

FRIENDLY WAVES



So what if this is a small island. Its maritime networks allow Singapore to dream big: connecting it to the world, welcoming business from near and far, and promising a sea of opportunities.

Thousands of things we take for granted, including the zoo's giraffes, arrived in Singapore by sea..

The Friendly

Air travel has the Singapore Girl. Singapore's friendly waves have their own elegant icons. Lucy and Roni are slim and leggy, with long eyelashes that supermodels would envy. They are also very tall. Which is why, when the two Angolan giraffes needed a ride from Israel to Singapore, flying was out of the question. Instead, they took a 16-day voyage on a ship across the Indian Ocean.

Today, when you see Lucy and Roni at the Singapore Zoo, you probably wouldn't stop to think about how they got here. But then that's also true of thousands of things around you (like the cement in the walls of your home), on you (the clothes on your back) and in you (the rice you had for lunch). Chances are, they sailed here just like our giraffes.

With so much at stake, it shouldn't be a surprise to learn that Singapore has a huge team of professionals working to ensure that stuff goes where it's supposed to – and arrives in shape. One of these individuals is Katty Teo, a senior sales executive with Pacific International Lines. Katty studied marketing at a university in Australia before choosing a career in the maritime industry.

"Customers do have challenging requests," she says. She recalls the work that went into loading a 120-foot catamaran, which is a specialised type of boat, onto a container ship. Because of the unusual shape of the catama-

ran, her colleagues were worried that it would be damaged in the process. "It took more than a month's study and preparation, but just 15 minutes to carry out the lifting," she says. "But it's a huge sense of satisfaction when you not only meet customers' demands, you exceed their expectations."



Singapore Zoo's Angolan giraffes, Lucy and Roni, came from the Tisch Family Zoological Gardens in Jerusalem, Israel. How did they get here? Check out the pictures on the facing page.

Such stories are like, well, a drop in the ocean, for a port that is one of the busiest in the world. Singapore receives over 120,000 vessel arrivals every year, from some 600 other ports in more than 120 countries.

All these visits to a country with just four and a half million people? That's because Singapore's maritime business doesn't just serve Singapore. The Taiwanese noodle factory that needs wheat from Australia,

the South African car showroom importing Nissans from Japan, and the family in New Zealand waiting for an Apple computer from Malaysia – all count on Singapore's friendly waves in one way or another.

It's a hub in the global network of sea trade.

Of course, this isn't something new. As you know from your history books, Singapore has been an internationally important port since the early 1800s, when it was established as a leading British settlement and free port in the

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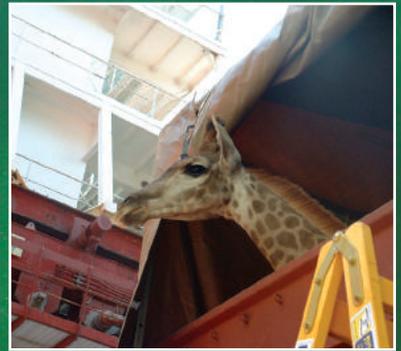
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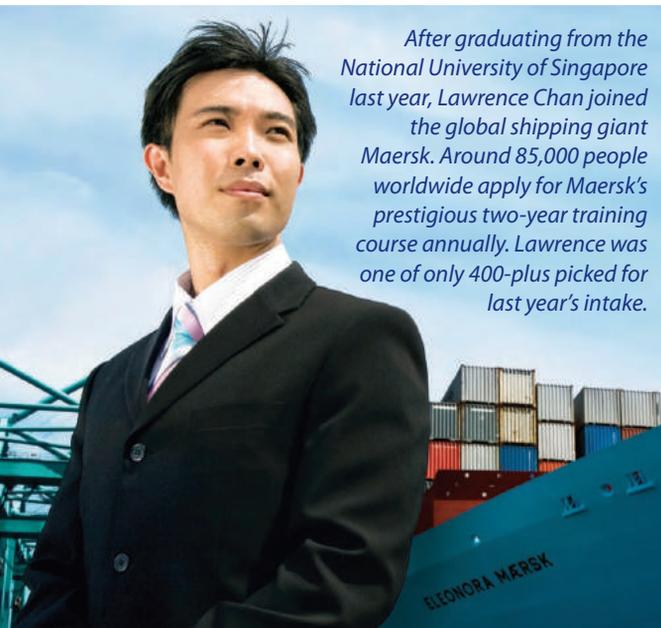
Main picture: PSA CORPORATION LTD



Pictures: SINGAPORE ZOO



This unusual cargo arrived safely in Singapore after a 9,000-km voyage. The zoo's Siberian tigers also arrived by ship. (Luckily for the giraffes, the tigers came separately!) Singapore depends on its sea links for an amazing variety of needs. As a leading hub port, Singapore also serves many other countries.



After graduating from the National University of Singapore last year, Lawrence Chan joined the global shipping giant Maersk. Around 85,000 people worldwide apply for Maersk's prestigious two-year training course annually. Lawrence was one of only 400-plus picked for last year's intake.

region. Back then, one big attraction for traders was the low taxes. Singapore's convenient location, its deep-water harbour and calm seas were other important advantages.

But nowadays, it's much more than that that keeps our sea lanes busy. Singapore's maritime industry makes sure that customers' every need is taken care of.

For Captain Ravi Somakumar, that means taking care of not just one vessel but 55 – including oil tankers, gas carriers and chemical tankers. With a masters degree in Maritime Studies from the Nanyang Technological University, he used to sail on ships, but – like most of the people who work in Singapore's maritime industry – he's now on firm land as an operations manager at Anglo-Eastern Ship Management. "I love being in the thick of the action," he says.

Since time is money in modern business,

Pictures: MARITIMEONE



Maritime professionals Katty Teo and Ravi Somakumar help keep Singapore ticking.

△ Friendly Waves

millions of dollars are invested to make the port ever more efficient. PSA Singapore Terminals built an amazing software called Portnet that links the many different port users. It allows them to do various tasks online, such as tracking cargo and booking tugboats. Some 100 million transactions a year fly through Portnet. The Maritime and Port Authority and the Infocomm Development Authority have also launched WISEPORT, making the Port of Singapore the first in the world to offer wireless broadband internet access to ships within its waters.

Of course, not everything can be done by computer. The human touch is crucial, so the industry is always on the lookout for motivated and talented young people to join its workforce and keep Singapore's reputation flying high. There are exciting educational and training opportunities for them. Just ask Lawrence Chan, who was picked for the prestigious Maersk International Shipping Education programme.

Lawrence is a member of Mensa, the club for high-IQ individuals. But he says, "The customers don't care how much you know, until they know how much you care."

That's the kind of attitude that's made Singapore a favourite hub for all sorts of maritime activities.

IN and OUT

Singapore is the world's busiest transshipment hub. Transshipment refers to receiving stuff from one ship before sending it off to another, final destination. Sometimes, this involves more than one mode of transport. For example, cargo could arrive by ship and then be flown out by air. Another method is to combine small shipments from different places into one larger shipment. This is a bit like the way different feeder buses meet at the terminal for people to board the MRT out of the estate. Transshipment is a big reason why the Port of Singapore is the world's busiest in terms of shipping tonnage.



Getting the boxes in and out quickly is an incredibly complex puzzle. Fortunately, PSA's port planners are armed with world-beating computer software that helps them arrange the containers for maximum efficiency.

Pictures courtesy of PSA CORPORATION LTD



The **Ultimate** Rubik's Cube Puzzle?

Sudoku, jigsaw puzzles and Rubik's cubes are for wimps. When you grow up, try the 24/7 challenge of moving 70,000 colourful boxes a day.

The containers arrive at PSA Singapore Terminals on about 60 different ships daily. They have to be stacked in the yard in such a way that they can be moved out again in as few steps as possible the moment they're needed. If it's one container's turn to leave, and it's stuck beneath six others, it's Game Over. Sure, it can be retrieved by shuffling the boxes around, but that wastes time, and the Port of Singapore didn't get to the premier league of maritime hubs by wasting people's

time. Whether the boxes contain parts for a Nintendo Wii factory or medicines that people need to stay healthy, they're all considered important cargo by their senders and receivers, and the port professionals in between

never forget that.

The heavy lifting at the Port of Singapore's terminals is done by 750 cranes. But, the puzzle solving is done by planners with computers that are loaded with advanced software.

Out of the Box

Containers are an efficient way to transport cargo, but not *all* cargo can fit in a container. That's okay, because Singapore's maritime professionals are used to thinking "out of the box".

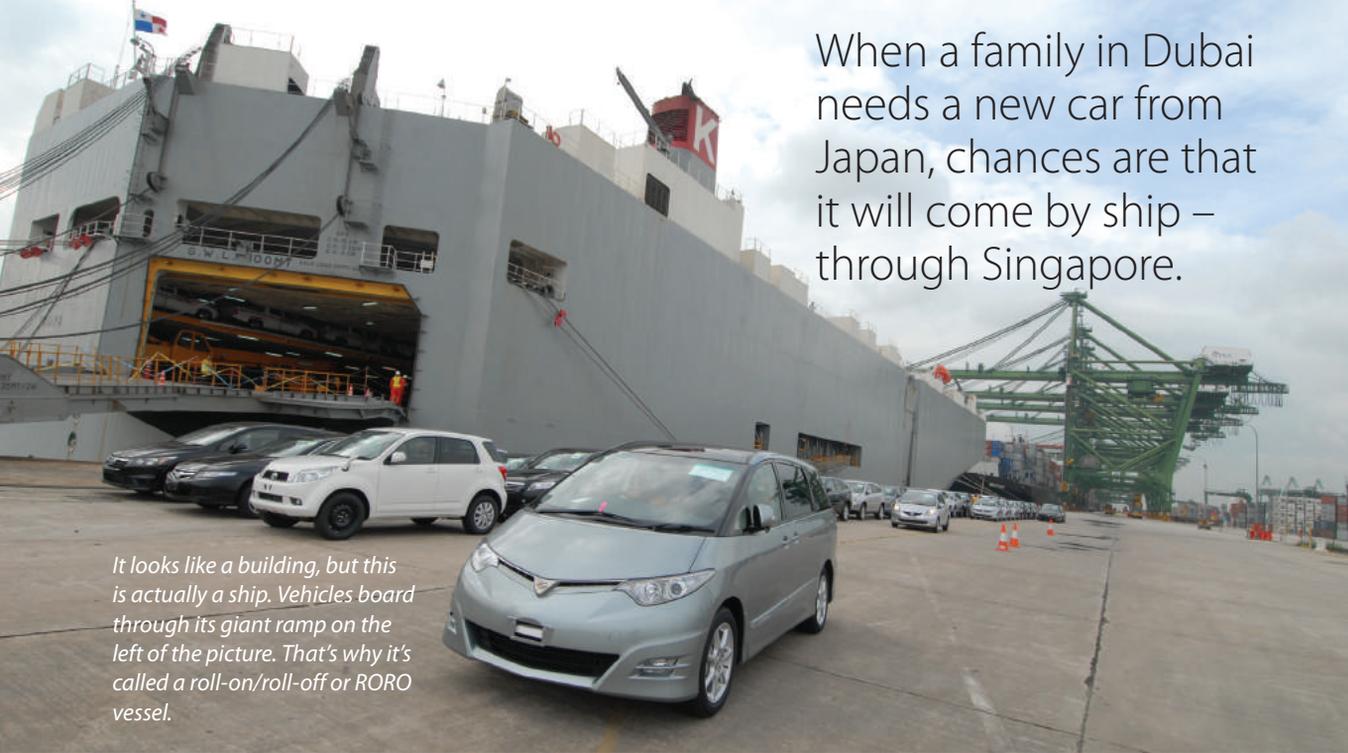
Over at Jurong Port, for example, there are huge silos ready to receive tonnes of powdery cement in unpackaged loads.



JURONG PORT

When Cars Need a Ride

When a family in Dubai needs a new car from Japan, chances are that it will come by ship – through Singapore.



It looks like a building, but this is actually a ship. Vehicles board through its giant ramp on the left of the picture. That's why it's called a roll-on/roll-off or RORO vessel.

Pictures: ALPHONSO CHAN / WHAT'S UP

The massive mother-ship is docked by the wharf. The ship's ramp lies lowered to the ground, revealing an ominously huge cavern. At an unseen signal, cars and tractors drive into that yawning maw into the unknown depths.

It's not an alien invasion or a scene from *Transformers*, just "K" - Line's *Baltic Highway* taking on her cargo. The vehicles boarding arrived on another car-carrier ship from Thailand a few days ago. Earlier, the *Baltic Highway* unloaded

a shipment from Japan. In a matter of hours, she'll be heading off to the Persian Gulf.

Singapore is one of the biggest "transshipment" hubs in the world for cars and other vehicles, meaning that the vehicles are shipped here from factories before being shipped out again to customers.

They're carried on specially-designed ships like the *Baltic Highway*, which measures 180m long and 43m in height, with 10 levels of "parking" inside.

The *Baltic Highway* can carry around 3,300 vehicles – that's more than Suntec



These vehicles are in Singapore, but you won't see them on Singapore's roads. They're just visiting. Singapore is a hub for transshipping cars.

City's humongous basement carpark! There are even bigger ships that can carry 8,000.

It's no easy task, unloading and loading more than 8,000 vehicles in 12 hours. The workers have to be quick – but ultra-careful. They even avoid wearing watches, belts or any



The Baltic Highway has 10 levels of parking, with space for more vehicles than Suntec City's basement carpark! Expert drivers park the cars with less than 10 cm between them.

hard item that could accidentally scratch the precious cargo.

Singapore companies have gotten the process down to a highly efficient art-form, making it a favourite transshipment hub for those fussy car manufacturers.



Then, the vehicles are tied down securely. Just as passengers need to wear seat belts in a car, these vehicles need to belt up for their long journey across the ocean.



MARITIMEONE

May I serve you?

Singapore is famous as a foodie's paradise, but it's not just tourists on land who love to get their fill here.

Big ships also drop by for a happy meal in Singapore. You could call it the neighbourhood's bunker king.

In the maritime world, a ship's fuel is called "bunker". Singapore is the world's top bunkering port, starting back in the 19th century, when steamships crowded the waters demanding coal. Nowadays, the vessels use oil, but bunkering is still a big business for Singapore's maritime industry, which prides itself on efficient and high quality service.

Steve Goh (picture), a bunker trader, works in this industry. With a diploma in marine engineering from Singapore Polytechnic and a degree in economics and banking finance from Australia, he now works for Bomin Bunker Oil.

A lot of bunkering takes place some distance from

the shore. Otherwise, you'd see a massive traffic jam around the port. It's like home delivery, except this meal is sold by the tonne and delivered by a 100-metre long ship called a bunker tanker.

The bunker tanker collects fuel from giant tanks in Jurong or the Southern Islands. It then sails to the "mother-ship" – the maritime jargon for the ship that's waiting to be refueled.

The mother-ship is fed through a giant pipe. Bunker is highly flammable, so the process has to be done very carefully. This isn't a meal that you want extra-spicy – though you're welcome to upsize it.

Made in Singapore

When a Norwegian oil drilling company, Skeie, had about \$600 million to spend on a new oil rig, it gave the contract to Singapore's Keppel FELS. When Keppel finishes the job in 2010, the rig will be towed to the North Sea off Norway, to drill for oil as deep as 10 kilometres beneath the seabed. Skeie has also ordered three jack-up rigs from Sembcorp Marine, another Singapore firm.

These are massive engineering projects and big boosts for the Singapore economy. But, they don't make it to page 1 of *The Straits Times* – because they're nothing new. Companies like Keppel FELS and Sembcorp Marine have been winning such giant jobs for a long time. They have become such experts that, incredibly, Singapore now claims 70 percent of the worldwide business of building jack-up rigs (like the one in the main photo).

Singapore is also a makeover specialist. It takes old ships and converts them into floating factories for the oil industry called FPSO vessels. (FPSO stands for Floating Production, Storage and Offloading.) Singapore is the world leader in FPSO conversion – doing twice as much as all other countries combined.

Ship Shoppers' Paradise

Forget Playstation 3s or fancy bling. Big boys and girls trade multi-million-dollar ships. And Singapore is the place to buy, sell or charter vessels.

Shipbrokers are specialists who help companies book vessels. They also handle the buying and selling of the ships themselves. It's a big business, and Singapore is one of the top ten centres in the world for this enterprise.

A shipbroker must have a strong network of contacts, so that he or she can seek the right type of ship that the client needs – at any time, in any part of the world. Kaleena Kwan (above) joined this line after graduating with a business degree from the Singapore Management University. "I'm learning, earning and enjoying myself," she says.



MARITIMEONE



Singapore's yards are such experts at building jack-up rigs that 70 percent of this worldwide business comes here.

Singapore

The world keeps coming back to Singapore when it wants oil rigs and other specialised vessels built or repaired.

Picture: A jack-up rig at Sembcorp Marine's Jurong Shipyard. Sembcorp Marine is also building the world's largest harsh-environment jack-up rig tested for Norway. It was ordered by PetroProd of Larsen Oil and Gas Group.



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Various other specialised vessels are made or upgraded in Singapore. For example, when an Australian company recently needed a special type of ship to lay miles of pipe on the sea floor, it came to Kim Heng Shipbuilding and Engineering to build one for them. The vessel needs to have special anchors all around it to keep it stable while it does its work of pipelaying.

Singapore also makes container ships, ice breakers, fire fighting vessels and high-speed catamarans for the world. The marine sector employs many professionals, including naval architects and highly skilled engineers from various disciplines.

The flag with faraway fans

In the farthest corners of Planet Earth, you can find ships flying Singapore colours – even though there's not a single Singaporean on board. In fact, if you measured a country's popularity by the number and size of ships carrying its flag, Singapore would be the sixth most popular country in the world.

However, inviting ships to carry the Singapore flag isn't like some Facebook or Friendster contest to collect "friends". It's actually part of a serious service provided by the Singapore Registry of Ships.

Many countries operate registries. A ship owner can choose where to register his ship, which is a bit like getting an identity card or passport. When you register a ship, it means you agree to follow that registry's rules. In some ways, the Singapore Registry of Ships' rules are more open and welcoming than others – it doesn't tax the companies' profits, and it allows 100% foreign crew.

In other ways, though, its rules are pretty strict. That makes Singapore's registry highly trusted – and trust is very important in the maritime business. It's like when you fly to a foreign country such as Britain or the United States. You land at the airport and they let you in because they trust your red Singapore passport. The citizens of many other countries don't get in so easily. They may have to apply for a visa in advance. Allowing a ship to enter is a bit like that. A country will check the ship's records to keep out troublemakers. To be registered in Singapore, the ship has to pass many safety and environmental checks, making it trusted all over. So, being open to anyone doesn't mean that anything goes. Thanks to this approach, Singapore's colours are a favourite accessory for ships everywhere.



Pictures: SEMBCORP MARINE

In it together

The maritime industry is so international, you get to see the world – even if you stay in one place.



Ron Pereira has been in the maritime industry for 50 years. It's such a big part of the Singapore economy that he's never been out of a job, he says.

Pictures: SARAH ISMAIL / WHAT'S UP; RON PEREIRA

Ron Pereira is full of stories about life back in his seafaring days. Like the one about the cargo ship, the frozen mutton, and the South American cowboy and his dogs.

The veteran seaman describes how his ship carrying frozen mutton ran aground when it was entering Montevideo, the port city in Uruguay. "It was pitch black," he recalls. "We didn't know where we were. The ship listed 25 degrees."

The crew worked together to get out of the sticky situation. Thanks to the happy ending, Mr Pereira can now laugh at the memory of how the ship, stuck on the ground, surprised the locals on shore. "When the sun came up, there was a gaucho, surrounded by his dogs, staring at us," he says.

Most events at sea aren't so dramatic, but everyone agrees that meeting its challenges requires teamwork. "You have to co-operate to make life easy," says Mr Pereira. "On board the ship, it's a small community, and you're working together for at least two weeks. You have to get along – if you don't, then life is

hard."

It's not just at sea that you can get the enriching experience of working in a diverse team. Singapore is a global hub for the maritime industry. So, in offices on dry land, it is like a United Nations. At BW Shipping Managers' Singapore office, for example, there are 15 different nationalities among its 120 staff.

"Working with people from so many different cultures and backgrounds helps me develop an understanding of the world," says assistant manager Bree Fitzpatrick, an Australian. "This is really important in such a global industry because the company deals with clients from all over the world."

It also makes life more interesting. "It's really fun to be in such an energetic and international team," says Miss Fitzpatrick.

Attracted by such opportunities, many able and motivated Singaporean youth are en-



BW Shipping Managers' office in Singapore is like many others in the maritime industry – it has staff from all over the world. That's an advantage, says Australian Bree Fitzpatrick (third from left), because their clients are also international.

rolling for polytechnic diplomas and university degrees in maritime-related fields. Even within other fields like law or business, Singaporeans are specialising in supporting the maritime industry.

Nanyang Technological University student Bay Lishan is one such person. Attracted to the business side of the industry, she's pursuing a maritime studies degree. She did her internship at a foreign shipping company in Singapore with a large expatriate staff. "Initially, it was a bit of a culture shock," she admits. "But they were very easy to talk to, very friendly, and willing to teach interns."

Months before graduating, she has already secured a job: she'll be managing chartered ships for an international mining company.

Her chosen profession has opened her eyes to faraway places. "At first, some places seem unreachable and impossible to get to know," she says. "But in this course, we learn how to deal with places you might never even hear of otherwise. You really see that the world is getting smaller all the time."

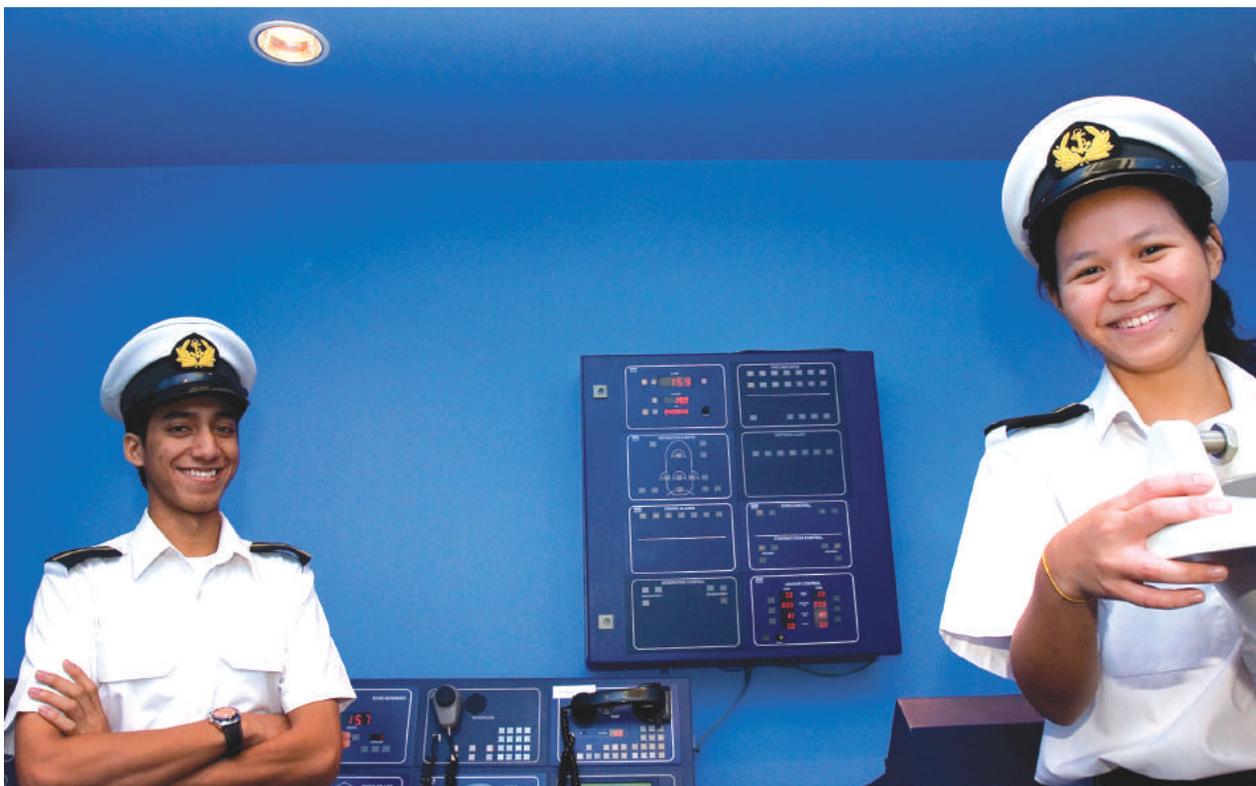
It's also a small world on board the *Kota Karim*, a Pacific International Lines container ship. There are sailors from six different countries: Ghana, Sri Lanka, Myanmar, India, Indonesia and Singapore. Every time Captain G. P. Attah takes command of such a diverse crew, he calls them together for a pep talk. "We are going to live like one family," he tells them.

Working with such an international crew is like a journey within a journey. "You get to know people's countries and cultures even though you've never been near those places," Captain Attah says.

His crew includes a female Singaporean



Jimmy Lum, a Singaporean executive of BW Shipping Managers, says he feels "amazed and blessed" to be an industry with so much to learn and so many interesting people to work with.



Pictures: HUIYING OBE / WHAT'S UP

Muhammad Aliff bin Saifudeen and Dorothy Sim are pursuing maritime diplomas. Rewarding careers beckon. According to The Straits Times, the polytechnics' 2007 batch graduating with maritime-related diplomas earned an average of \$1,981 a month, higher than any other field.

deck cadet, Zhang Shuzhen (below). “She is our mother, and our daughter too,” says Captain Attah affectionately. However, don’t imagine that Cadet Zhang wants to be looked after by men. She’s aiming to captain a ship one day. “I have a duty to fulfill my dream,” she says.

Over at Singapore Polytechnic’s Maritime Academy, Muhammad Aliff bin Saifudeen and Dorothy Sim (above) are also pursuing their goals. Aliff is on a SAIL Scholarship, which was set up to produce Masters or Chief Engineers of ocean-going merchant ships who’ll later take up high-level jobs on shore. Aliff has already had his attachment at sea, which he calls “life-changing”.

“I am more mature in the way I think,” he says. Dorothy agrees, calling her time at sea “confidence-boosting”. But, just like generations before them, these new recruits know that they can’t achieve anything alone. Whether at sea or in an office, the maritime industry is all about teamwork and cooperating with crew, colleagues and clients from all over the world.

One of Aliff’s favourite memories of his voyages was bonding with crew members from China and Myanmar. “We made dumplings together for special occasions,” he recalls. “Even I tried it out. They laughed at me because I was slow – but those guys were fantastic at it!”



Singaporean Zhang Shuzhen (fourth from left) with Captain Attah from Ghana (extreme left) and other members of the multinational crew on board the Kota Karim when it was in Singapore recently.

Clean and Blue

There are risks out there, but the pros have ways to tackle them.

With about a thousand ships in its waters at any one time, Singapore is one of the busiest ports in the world. Along with that traffic come risks to the environment. Fortunately, that's something that the people in charge never forget.

Compared with land and air transport, shipping is already the least environmentally damaging and most energy efficient mode of commercial transportation. For example, a Boeing 747-400 on a 1,200 km flight produces 540 grams of carbon dioxide per tonne for each kilometre flown; a cargo ship of more

than 8,000 deadweight tonnage produces 15 grams of carbon dioxide per tonne/km.

Of course, more can be done. The Maritime and Port Authority of Singapore keeps close tabs on ship emissions and overall pollution from ships, and cooperates with many others to keep the waters clean and safe.

	Issue	Strategy
Oil spills	Leaks of oil or chemicals from ships can harm the environment. Since oil is lighter than water, it doesn't sink but stays on the surface, thus cutting off sunlight and reducing the level of oxygen in the water. This can kill the fish, and seabirds as well. In addition, an oil spill can hurt industries that depend on the sea, such as fishing, aquaculture and tourism, as well as the residents who enjoy beach activities.	The MPA has developed an emergency action plan in case of oil spills and other crises. But prevention is better than cure, so the MPA uses technology to help ships navigate in and out of the port safely. The Vessel Traffic Information System can track the positions of up to 5,000 ships at one time.
Ballast water	When a container ship or oil tanker is sailing without much cargo, some compartments are filled with seawater to help stabilise and balance the ship. This is known as ballast water. When the ship reaches its destination, the ballast water is pumped out. Sounds harmless? Not necessarily. The ballast water originally from ports thousands of miles away may contain tiny marine organisms that are alien to the place where the water is released. Sometimes, these alien invaders can multiply wildly, causing confusion to the local ecosystem.	One solution is to get ships to expel ballast water in the big wide ocean, where the organisms would be overwhelmed and won't cause much damage. New ballast water would be drawn from the ocean before heading to their destination. The new load of ballast water will also contain its own organisms, but organisms from the ocean probably wouldn't thrive in different waters of a port. The MPA is also working with scientists to develop a water treatment system to remove organisms in the ballast water before it's discharged.
Waste	A cruise ship may expel 210,000 gallons of sewage water and more than eight tonnes of solid waste. Air pollution is another issue – although shipping is still a relatively environmentally-friendly mode of transport compared with land transport and aviation.	Together with the IMO, the MPA has been encouraging ships to reduce and control their emissions. They are also required to have adequate facilities to deal with sewage and other waste safely and cleanly. Singapore has signed an international agreement called the MARPOL Convention – MARPOL stands for marine pollution.

From Sea to Screen

For most people, a lot of what they think they know comes from television and film. But how close do screen depictions of maritime life get to the truth? We find out from real-life maritime professionals.

The Peak provides a peek

The Channel 8 TV drama *The Peak* showed viewers scenes of Singapore that many had never seen before, like the inside of a shipyard.

Actor Christopher Lee (main picture) played a project manager who has to coordinate operations, including the lifting and unloading of heavy cargo. He gets this done by shouting a few orders into his walkie-talkie.

When Ivan Lim saw this scene, he couldn't help but laugh. Mr Lim (right) is a real-life project manager at Keppel Shipyard, so he knows what the job really demands. It takes real expertise: Mr Lim is a marine engineer with a diploma from Singapore Polytechnic and a Masters degree from Brit-



Pictures: KEPPEL, MARTIMEONE



ain's University of Newcastle upon Tyne. Before lifting massive cargo, he must do careful calculations and deal thoroughly with any possible safety risks. To show all that work

on TV might have been pretty boring. But, that effort is what makes the job satisfying. Mr Lim has been rising to the challenge for more than six years.



In *The Peak*, Jeanette Aw acts as a team leader, while Cai Zhenya plays an assistant project manager. But, do women really work in shipyards? Surprisingly, a few do – like Frances Teh (inset picture) – and the number is growing.



This gigantic structure – like something from a sci-fi flick – must be a prop, right? Wrong. It really does exist, and so do many others just like it. It's a semi-submersible oil rig, built in Singapore to drill for oil in far-away seas. The producers of *The Peak* shot at a real shipyard to capture these dramatic backdrops.

Next stop, World's End

In *Pirates of the Caribbean III*, the heroes travel to Singapore in search of pirate chief Sao Feng. They need his help to complete their journey to World's End. The Singapore shown in this blockbuster movie is made up – but it's true that ships from everywhere use Singapore as a place from which to launch their voyages to the ends of the earth. Petya



Blumbach (left) of Ambsbach Marine is one of the maritime professionals who keep international clients coming, supporting Singapore's development into an international maritime



centre. Serving companies' diverse needs can be highly complex, but it's also about "meeting people face-to-face, shaking hands, engaging and interacting with them on a personal level". In other words, she is willing to help – even before her clients win a swordfight.

UNIVERSAL PICTURES



All Aboard - except that gorilla!

In the movie *King Kong*, Captain Engelhorn makes extra cash by smuggling rare animals into the city on his cargo ship. That's how the monster ape from Skull Island ends up wreaking havoc in New York City. Fortunately, terrorists of any species won't find it so easy to enter the port of Singapore, thanks to strict customs and security checks.

Captain Capable

In films such as *Master and Commander*, ship captains are portrayed as rough-and-tumble men who shout and swear. Captain Jolyn Tay (right) doesn't quite fit the stereotype. "People expect to see someone bulky, brusque and bronzed," she says. "You don't have to look like the Incredible Hulk – or even Wonder Woman," adds Captain Tay, who now works onshore with the Maritime and Port Authority of Singapore.



20TH CENTURY FOX

Ship Shape

Vessels of all shapes and sizes dot Singapore's waters. Here's a guide to some of the common ones.



CONTAINER SHIP. Carries containers filled with cargo. Packing things in boxes, which can also be carried by a truck, makes it easier to handle cargo.



OIL TANKER. Used to transport crude oil. This one, the Gemini Voyager, weighs 300,000 tonnes when fully loaded – more than the weight of Singapore's entire population!



LNG CARRIER. Nicknamed "dinosaur egg carriers", they transport Liquefied Natural Gas (LNG) in their giant spherical tanks, called "moss tanks".



FPSO VESSEL. The Floating Production, Storage and Offloading vessel is like a floating refinery to process oil that's just been pumped from the seabed.



RORO SHIP. These ships are designed with ramps to allow the cargo to be rolled on and rolled off, hence the name "roll-on/roll-off" or RORO.



CRUISE SHIP. More than 50 international cruise liners drop in at Singapore every year. These floating hotels are packed with restaurants and leisure facilities.



BARGE. A flat-bottomed boat used to transport heavy goods, like a crane as in this example. You can also see barges loaded with sand.



TUGBOAT. These small boats pull ships a hundred times larger. They help ships move in and out of harbours and ports safely. They also pull barges.

Pictures courtesy of
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