and has since promoted several of the IMO's work programmes to help accomplish these objectives.

As both a major flag and port State, Singapore understands the multiple interests in international shipping and brings a unique perspective to IMO issues.

As a member State at the IMO, Singapore has also placed great emphasis on an inclusive approach to decision-making, and on ensuring that the various views and interests of member States are taken into account in the work of the IMO.

### Greater co-operation

The Co-operation Forum is an important platform to enhancing the safety, security and environmental protection of a key shipping lane in the Straits of Malacca and Singapore.

As one of the three main components of the Co-operative Mechanism, the Forum took centre stage when some 140 delegates from 29 countries and 12 organisations attended the MPA-organised event in October 2009.

Vigorous dialogue and debate took place at the Forum, with the littoral and key user States of the Straits sharing their perspectives on the Straits of Malacca and Singapore. The Forum also included for the ►

THE 2ND CO-OPERATION FORUM HELD IN SINGAPORE RECENTLY DEMONSTRATES THE COUNTRY'S GROWING COMMITMENT IN THE GLOBAL MARITIME AGENDA. SINGAPORE NAUTILUS LOOKS INTO THESE INITIATIVES.



# SINGAPORE COMMITS TO NAVIGATIONAL SAFETY



► first time, industry participation as well as two panel discussions on “navigational safety” and “environmental protection”, co-chaired by the littoral States and the Round Table of international shipping associations.

At the Forum, Australia, China, India, Greece, Japan and the US were formally recognised for their contributions to the Straits Projects, while the contributions or pledges of the United Arab Emirates, the Republic of Korea, Nippon Foundation, MENAS, and Malacca Strait Council to the Aids to Navigation Fund were also acknowledged. Joining the growing list of contributors, Germany also pledged US\$50,000 to the Co-operative Mechanism, while the European Commission pledged 400,000 – 500,000 euros to the Straits Projects. Japan also announced its interest in contributing to one of the Straits Projects.

Lam Yi Young, MPA Chief Executive, said: “Your participation in the Co-operation Forum is a clear indication of the importance that you [attendees] attach to the Straits of Malacca and Singapore, and the value you place on ensuring the safety of navigation and the protection of the marine environment.”

He added: “It provides a platform for all interested stakeholders – the littoral States, the key user States and other stakeholders of the Straits of Malacca and Singapore – to meet and

discuss issues of navigational safety and marine environment protection in the Straits.”

Affirming this statement, Singapore’s Minister for Transport and Second Minister for Foreign Affairs, Raymond Lim, said that there was “an increasing number of user States [who had requested] to present at this Forum. I find this readiness to share best-practices and the cross-fertilisation of ideas encouraging.”

#### Open dialogue

IMO’s Sekimizu said: “The importance of the Co-operation Forum cannot be over emphasised.”

“It provides an opportunity for dialogue and open discussion among the littoral States and the users [of the Straits] and forms an indispensable component of the Co-operative Mechanism for the Malacca and Singapore Straits, which was established as a main product of the IMO-sponsored meetings held in this region between 2005 and 2007 in cooperation with the governments of Indonesia, Malaysia and Singapore,” he explained.

The genesis of the Co-operative Mechanism can be traced back to the aftermath of the 9/11 terrorism attacks. In the light of heightened security concerns, the IMO recognised the need to enhance the safety, security and environmental protection of key shipping lanes around the world, and mooted the “Protection ►

**As a major maritime nation and the world’s busiest port, Singapore has always been fully committed to advancing safe, secure and efficient shipping on clean oceans. Over the years, Singapore has been actively contributing to shaping the strategic direction of the IMO, and has since promoted several IMO’s work programmes to help accomplish these objectives.**





## IMO FUND RAISES STRAITS CO-OPERATION

Together with the IMO, Indonesia, Malaysia and Singapore recently concluded a Joint Technical Arrangement (JTA) with an initial US\$1 million seed funding from Greece.

This effort will support cooperation towards enhancing safety and marine environment protection in the Straits of Malacca and Singapore.

The JTA marks yet another major step forward in the implementation of the United Nations Convention on the Law of the Sea (UNCLOS). The latter provides for international co-operation in the maintenance of Straits used for international navigation since the establishment of the historic Co-operative Mechanism in 2007.

The Straits of Malacca currently remains one of the busiest and most important shipping lanes in the world.

"The challenge is to sustain interest and to keep the momentum going; not only to entrench progress but also to encourage further participation and contributions from existing as well as new stakeholders," said Singapore's

Transport Minister and Second Minister for Foreign Affairs Raymond Lim.

The Minister also stressed that this latest effort was critical "as a third of the world's trade and half of its oil passed through the Straits. The Co-operative Mechanism is timely to promote and facilitate international co-operation in this important waterway and that the institutionalisation of the IMO Trust Fund is a very welcome development".

Minister Lim presented letters of recognition to the heads of delegations of Australia, China, Greece, India, Japan and the United States of America. These countries were recognised for their active contributions towards implementing the six initial projects under the Co-operative Mechanism:

- Removal of Wrecks in the Straits
- Enhancing Preparedness and Response Capability against Hazardous and Noxious Substances (HNS) incidents
- Demonstration Trial of AIS Class B Transponders

- Wind, Tide and Current Measurement System
- Replacement and Maintenance of Navigation Aids
- Replacement of Navigation Aids damaged by Tsunami off Sumatra

The number of countries participating in the projects has grown, with India recently contributing financial aid to two of the projects. Progress has been achieved in various projects with the completion of the demonstration trial in the AIS Class B project and the conducting of training visits under the hazardous-substances project.

Looking beyond the Co-operation Forum and Straits projects, Japan, the United Arab Emirates and organisations such as the Nippon Foundation, Malacca Strait Council, and the Middle East Navigation Aids Service have also made significant contributions to the Aids to Navigation Fund.

Thus, the IMO Straits of Malacca and Singapore Trust Fund complements the Aids to Navigation Fund.

## BROADENING CAPACITY-BUILDING EFFORTS

Singapore is looking to expand the range of courses conducted for IMO Member States as part of its ongoing contribution to the IMO Third Country Training Programme (TCTP). The most recent addition to the sleuth of courses already conducted on a regular basis will be a workshop on the Voluntary IMO Member State Audit Scheme (VIMSAS). This will be the first of its kind that is designed to help maritime administrations with the audit. The course aims to educate, train and better equip participants on how to prepare for the audit.

"Having successfully undergone VIMSAS, the Voluntary IMO Member State Audit Scheme last year, we feel that we are able to share our

experiences with other IMO Member States in preparing and conducting VIMSAS. We hope that our efforts would help promote harmonised and consistent implementation of IMO standards, which is key to ensuring safe, secure and efficient shipping." said Mr Cheong Keng Soon, Director (Shipping), Maritime and Port Authority of Singapore.

Apart from providing such new courses, Singapore is also exploring the possibility of extending the scope of the MOU to include IMO Member States from Latin America. This was announced to IMO Member States at the 102nd session of the IMO Council held in June 2009. Under the current Memorandum of Understanding (MOU)

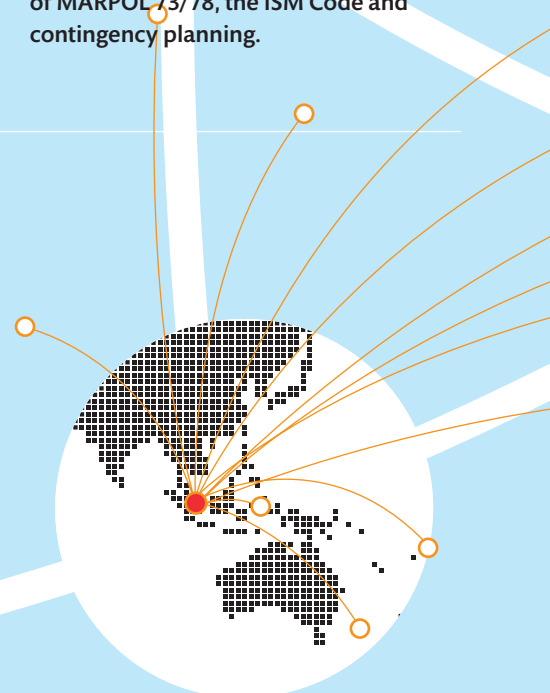
signed in 1998 between Singapore and the IMO, Singapore has been providing technical assistance to IMO Member States from the Asia Pacific and African regions. However, this could change when Singapore extends its efforts to Latin America States that are interested in learning from Singapore's experiences in implementing conventions and instruments that ensure safety of navigation and protection of the marine environment.

To date, Singapore has organised more than 44 such courses for 1,125 participants from 44 countries. These include courses on port state control, flag state implementation, implementation of MARPOL 73/78, the ISM Code and contingency planning.

## THE SINGAPORE-IMO LINK

Apart from its collaboration on the Co-operation Forum front, Singapore's efforts to cooperate with the IMO include:

- Serving as the Chairman of the IMO Council between 2001 and 2003
- Chairing the Sub-Committee on Bulk Liquids and Gases (BLG) from 2001 to 2009
- Chairing the Sub-Committee on Flag State Implementation (FSI) from 2009
- Serving as Vice-Chairman of the Marine Environment Protection Committee (MEPC) from 1998 to 1999
- Serving as the Vice-Chairman of the Sub-Committee on Standards of Training and Watchkeeping (STW) from 1999-2002
- Participating actively in the formulation of the IMO Strategic Plan which sets out the strategic directions for the IMO
- Campaigning actively for funds for the IMO's Integrated Technical Co-operation Programme (ITCP) in our capacity as one of the major contributors to the IMO budget
- Providing technical assistance to developing IMO member States in Africa, the Middle East and the Asia Pacific through a Third Country Training Programme (TCTP) together with the IMO to over 1,125 participants from 44 IMO member States.



**The Co-operative Mechanism is timely to promote and facilitate international co-operation in this important waterway and that the institutionalisation of the IMO Trust Fund is a very welcome development**

Raymond Lim, Transport Minister and  
Second Minister for Foreign Affairs

of Vital Shipping Lanes” initiative in April 2004.

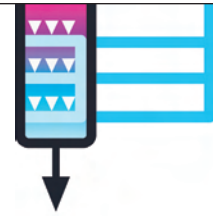
What followed was a series of IMO-sponsored meetings on the Straits of Malacca and Singapore, given the strategic importance of the Straits in international shipping. Indonesia hosted the inaugural meeting in Jakarta in September 2005, with Malaysia following

up next with a meeting in Kuala Lumpur in September 2006. The Singapore meeting held in September 2007 was the final meeting in the series, launching the Co-operative Mechanism.

The Co-operative Mechanism was a ground-breaking initiative and historic milestone for the international maritime community, particularly in the implementation of Article 43 of the United Nations Convention on the Law of the Sea (UNCLOS). Article 43 provides for co-operation in Straits used for international navigation, such as the Malacca and Singapore Straits, and the Co-operative Mechanism is the first concrete realisation of the spirit and intent of Article 43.

The IMO has continued to play an instrumental role in the Co-operative Mechanism. The IMO actively participated in the launches of the three components of the Co-operative Mechanism in 2008. At the Forum, a Joint Technical Arrangement was also concluded by the three littoral States and the IMO on the utilisation of the IMO Malacca and Singapore Straits Trust Fund. (See side story on IMO Fund). The Fund has been set up by the IMO as a complement to the Aids to Navigation Fund to support the Straits Projects identified by the littoral States. The IMO Fund currently administers US\$1 million in funding contributed by Greece.





# SINGAPORE

PLAYING ITS ROLE IN PROTECTING OUR OCEANS, ECOSPEC'S NEWS-BREAKING

# MAKES

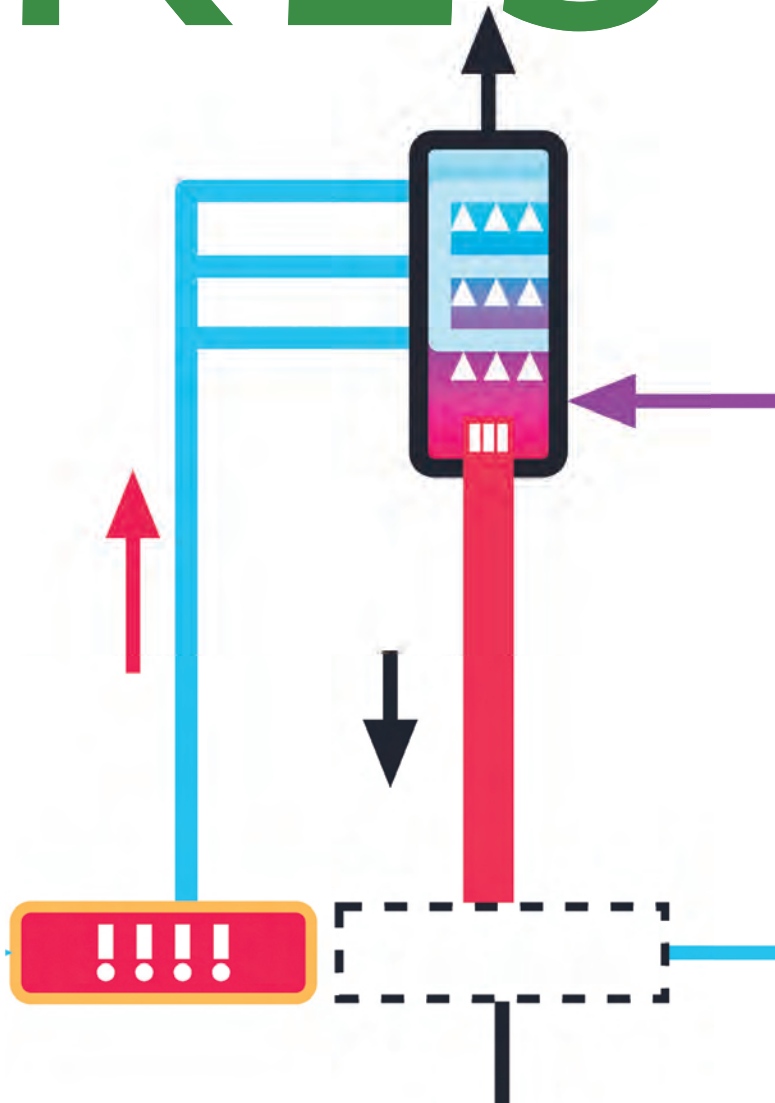
► Managing director and founder Chew Hwee Hong of Ecospec Global Technology Pte Ltd, a Singapore-based research and technology company specialising in advanced water and oil treatment technologies, has much to smile about these days.

The company had the International Maritime Organization (IMO) and the shipping industry all abuzz recently when it launched a green technology known as CSNOx, which aims to meet

current IMO regulations restricting nitrogen oxide and sulphur oxide emissions. And, the most exciting news is that it greatly reduces carbon dioxide emissions by about 75 per cent.

Industry experts say that even a much lower reduction would be impressive, given that shipping currently has no way of taking carbon dioxide out of engine exhaust.

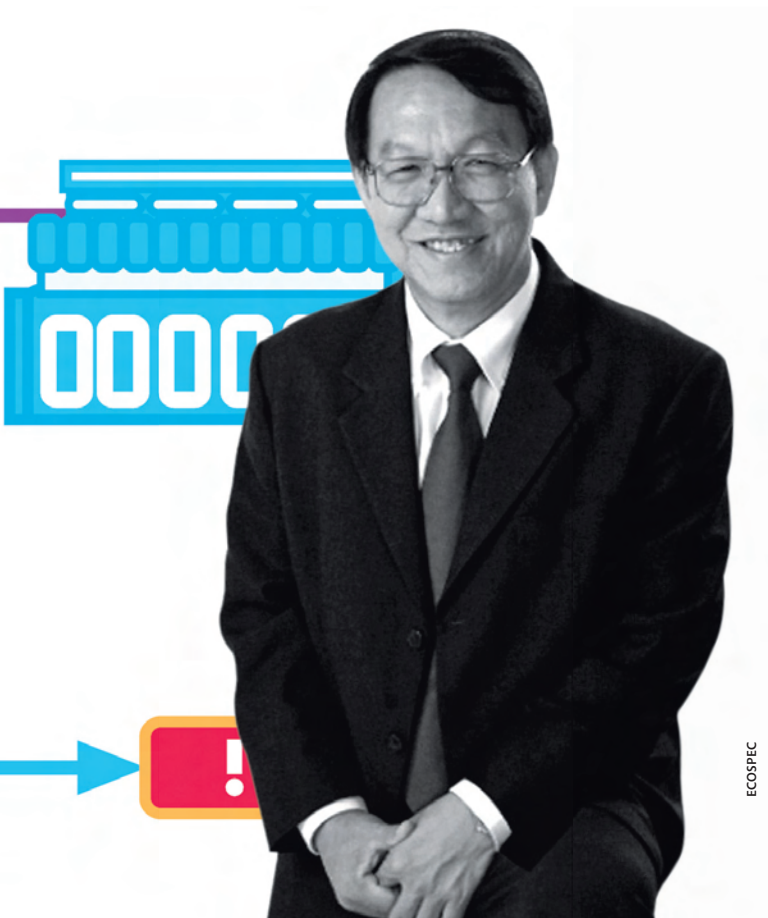
Ships carry about 90 per cent of global trade. Until recently, the demand for coal, cars and electronics has



# INVENTION

EMISSIONS SCRUBBING SYSTEM MARKS PRESENCE IN THE GREEN INDUSTRY.

# WAVES



been so high that there has been little effort to rein in the growth of polluting emissions from ships.

But pressure is growing in the United Nations and from the European Union to make ships more efficient and their smokestacks more environmentally friendly.

Ecospec says it has invented and tested a patented method that removes planet-warming carbon dioxide and nitrogen oxides, sulphur dioxide, which causes acid rain, and soot from ship exhausts.

ECOSPEC

The process, which uses very alkaline sea water sprayed into the exhaust funnel to scrub out the gases and soot, has already been tested on a tanker and earned the backing of the American Bureau of Shipping (ABS).

"This is a major breakthrough for the global shipping industry in general and for Ecospec, a home-grown Singapore company," says Chew. "With the marine industry going green, Ecospec is proud to pioneer an all-in-one eco-friendly technology that is

set to change the way the industry operates.”

**Technology pioneer**

Since 2001, Ecospec has established itself as a pioneer and global market leader in advanced non-chemical water and oil treatment technologies, with numerous technology patents filed or granted to date.

The Group’s research and development capabilities cover non-chemical water and oil treatment, and application development in Singapore, plus electronic and hardware.

The company was recently awarded The Environment Protection Award at the Seatrade Asia Awards 2009, held in Pudong, Shanghai.

Firm in its belief in protecting the marine environment, the company attended the Nordic Climate Solutions 2009 in Copenhagen this September, where it presented the CSNOx technology.

**Singapore invention**

So why is this important? By cutting down greenhouse gas and other pollutants

**This is a major breakthrough for the global shipping industry in general and for Ecospec, a home-grown Singapore company. With the marine industry going green, Ecospec is proud to pioneer an all-in-one eco-friendly technology that is set to change the way the industry operates.**

Chew Hwee Hong, Managing Director, Ecospec

**HOW CSNOx WORKS**

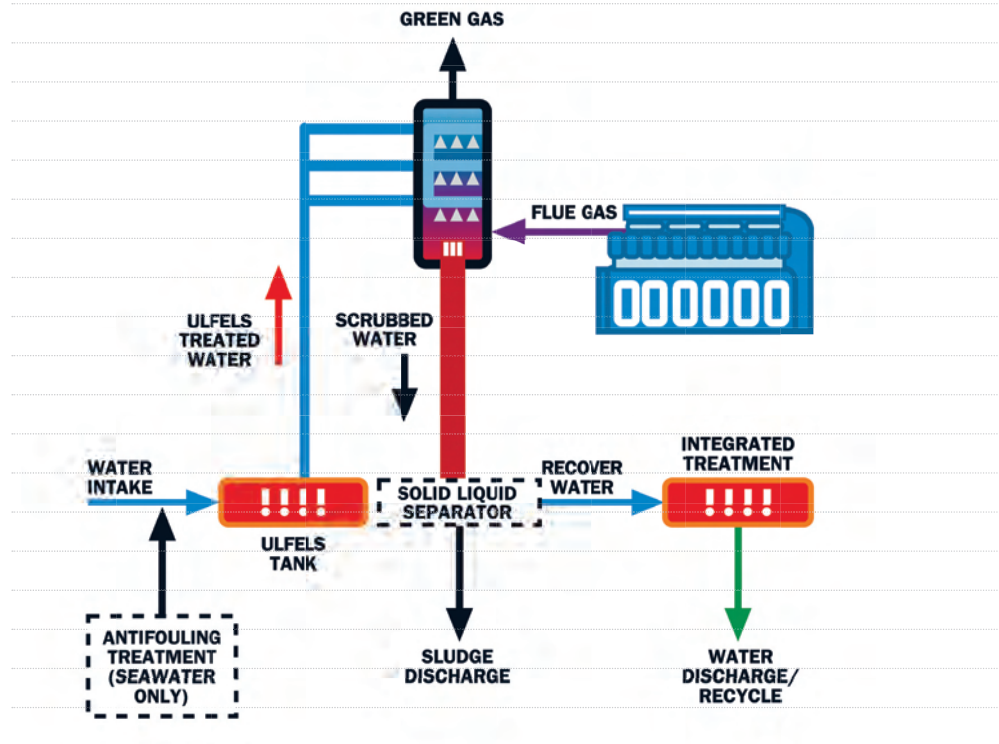
With Ecospec’s CSNOx, an electrical method is used to convert atmospheric carbon dioxide into bicarbonates in water, which are discharged back into the ocean, while sulphur and nitrogen oxides are converted into sulphate and nitrate which are naturally present in seawater.

Particulate matter after scrubbing is removed and separated as solid waste. The device effectively removes these greenhouse gases and pollutants all in one process and in one single system.

The scrubbing process carried out by Ecospec’s system is achieved at a net carbon credit gain without any net increase in carbon dioxide to the atmosphere or acidifying the ocean. There is also no other secondary pollutants discharged into the sea.

Ecospec has successfully tested its system on board an ocean-going supertanker and the results of the test showed that the device had 92.9 per cent, 82.2 per cent and 74.4 per cent efficiency

CSNOx for Onshore



emitted by ships, Ecospec's CSNOx technology is helping the shipping industry meet increasing pressure by IMO's Marine Environment Protection Committee to cut carbon dioxide emissions.

Such emissions from shipping are double those of aviation and are increasing at an alarming rate which will have a serious impact on global warming, according to research by the industry and European academics.

Many new ships have engines designed to emit much lower amounts of nitrous oxide

and nitrogen dioxide gases, but thousands of older vessels do not, at least not without costly retro-fitting.

An IMO study of greenhouse gas emissions has estimated that emissions from the global fleet would increase dramatically in the next 20 years as globalisation leads to increased demand for bigger, faster ships. Without action the IMO predicts that by 2020, emissions from ships would increase up to 72 per cent.

### MPA provides co-funding

Through its Maritime Innovation and Technology

(MINT) Fund, the Maritime and Port Authority of Singapore (MPA) is providing S\$2 million to co-fund a project for the test-bedding and type approval of Ecospec's CSNOx system.

The S\$100 million MINT Fund was set up in 2003 to support research, development and test-bedding of maritime technologies by universities, research institutes and companies in Singapore.

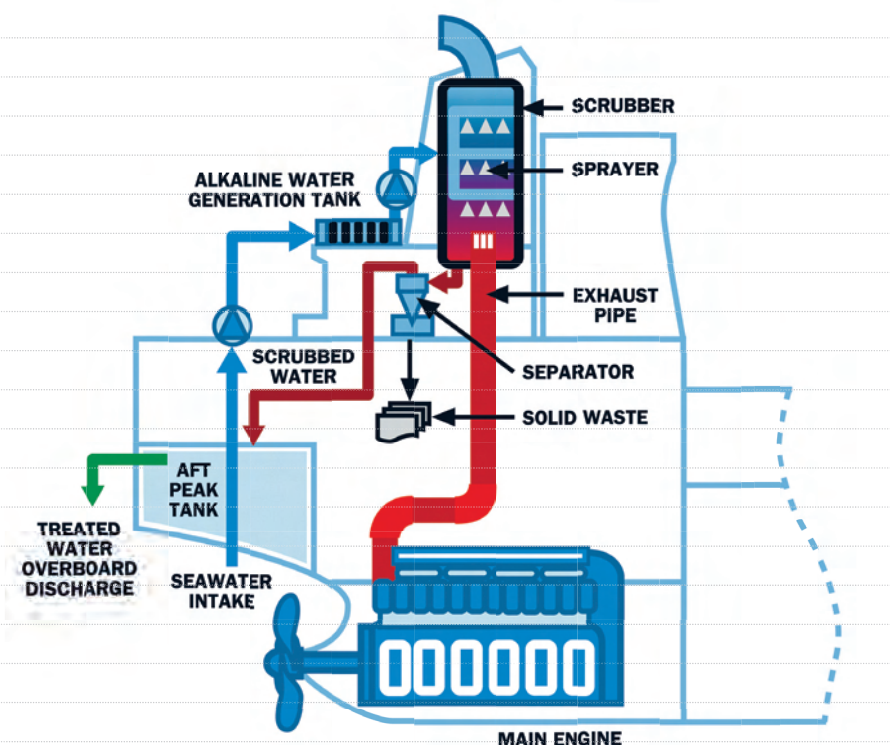
Two of the research and development areas under the MINT Fund are clean energy and environment

technology. The test-bedding project comes under these areas.

Chew said: "The funding helps support a priceless opportunity for a 'completely developed in Singapore' breakthrough technology to penetrate the global maritime industry. Ecospec shares the same aim as MPA, which is to enable the maritime industry to go green via commercially-viable marine emission-reduction technology."

This Singapore invention is definitely creating its own waves.

CSNOx for Marine



for scrubbing sulphur oxide, nitrogen oxide and carbon dioxide respectively.

Ecospec's Chew Hwee Hong said that CSNOx is also highly cost-effective and due to its compact design, may be easily installed on ships.

CSNOx is likely to appeal to ship owners as the system costs only a fraction of what is currently available in the market. Typically, a container ship with 50 MW power will need to spend between S\$5 million and S\$10 million for a solution that removes other pollutants.

According to Chew, the market potential for its system is substantial, as the latest *Clarkson Report* lists the world cargo fleet at about 55,500 ships, while ABS has about 10,600 ships in class. Chew says at present there is no commercially available carbon dioxide reduction product for the shipping/marine industry.

# NAVIGATING

MPA CHIEF HYDROGRAPHER, PARRY OEI, TELLS US WHY RISING AWARENESS FOR MARINE ENVIRONMENT PROTECTION HIGHLIGHTS THE NEED TO DEVELOP AND IMPLEMENT A 'GREEN' ELECTRONIC CHART DISPLAY AND INFORMATION SYSTEM.

# TO A GREEN FUTURE







On October 15, 1997, the oil tanker Evoikos collided with another tanker, the Orapin Global, in the Singapore Strait.

The Evoikos suffered severe damage to three of its cargo tanks, resulting in a spill of 28,500 tonnes of heavy marine fuel oil while the Orapin Global suffered some damage to its bow.

The Maritime and Port Authority of Singapore's marine emergency plan was activated. Sixteen ministries and agencies, oil terminals, salvage companies and oil spill response companies responded immediately with some 80 crafts and 650 personnel deployed to combat the oil spill.

The task was made more challenging as the port of Singapore and its approaches had to remain open.

An integrated picture of resource deployment, sensitive marine areas, and general navigation towards using the port and transiting the Straits was constructed. This proved to be instrumental in the successful containment of the oil spill. As a result, commercial losses were limited and the surrounding marine environment was also spared from destruction.

Such an integrated information base could be provided, particularly at sea, through an environmentally-friendly, or 'green' electronic chart display and information system (ECDIS).

### Benefits of ECDIS

Protecting the marine environment is a tall order. Issues such as managing migratory marine species, devastation of coastlines after maritime incidents, and the impact of rising sea levels must be taken into account.

By introducing a technologically advanced navigational tool such as the ECDIS, such systems can easily be expanded from a strictly navigational purpose to provide a more direct benefit to the protection and monitoring of the marine environment. A 'green' ECDIS can immediately display environmentally vulnerable areas such as marine parks, recreational beaches and desalination plants.

Because the information will be standardised for use in ECDIS, it is equally accessible to the relevant shore-based authorities and vessel owners, who can then be proactive, rather than reactive, towards a developing situation.

Immediate action can then be taken by issuing advance warning to vulnerable areas, erecting oil booms based on predicted movement of the oil spill or towing a vessel to another less sensitive location to lessen any possible impact to the environment.

Hydrographic offices can also be consulted to recommend alternative shipping routes, based on underlying hydrographic information. "Where accidents have occurred, a 'green' ECDIS can be a significant mitigating factor in minimising damage to the marine environment," says Oei.

Another example of how a 'green' ECDIS can be used directly to benefit vessels, is in support of the forthcoming IMO Convention on Ballast Water. Vessels equipped with a 'green' ECDIS taking in ballast water can be provided with the limits of "clean water", which changes according to the season and the tidal flow. This will eliminate the need for the vessel to carry out an exchange of ballast water en route to the next port.

#### Relevant information

The various ECDIS-based solutions, such as dynamic tidal and weather information, and emergency routing information could be integrated with the baseline chart information to function as Marine Information Overlays (MIOs).

MIOs would provide relevant information in suitable formats for use at sea with shipboard ECDIS and ashore with maritime safety and environmental monitoring technologies using geographical information system.

Some of the layers to be included for depiction are:

- sensitive habitats that are threatened by pollution or physical damage from

marine transportation activities

- marine protected areas, user regimes, and related regulatory and/or sensitivity data
- endangered species habitat
- key habitat sensitivity information as related to oil spill contingency plans of the States bordering the Straits
- other marine environmental protection best practices/ stewardship information
- key technical and regulatory information as related to the International Convention for the Prevention of Pollution from Ships (MARPOL), the OPRC Convention and the OPRC-HNS Protocol, Ballast Water Management Convention 2004, Antifouling System Convention, and related resolutions, codes and guidelines

#### Facing challenges

One of the challenges involved in developing a 'green' ECDIS is to convince hydrographic offices to be more proactive in providing useful information about the environment.

Though focused on charting information for navigation safety, hydrographic offices are suitably equipped and are appropriate technical authorities to embark on a transition that would lead to a 'green' ECDIS.

Important information shown on nautical charts comes from port authorities,

meteorological services, land planning authorities and marine facilities operators; but there are challenges involved in overlapping data and jurisdictions. Oei comments: "Migratory fishes and oil spills are not restricted to national boundaries, thus, such trans-boundary sensitivities need to be resolved in advance."

There is also a need for the marine industry to balance commercial shipping and maritime development interests with protecting the environment.

The introduction of a 'green' ECDIS is timely, given the impending mandatory carriage requirements for

**By introducing a technologically advanced navigational tool such as the ECDIS, such systems can easily be expanded from a strictly navigational purpose to provide a more direct benefit to the protection and monitoring of the marine environment. A 'green' ECDIS can immediately display environmentally vulnerable areas such as marine parks, recreational beaches and desalination plants.**

ECDIS. By 2018, almost all vessels engaged on international voyages will be equipped with ECDIS.

It seems reasonable that a 'green' ECDIS can easily be extended to other user groups such as research institutions, fisheries and oceanographers. This enhanced ECDIS can be used to improve navigation safety and protect the marine environment.

"There is a need to change the attitudes of mankind towards the protection of the marine environment. A 'green' ECDIS can help to achieve a cleaner marine environment for our future generations," concludes Oei.

## GLOBAL NETWORK

The International Hydrographic Organization (IHO) is an intergovernmental consultative and technical organisation that was established in 1921 to support navigation safety and marine environment protection. Hydrographic offices around the world are under the guidance of the IHO.

Hydrographic offices have traditionally played a significant role in enhancing navigational safety mainly through publishing nautical charts.

Advanced navigational tools such as ECDIS can easily be transformed into a dynamic system by introducing time variable data and information such as tidal levels, current, as well as wind and wave information.

In addition, a 'green' ECDIS is one where such a system is integrated with additional information such as the location of migratory fish species, seasonal changes affecting seabed topography or areas of clean water for ballast water intake.



# PEOPLE & PARTNERSHIP

MPA'S CHIEF EXECUTIVE **LAM YI YOUNG** SHARES HIS TAKE ON MARITIME SINGAPORE AND MPA'S TWIN STRATEGY OF PEOPLE AND PARTNERSHIP.

▸ Situated at the crossroad of the East and West, Singapore, a small island state of 710 square kilometres and a population of 4.98 million, has long been associated with the sea and maritime trade. What started as a small entrepot port some 190 years ago is now the world's top port in terms of shipping tonnage, container throughput and bunker sales.

Maritime Singapore is, however, much more than just the Port of Singapore. Singapore is also a major flag state, with the Singapore Registry of Ships being ranked among the top ten registries in the world.

Maritime Singapore also hosts a vibrant maritime ecosystem, with well over 5,000 companies, employing more than 100,000 people and contributing to about seven per cent of Singapore's Gross Domestic Product.

Home to more than 100 of the world's top shipping

groups, a rich diversity of maritime products and services like shipping finance, ship broking, marine insurance and maritime law can be found in Singapore. Singapore is also a top global player in the offshore and marine engineering industry and is building itself up as a centre for maritime arbitration.

Singapore also plays host to the headquarters or representative offices of international maritime organisations and associations. Offices of the Baltic Exchange, Asian Shipowners' Forum, International Bunker Industry Association, BIMCO, International Association of Independent Tanker Owners (INTERTANKO) and the ReCAAP Information Sharing Centre can all be found in Singapore.

As the nation's maritime administrator, the Maritime and Port Authority of Singapore

(MPA) is tasked with promoting and developing Singapore as a premier global hub port and international maritime centre. MPA approaches this task with the twin strategy of People and Partnership.

## People

As a small island state with no natural resources, quality people are central to Singapore's competitive advantage. MPA thus places great emphasis on the development of human capital and strives to ensure that Singapore has a ready pool of talent with the right skills to enable the maritime ecosystem to flourish.

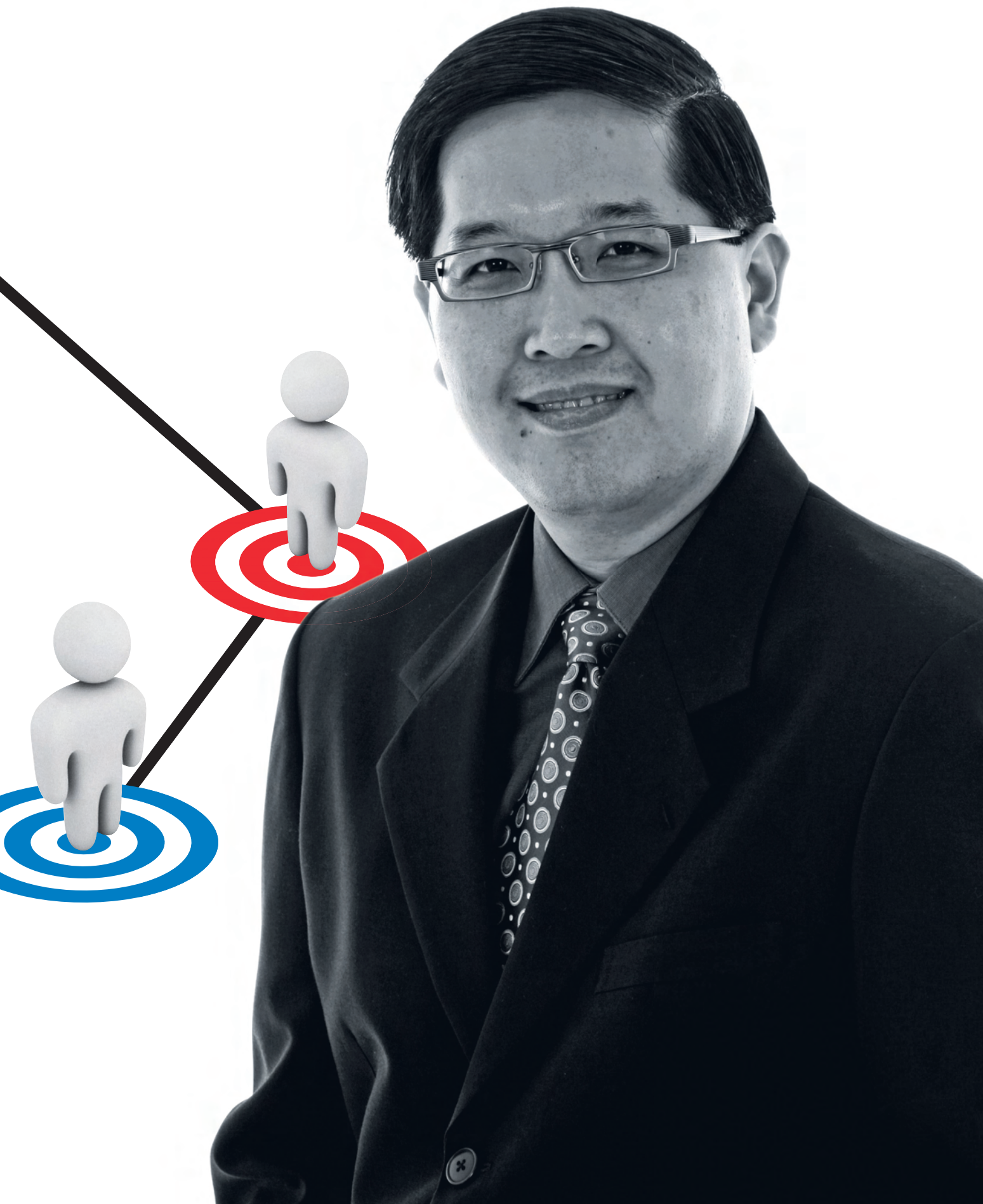
The development of human capital for Maritime Singapore starts with basic pre-employment training, which ranges from maritime diploma courses at the Singapore Maritime Academy to Bachelors and Masters

in Maritime Studies at the Nanyang Technological University. These courses help provide a steady stream of young people for seafaring and shore-based jobs.

To ensure that the maritime ecosystem would be able to get its fair share of talents, MPA works with companies, the seafarers' unions and the Singapore Maritime Foundation to offer scholarships and sponsorships to top students taking up maritime-related studies.

Those who are already part of the maritime ecosystem are not forgotten. MPA has in place a S\$50 million Maritime Cluster Fund (MCF) to support continuing education and training and the nurturing of talents in the maritime ecosystem.

Companies can tap on the MCF to defray part of the cost of sending their people for training courses and overseas



training attachments, as well as part of the cost of bringing foreign experts into Singapore to conduct training.

The MCF also provides support for companies who want to send their people for postgraduate studies to enhance their skills and knowledge. Undergraduates of any discipline seeking industrial attachments in the maritime ecosystem can also benefit from an attachment allowance from the MCF, above what they would receive from the companies.

An example of a programme supported by the MCF is the BIMCO Asia Shipping School (BASS) conducted in Singapore in 2006. Tailored for the Asian market from the popular BIMCO Summer Shipping School in Copenhagen, participants were provided with in-depth knowledge on topics such as Voyage Chartering and Time Chartering and a visit to a simulation centre housing engine room and ship handling simulators.

Mindful that companies have to watch their budgets more closely in the midst of the current global economic downturn, MPA has enhanced its efforts in supporting human capital development.

Besides tapping on the various training and development initiatives rolled out by the Singapore Government to help companies during the downturn, MPA launched the Graduate Attachment Programme (GAP) in April this year. GAP is a

scheme that provides fresh graduates with attachments and on-the-job training opportunities in maritime companies as a way of building up a pool of ready talent that companies can tap on when the economy recovers.

### Partnership

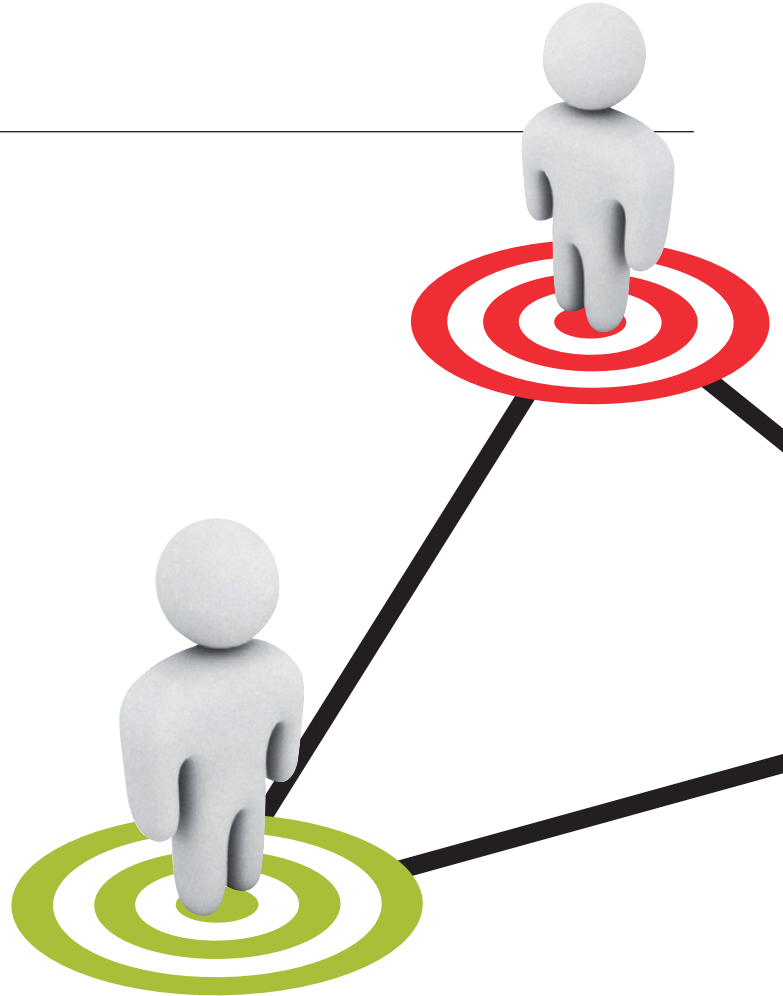
As part of its efforts to promote and develop Singapore as a premier global hub port and international maritime centre, MPA works in close partnership with a diverse group of stakeholders in the maritime ecosystem. These include companies and industry associations, seafarers' unions, academic and research institutions and international partners.

### Partnership with industry

MPA works closely with the industry, both with companies directly as well as through industry associations, to provide a conducive business environment and to facilitate business and operations in Singapore.

Key partners like the Singapore Shipping Association (SSA) and the Association of Singapore Marine Industries (ASMI) provide MPA with valuable feedback and also work with MPA on key initiatives like the iconic Singapore Maritime Week. Held annually in April, the Singapore Maritime Week brings together the international maritime community for a week of networking, sharing, learning and exchanges.

MPA also partners the industry and institutes of higher learning on the



Maritime Outreach Network (MaritimeONE) initiative. Launched in 2007 and led by the Singapore Maritime Foundation, MaritimeONE offers maritime scholarships, organises student outreach activities and hosts networking receptions for students and maritime executives. It also operates an online job portal ([www.maritimecareers.com.sg](http://www.maritimecareers.com.sg)) to bring together job seekers and maritime employers.

MPA actively engages individual maritime companies to understand and address their concerns. Through its Maritime Cluster Fund (MCF) and its Maritime Innovation & Technology (MINT) Fund, MPA works with companies to support their business expansion and research and development plans.

MPA and the Infocomm Development Authority of Singapore has in place an [InfoComm@SeaPort](mailto:InfoComm@SeaPort)

Programme to support the development of information technologies for maritime application, MPA is also sensitive to the needs of companies during the global economic downturn. To help companies during these challenging times, MPA introduced various measures like port dues rebates costing S\$28 million.

### Partnership with seafarers' unions

MPA is part of the strong tripartite partnership between the Government, unions and employers. MPA works closely with the Singapore Maritime Officers' Union and the Singapore Organisation of Seamen to enhance the well-being of seafarers and to ensure harmonious labour relations.

MPA also works closely with the unions and companies on human capital development. One example



**MPA's twin strategy of People and Partnership has helped to foster a unique environment that is both pro-business and pro-worker, and which has enabled the strong growth of Maritime Singapore. MPA is pressing ahead with its efforts in developing people and in working in close partnership with the maritime ecosystem to seize opportunities and to position for the upturn.**

of the close partnership is the Tripartite Maritime Scholarship Scheme jointly funded by MPA, maritime companies and the unions.

#### **Partnership with academic and research institutions**

To enhance maritime education and training as well as to promote industry-relevant maritime research and development in Singapore, MPA works in partnership with various academic and research institutions.

These institutions include the Singapore Maritime Academy, Nanyang Technological University, National University of Singapore, Centre for Maritime Studies, Centre for Offshore Research and Engineering, Tropical Marine Science Institute, Maritime Research Institute and Institute for Environmental Science and Engineering. MPA also facilitates collaboration in maritime

research and development between Singapore institutions and their overseas counterparts.

#### **Partnership on the international front**

As a responsible member of the international community and an IMO Council member, Singapore plays an active role in the International Maritime Organization (IMO).

Through the Singapore-IMO Third Country Training Programme (TCTP) launched in 1998, Singapore has worked in partnership with the IMO on capacity-building programmes that have benefited more than 1,000 participants from 43 countries. These have included training for port state control, flag state implementation, oil spill contingency planning, simulator instructors and VIMSAS (Voluntary IMO Member State Audit Scheme) auditors.

As one of the littoral States of the Straits of Malacca and Singapore, Singapore worked closely with Indonesia, Malaysia and the IMO to launch the Co-operative Mechanism to enhance navigation safety and marine environment protection in the Straits of Malacca and Singapore in 2007.

The Co-operative Mechanism represents a concrete realisation of Article 43 of the United Nations Convention on the Law of the Sea (UNCLOS), which provides for the co-operation between user states and states bordering straits used for international navigation in the maintenance of navigation safety and the prevention, reduction and control of pollution from ships.

Singapore also works in partnership with the other contracting parties of the Regional Co-operation Agreement on Combating

Piracy and Armed Robbery against Ships in Asia (ReCAAP) to address the scourge of piracy as well as plays host to the ReCAAP Information Sharing Centre.

#### **People & partnership together**

Working together, MPA's twin strategy of People and Partnership has helped to foster a unique environment that is *pro-business* and *pro-worker*, and which has enabled the strong growth of Maritime Singapore.

Despite the global economic downturn, MPA is pressing ahead with its efforts in developing people and in working in close partnership with the maritime ecosystem to seize opportunities and to position for the upturn.

# PURSUIT OF INSPIRATION

PROFESSOR NILANJEN SEN IS THE DRIVING FORCE BEHIND THE EXECUTIVE MBA PROGRAMME IN SHIPPING, OFFSHORE AND FINANCE AT NANYANG BUSINESS SCHOOL. HE SHARES WITH *SINGAPORE NAUTILUS* HOW TEACHING IS BOTH ABOUT INSTILLING DISCIPLINE AND APPLYING RELEVANCE TO THE REAL WORLD.





While studying economics in Calcutta's prestigious Jadavpur University, Nilanjen Sen was determined to complete his education with a PhD in Economics. So, the moment he received his economics degree, he set his sights for the United States.

He tells *Singapore Nautilus* that the first step he did then was to apply for scholarships in the US. "During the 1980s, many of the Indian students who went to the US pursued engineering degrees. However, I applied for and was accepted at Virginia Tech to read Masters

in Economics. Later, I moved to Arizona State University in the early 1990s," he adds.

During this period, it was clear in his mind that his academic pursuits should continue to be in sync with the real world. To achieve this, he began to pursue opportunities in several academic institutions which have links to corporate businesses.

He spent the next six years in Arizona State University as a permanent faculty member. It was not long before he started to look for a visiting position in several countries. He had considered the University of Melbourne, the University in Dunedin and the Nanyang Business School.

### Settling in Singapore

With a twinkle in his eye, he says that his decision to move to Singapore was helped by the fact that Singapore was seen as a major business hub in Asia. By settling in Singapore, he hoped that it would help him achieve his goal of applying what he had learnt in his academic years to the business world.

With a charming smile, he says: "The position in the Nanyang Business School was initially for one year. It was great to live on campus and settling down was easy with a furnished

## I see teaching and researching as very complementary fields. As a professional in a business school, you can't separate yourself from the real world.

apartment and a great public transportation system.

"I brought my wife and kids along," he says, adding that his daughter and son were then 10 and three years old respectively.

"We enjoyed our stay in Singapore. It is not difficult to fall in love with multi-cultural Singapore, which has a world-class infrastructure, a safe environment, and last but not least, it is the food capital of Asia."

In his first stint here, he taught in the undergraduate and the MBA programmes. Time flew, and before long, it was time to return to Arizona in December 1999.

He came back in the summer of 2000 for a term. "I couldn't seem to stay away so I took a year's leave of absence and returned to Singapore again in 2001. In 2005, I finally quit my job in the US and moved to Singapore," he chuckles; a decision that he has never looked back on.

### Career achievements

In Singapore, Sen rose up the ranks to become the

Associate Dean (Nanyang Executive Education) and Associate Professor of Banking and Finance at the Nanyang Business School.

In this role, Sen was able to perform as both a teacher as well as a researcher.

"Teaching is about combining the 'rigour' of thought and the 'relevance' of the real world and delivering lessons vibrantly in classrooms," he says. "When you throw 'passion' into the mix, you end up with a winning formula."

This winning formula has led him to clinch the Teacher of the Year and Researcher of the Year Awards at the Nanyang Business School.

"I see teaching and researching as very complementary fields. As a professional in a business school, you can't separate yourself from the real world.

### Maritime programme

It is this passion that led him to work with the Maritime and Port Authority of Singapore in the School's Executive MBA programme in Shipping, Offshore and

Finance. "They (MPA) have given great support to our programme," he says.

Under the stewardship of Sen, the Executive MBA was launched in 2007. This programme has its roots in the 10-year affiliation between the Oslo-based BI Norwegian School of Management and the Singapore-based Nanyang Business School, Nanyang Technological University.

"It seemed natural that Norway and Singapore develop an Executive MBA that would leverage off this expertise," he says.

Norway and Singapore have deeply rooted maritime sectors and expertise. Both countries are also located in important shipping crossroads, and play host to a rich gamut of companies servicing this sector, he explains.

His affiliations with Professor Torger Reve and Professor Peter Lorange helped in this regard. Reve was the past president of BI and until recently, a member of the R&D Council of MPA. Lorange was the past president of both Switzerland's International Institute for Management Development and BI and also holds a position at the Wharton School, University of Pennsylvania and at the Sloan School of Management (MIT).

"Being a ship owner himself, Lorange knew the trade well. He was able to tap on his own experience and brought with him a practical perspective which helped shape the development of the curriculum," he adds.

### Strategic approach

Sen believed that taking a modular approach was the way to go. It meant that participants return every quarter and spend 15 days at a stretch with the school.

With this strategy, the first course was up and running, led by an experienced group of executives with an average of 17 years' experience among the first batch of 18 participants.

"We started with a small group because we wanted to ensure that the programme was professionally oriented and designed to give the participants an understanding of the key drivers, management challenges and different strategies in the shipping and offshore industry," he explains. "The course combined the latest in research and theory in a practical oriented hands-on approach."

Sen's current focus is to build the next class of 20 students for the second batch which kicks off in January 2010.

"Our current goal is really to focus on building the brand and maintaining the quality of the programme and we hope to register a longer term enrolment of 30 to 40 students a year," he adds.

Beyond this, Sen also wants to explore new alliances for the school, some of which are likely to bear fruit in the near future. He singles out the MPA and says that he is "looking forward to having a greater involvement with them in the future".

# SINGAPORE'S HIGH BUNKERING STANDARDS

OUR REPUTATION FOR INTEGRITY IN THE BUNKERING SUPPLY CHAIN  
IS KEY TO THE SUCCESS OF THE S\$23 BILLION BUSINESS.

► The news that Singapore will retain its No 1 position as the world's preferred bunkering port, despite the global slowdown in trade, may not have come as a surprise. Yet, it is something that could not have been taken for granted.

That bunkering volumes could record 3 per cent growth during a period of

recession and contraction is in itself noteworthy. The industry stakeholders and the Maritime and Port Authority of Singapore can take a bow. They helped make it happen.

The talk is that while Singapore retained its regular bunkering customers, new ones moved in from other bunkering centres to add to

the growth registered. There is just one cogent reason for that to happen: the search for quality bunkers ends at the Port of Singapore.

#### Key to success

This reputation for integrity in the bunkering supply chain here is crucial to the success of the S\$23 billion business whose

contribution to the Singapore economy gets less attention than it deserves.

Bunkering is a mystery to most, and even some of those who are familiar with it view it as a 'dirty' business prone to scams and fraud.

But there is good reason why Singapore is the largest bunker port in the world,



besides being one of the world's busiest ports. There is a lot of traffic through the port and Singapore does a good job ensuring that this traffic is serviced with good infrastructure, key services and quality products, including bunkers. Of course, Singapore's location in the middle of major trade routes helps.

But the fact is, Singapore has a cluster of refineries of the world's oil majors that chose to locate themselves here. This helps with the supply of quality bunker products.

The other, and more significant selling point, is

integrity. The authorities and stakeholders worked at developing the bunker standards of today over some 20 years.

**Role model**

Today, the standards have received worldwide acceptance and recognition and the Singapore Standard CP60 has become a model for bunker delivery in other countries.

The people behind this must be commended as Singapore's standards have become reference documents for the development of an international standard under the ISO.

The key principles of Singapore standards on bunkering are fair trade, transparency and efficiency and this has been strengthened over the years, and particularly following a quality and quantity corruption scandal that rocked the industry four years ago.

The various safeguards Singapore has put in place must be lauded even if some of the black sheep of the industry assiduously find ways to get around them. The illegal business is so lucrative that the temptation to defraud will always exist.

However, the prevalence and intensity of these schemes will certainly be diminished by the vigilance of the authorities. And this is what must be paramount in our minds, if we are to keep Singapore's status as the world's bunkering hub of choice for a long time to come.

This article was first published in *The Business Times*.

Singapore has a cluster of refineries of the world's oil majors that chose to locate themselves here. This helps with the supply of quality bunker products.



HORIZON SINGAPORE TERMINALS

# CO-OPERATIVE MECHANISM

## TAKES STRAITS COLLABORATION TO NEW HEIGHTS

TWO EXPERTS FROM THE 2ND CO-OPERATION FORUM  
ROUND TABLE GIVE THEIR TAKE ON ENVIRONMENTAL PROTECTION  
AND THE CO-OPERATIVE MECHANISM

▶ Singapore, as one of the littoral States of the Straits of Malacca and Singapore, is a key player in the development of the Co-operative Mechanism which focuses on navigation safety and environmental protection in the Straits of Malacca and Singapore. The 2nd Co-operation Forum, was held recently in Singapore, to drive the agenda further.

Singapore was the stage for the historic launch of the Co-operative Mechanism at the IMO-sponsored Singapore Meeting on the Straits of Malacca and Singapore: Enhancing Safety, Security and Environmental Protection in September 2007. It was a milestone event for the international maritime community, as the Co-operative Mechanism

realised, for the first time, the spirit and intent of Article 43 of the United Nations Law of the Sea Convention (UNCLOS, which calls for co-operation among user States and coastal States in the maintenance of straits used for international navigation.

In light of the 2nd Co-operation Forum, *Singapore Nautilus* spoke to two experts to get a deeper sense of the developments in this area. They are:

● **Peter Hinchliffe, Marine Director, International Chamber of Shipping as well as Co-Chair of the Navigation Panel**

● **Tim Wilkins, Regional Manager Asia-Pacific, Intertanko Asia.**



Peter Hinchliffe



Tim Wilkins

**SINGAPORE NAUTILUS:**

**Within the framework of the Co-operative Mechanism, what have been the key developments in so far as environmental protection has been concerned? Has this subject gained heightened awareness in the context of international concerns?**

**HINCHLIFFE:** The greatest significance of the Co-operative Mechanism is the unique feature of the three littoral States working together on joint projects.

Perhaps the second most important factor is the consideration of navigational safety in conjunction with environmental protection.

Thirdly, I would place the readiness of the littoral States to engage with the industry in discussion.

These features give the Mechanism a truly unique effectiveness and one that the shipping industry welcomes.

**WILKINS:** Safety of navigation and environmental protection go hand in hand when tankers are concerned.

Five of the six Tripartite Technical Experts Group projects identified are focused on safety of navigation and so indirectly assist in environmental protection through the minimisation of incidents at sea.

The exception, which could be considered a direct environmental issue, is that of HNS spill response and contingency planning.



The assessment and review of the response capabilities undertaken within the Co-operative Mechanism is an important development for the protection of the environment in this region.

**SINGAPORE NAUTILUS:** **Can you share your insights on environmental protection in the context of port reception facilities, oil and chemical spill responses, ballast water management and bio-fouling management?**

**HINCHLIFFE:** The areas where ships have the

potential to impact the environment are addressed by existing International Maritime Organization (IMO) international legislation, or current work programme items on ballast water and bio-fouling.

The Ballast Water Convention, which the shipping industry wants to enter into force quickly is sadly lacking in ratifications by member States and we urge all member States that have not already done so to urgently ratify this important convention.

Bio-fouling is being addressed at IMO and we

expect guidance to be produced shortly.

We have observed shortcomings in the availability of waste reception facilities around the world and fully endorse the IMO mechanisms that are in place to identify and list those ports that are not fully compliant with the international obligations.

**WILKINS:** Environmental protection is clearly gaining ground as a subject that merits more focus and attention in this region, and not just from the man on the street but from the industry and the governments.

**Environmental protection is clearly gaining ground as a subject that merits more focus and attention in this region, and not just from the man on the street but from the industry and the governments. The Environmental Panel session held during the last Co-operation Forum is an example of how attention is now focusing on the direct environmental issues from the industry and the littoral States.**

Tim Wilkins, Intertanko Asia

The Environmental Panel session held during the last Co-operation Forum is an example of how attention is now focusing on the direct environmental issues from the industry and the littoral States.

The port reception facilities subject is a good example of an issue that has begun to gather momentum and has been identified as a matter which requires more action. It stems from the growing concern associated with marine litter and oil pollution.

Articles in the national and regional press indicate that international shipping is considered one of the contributors to this problem, and while land-based sources are the primary source of marine litter and oil discharge, there is a strong desire to see minimal pollution from shipping.

Certainly from the tanker perspective, this has been our target and the provision of adequate port waste reception facilities is the only

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way that the zero discharge level can be attained.

Oil and chemical spills from accidents is still a concern for the industry and coastal States. This is why it is important to undertake the pre-planning and contingency assessments now before an incident occurs.

Having this issue on the agenda of the Environmental Panel will allow the industry and the coastal States to consider how they can combine efforts in contingency planning.

Communication will be key in the event of an oil or chemical incident and so for all parties (industry and governmental) to understand their roles prior to an incident will require a high level of communication in the planning stages.

This will mean drills and exercises to be undertaken jointly by all parties. Considering this jointly at the Environmental Panel session during the Co-operation Forum will surely assist in deciding which areas can be further improved.

Both ballast water and bio-fouling management are issues borne from the same problem – invasive species.

From an ecological perspective, the region has a rich biodiversity of marine life, and from a societal perspective, there are still many who depend on the coastal marine life for their livelihood. Introducing invasive species is therefore

an issue which demands attention by the industry and coastal States.

The solutions are already being established on a global scale and I think that this is where we can use the knowledge of how to deal with the issue and apply the international guidance at a national and regional level.

**SINGAPORE NAUTILUS:** *What have been the greatest challenges in addressing these areas and how has the Mechanism sought to respond to them?*

**HINCHLIFFE:** Communication (or the lack of it) is at the root of most problems. The Co-operative Mechanism is a shining example of where trust, cooperation and communication are really working most effectively at identifying problems.

These elements are being experienced by the different stakeholders in finding solutions and where necessary or appropriate giving them exposure in international fora.

**WILKINS:** One of the greatest challenges is to assess the local and regional risk to the environment of the problems identified. By using international standards, we can then determine how regional solutions can be implemented.

## The Ballast Water Convention, which the shipping industry wants to enter into force quickly is sadly lacking in ratifications by member States and we urge all member States that have not already done so to urgently ratify this important convention. Bio-fouling is being addressed at IMO and we expect guidance to be produced shortly.

Peter Hinchliffe, International Chamber of Shipping



Bringing together the industry with the experience of implementing counter-pollution initiatives elsewhere in the world together with regional governments will ensure that both parties can come to an effective and practical solution.

The use of the Co-operative Mechanism and the inclusion of industry-based technical

Panels allow for an open dialogue on these issues – as was seen recently in the reception facilities issue (agreement to gather and exchange information on the availability of facilities in the Straits), as well as oil and chemical spill response (consideration of drawing together industry and governmental spill response exercises and drills).





# Dover Park Hospice SUNday Walk 2009

22 November 2009

## Put a ray of SUNshine into someone's life today!

Join us at Dover Park Hospice SUNday Walk 2009 and you could be taking the first steps to showing you care!

Bring family, bring friends, bring everyone on **SUNday 22nd November 2009**.

The SUNday Walk 2009 aims to raise funds for Dover Park Hospice, a purpose-built hospice providing palliative medical care to terminally ill patients of all races and religions.

The bright yellow SUNflower is a promise of warmth, nourishment and love. We will be awarding prizes to walkers with the best SUNflower-themed outfits.

The SUNday Walk 2009 is going to be a great day of fun - register as a walker now and be that ray of SUNshine!

### WALK DETAILS

#### Date and Time:

SUNday 22 November 2009, 5.30pm

#### Starting Point:

Raffles Place Park  
(in front of Chevron House)

#### End Point:

Clarke Quay

#### Registration Fee:

\$30 for individuals  
\$25 for students, senior citizens  
and healthcare workers

#### How to Register:

Please register at any one of the following registration booths

Dover Park Hospice  
10 Jalan Tan Tock Seng, (S) 308436  
Mon to Sat, 9am - 6pm  
19 October to 6 November 2009

Lot One Shopping Mall  
21 Choa Chu Kang Avenue 4 (S) 689812  
11am - 8pm  
17, 18, 24 & 25 October 2009

Or you can register online at  
[www.doverpark.org.sg](http://www.doverpark.org.sg)

Six Battery Road, Lobby  
6 Battery Road, (S) 049909  
Weekdays only, 11:30am - 1:30pm  
& 5pm - 7pm  
19 October to 30 October 2009

Plaza Singapura  
68 Orchard Road, (S) 238839  
11am - 8pm  
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For queries, please call Dover Park Hospice at **Tel: 6500 7268** **Email: [info@doverpark.org.sg](mailto:info@doverpark.org.sg)**



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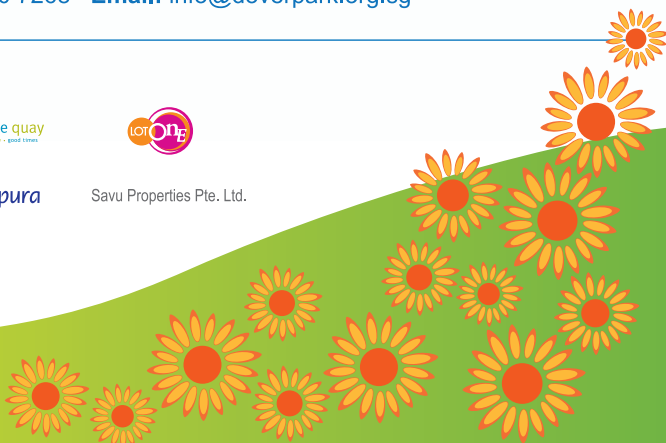


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# ANCIENT SHIPS

► The sea has always played an important role in history from the ancient world's great civilisations such as Egypt, Greece and China to the great exploits of Christopher Columbus searching for trade water highways to Asia. While ships have certainly evolved over the years, here's a look at some ancient ships that have played a key role in maritime development:

## Egypt

From the pictures of sailing boats on ancient Egyptian monuments, feluccas that still sail on the River Nile today are not so different from early Egyptian trading vessels. The felucca is a traditional wooden sailing boat whose rig consists of one or two lateen sails, and is able to hold 10 passengers and a two- or three-man crew. Feluccas are still in use in Aswan and Luxor and are especially popular among tourists and locals.

## Greece

The Greeks have one of the strongest maritime traditions in the world. Since 400 bc, they have relied on the strength of the Trireme, a 'state of the art' fighting ship designed to cover long distances quickly under oar and sail, and to ram enemy ships with devastating effect.

## China

No ancient ship exceeds the ancient Chinese 'junk' boat for sheer size and scale. They were long, keel-less boats with four to six enormous sails, reaching up to an amazing 140 metres in length. They incorporated numerous technical advances in sail plan and hull designs that were later adopted in Western shipbuilding.

## Europe

During the 12th century, the terrifying Vikings of Scandinavia had ships that were fast, long and slender, powered by oarsmen and a large square sail. The smallest, the skuta, had 30 oars while the skeid boasted 60 oars and a crew of 240. The longships could sail on long voyages, even across the Atlantic to North America.



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