

ClassNK

MAGAZINE

December 2017 - 82nd Edition

- ◆ *China's green ambition*
- ◆ *Fuel for the journey*
- ◆ *Ship recycling*



Brighter future

Welcome to the 82nd edition of the ClassNK Magazine



The general population usually only sees the end results of the efforts of the maritime industry, namely, the delivery of goods around the world. But those of us working in the business know that it is not as simple as that. From shippers to shipbuilders, equipment manufacturers to engine makers, our industry is a collection of diverse operations that work in harmony for mutual success.

New developments in technology and the introduction of various regulations mean that not only will a “one size fits all” approach be

insufficient, but we must adapt to changing environments in each area of the industry. For ClassNK, that means listening to feedback from our clients and news from regulatory authorities to see how we can tailor our services to best suit industry needs.

We have responded to industry calls for safer and environmentally-friendly ship recycling practices by establishing the Ship Recycling Project Team, who are leading efforts in raising the standards of ship recycling worldwide. An article in this edition highlights their pioneering endeavors to raise awareness and vastly improve conditions in one of the maritime industry’s most critical sectors.

Another ongoing issue is how to tackle gas emissions from ships. Upcoming regulations go a long way to ensure that seaborne trade remains one of the most environmentally-friendly modes of global transport, but without the proper support the industry will struggle to comply with the subsequent technical and operational challenges.

In this edition, we have included two articles on emissions from ships. The

first, an outline of alternative fuels, shows how shipowners can stay in compliance with the upcoming SOx regulations in 2020, satisfy EEDI requirements and operate effectively within Emission Control Areas. The other article, on what activities are being undertaken in China to curb emissions in some of the world’s busiest ports, opens a new chapter in efforts to support cleaner and greener operations.

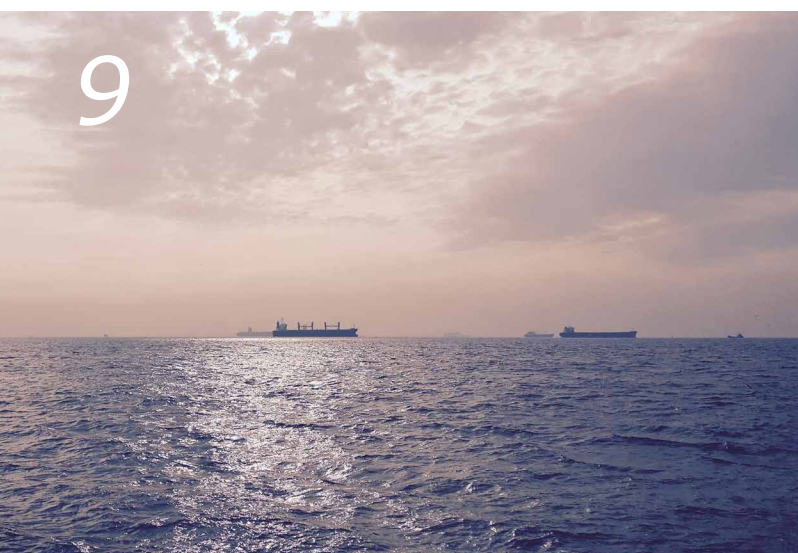
We are also honored to have an interview with Jiangsu Ocean Shipping Co. Ltd., offering insight into the inner workings of the Chinese shipowner’s business, and its outlook for the future.

And finally, an interview with ClassNK’s Regional Manager of China, Taira Narisawa, details ClassNK’s operations in this major shipping region, as well as the undertakings of the ClassNK China Headquarters in Shanghai.

I hope you enjoy this edition of the ClassNK Magazine.

A handwritten signature in black ink, appearing to read 'T. Narisawa'.

ClassNK



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ClassNKnews

ClassNK wins The Safer, Cleaner Seas Award

27 October 2017 – ClassNK picked up the Lloyd's List Safer, Cleaner Seas Award for raising global awareness and environmental standards through its ship recycling activities at the 20th Lloyd's List Asia Pacific Awards in Singapore.

The Lloyd's List Asia Pacific Awards recognize successes in the Asian and Oceanian maritime industry, setting a benchmark for excellence while rewarding breakthrough ideas and concepts. The Safer, Cleaner Seas Award is awarded to organizations that have made major contributions to the reduction of environmental pollution from maritime sources.

ClassNK has provided the industry with a range of unique services to help promote safer and greener ship recycling practices in line with the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships (HKC), 2009, requiring shipbuilders to develop a ship-specific Inventory of Hazardous Materials (IHM) identifying locations and quantities of hazardous substances on board.

ClassNK has already issued HKC Statements of Compliance (SoC) to the ship recycling facilities in Japan, China, India and Turkey and is paving the way for HKC verification expansion to Southeast Asia.

Good Maintenance Onboard Ships updates

1 November 2017 - ClassNK released the latest version of Good Maintenance Onboard Ships (October, 2017). The comprehensive checklist is designed to be used by shipmasters, crew, shipowners, and other key personnel in order to ensure vessels are safe, well-maintained and comply with regulations.

To further improve the quality and efficiency of maintenance onboard ships, ClassNK has incorporated its knowledge and experience gained through surveys and audits, feedback from Port State Control (PSC) inspections, and comments from shipowners and mariners to provide the most up-to-date checklists for Routine Maintenance, PSC Inspections, Safety Management Systems, Ship Security Management Systems, as well as photos of the most common deficiencies. The latest edition now also includes a checklist for the Maritime Labour Convention, 2006 (MLC, 2006).

ClassNK's Director of Survey Operations Division Yoshihori Kozeki said: "The latest edition of Good Maintenance Onboard Ships includes clear explanations and photo examples as well as guidance on the latest updates in the industry. We hope that crews will utilize this to help create a safer work environment, decrease the number of PSC detainments and prevent maintenance related problems before they occur."



Mr. Tetsuya Hayashi, Regional Manager of South Asia and Oceania, ClassNK (centre) receives The Safer, Cleaner Seas Award at the Lloyd's List Asia Pacific Awards



China's comprehensive partner

Continuous development of service capabilities is driving growth for ClassNK China

Headquartered in Shanghai, ClassNK China represents a strategic commitment for ClassNK and has its own Strategic Planning Division to manage a significant number of customers - both existing and potential. The ClassNK China team is heavily involved in business development, bringing ClassNK's core values and breadth of experience to its customer base in the region.

Taira Narisawa has been President of ClassNK China since 2013. In a 35-year career with the Society, the electrical and information engineering graduate has gained a wealth of experience, including roles approving ship plans, surveyor duties at branch offices in Japan, five years with ClassNK Houston as General

Manager, and four years at the head of the Machinery Department.

During a period with the Business Department, he coordinated overseas technical committee meetings and the ClassNK overseas national committee meetings in countries across ClassNK's service network. Furthermore, while heading the Machinery Department, he led ClassNK's environment project team, coordinating a series of collaborative R&D initiatives with maritime industry partners aimed at reducing the environmental impact of shipping.

Nearly 130 Chinese companies manage around 450 vessels in the service area of ClassNK China,

equivalent to 13 million gt, of which 47 companies hold documents of compliance issued by ClassNK. Around 60 new ships classed by ClassNK - equivalent to 2 million gt - are expected to be delivered from 15 Chinese shipyards this year.

Today ClassNK China has branch offices in Guangzhou, Zhoushan, Shanghai, Nantong, Qingdao, Tianjin and Dalian. While the survey of existing tonnage remains the mainstay of its work, Mr. Narisawa points to an extensive and growing range of duties: overseeing newbuilding surveys; inspecting materials and marine equipment including type approval; approving service suppliers; and conducting MLC, ISPS & ISM audits.



“ClassNK China has also established the Plan Approval Center at its Shanghai headquarters for examining and approving vessel plans and related tasks,” Mr. Narisawa says. “The head of each branch office oversees the fulfilment of these functions, while I am responsible for coordinating and orchestrating activities.”

It is a broadening service portfolio that reflects a subtle shift in ClassNK’s objectives for its business in China. “Earlier, our main aim was to grow the business based on the surveys of existing tonnage, but that has changed over time and there is a shift in the balance towards newbuildings. Achieving this has demanded a greater understanding of clients and relationship building, as well as continuing to provide them with high quality technical service.”

In terms of measuring its success, an increase in the newbuilds classed by ClassNK China is the clearest gauge. “But before that, one way of increasing levels of satisfaction regarding our routine work is to carry out more robust analysis of our relationships and engaging with

clients at their point of need,” says Mr. Narisawa.

ClassNK China circulates latest updates of industry trends and technical information to its customers, and holds regular technical seminars across the country to familiarize them with the latest requirements of new regulations and hot industry topics. It will also provide individual technical seminars to specific customers as necessary.

“Providing information and offering our clients the technical training they need through the ClassNK Academy system to enrich their knowledge has become a critical component in maintaining service excellence,” says Mr. Narisawa.

“It is essential that we continually strive to improve the competency across the board and, outside the core ship survey function, therefore we have also established the Training Center at our Shanghai Headquarters,” he adds. Recently, ClassNK China has trained up some of its surveyors to act as verifiers for the new EU-MRV (Monitoring Reporting and Verification) standard covering emis-

sions from ships, and the society has started offering the service locally. “We must be pro-active in preparing for future data collection systems, for example for fuel oil consumption by ships.”

As is the case elsewhere in the industry, emissions from ships are a priority for the ClassNK China President, with IMO regulations on SOx due in force from 2020. “We have received many inquiries from regional shipping companies, and held seminars and meetings to advise on their options, such as fitting ‘scrubbers’ or making their ships ‘scrubber-ready’, or using LNG fuel engines for newbuildings.”

But, he adds, almost all the shipowners and companies with which he has regular contact are currently in a monitoring mode, awaiting further effective implementation procedures, “which might be proposed at IMO MEPC 72 to be held in next February”.

ClassNK itself has conducted extensive joint R&D projects for SOx scrubbers, while its dual fuel engine and LNG-fueled ship experiences extends back to 2009. It has developed “Guidelines for Exhaust Gas Cleaning



*Mr. Taira Narisawa,
President, ClassNK China*

*In line with ClassNK's core values,
ClassNK China is redoubling its efforts to
ensure that customers choose ClassNK
based on its high-quality services*

Systems” and “Guidelines for Gas fueled ships” and is ready to offer full technical support for any potential challenges, Mr. Narisawa says.

What is most important is that customer satisfaction is based on service levels that always consider needs from the customer perspective. For surveys, this demands consistency and flexibility, although the latter must always be supported by scientific fact. For local managers, it means leadership that includes the flexibility

to change the composition of survey teams so that younger surveyors can gain experience and knowledge.

While Mr. Narisawa acknowledges that the approach ties in with ClassNK's corporate culture, he emphasizes the way these values are reinforced in China. “Twice a year, we hold the ClassNK China Survey Meeting to share information and updates on technological improvements, and to discuss how we can improve our service levels, especially when it

comes to making survey judgements quickly, effectively and flexibly while remaining solidly backed up by scientific fact. I would say that this event is only second in importance to the ClassNK China General Manager meetings we hold 3 or 4 times a year, he says.”

“In line with ClassNK's core values, ClassNK China is redoubling its efforts to ensure that customers choose ClassNK based on its high-quality services.”

China's green ambitions

Ship emissions are firmly in the cross-hairs of regulators as China clears the air

While rapid economic growth has delivered prosperity to millions of Chinese, it also places increasing pressure on the environment. Poor air quality has become a recurring problem in major cities, with severe smog alerts and hazy urban cityscapes occurring with increasing frequency.

In addition to a national energy policy geared to incentivising renewable sources, Beijing is seeking to reduce fossil fuel consumption and impose more stringent controls on emissions. Vehicle emissions are particularly in the spotlight. And when it comes to vehicles, policymakers are not just thinking about cars, trucks and other land transport.

Every year, around 60% of the world's seaborne cargoes and 30% of the world's shipping containers pass through China's ports, making shipping a significant source of emissions in port cities. Aside from the adverse health effects, air pollution has also been linked to a reduction in economic productivity. Authorities are acutely aware that curtailing the maritime contribution – the cause of 10% of NOx and SOx in the air – is an essential component in finding a solution to its pollution problem.

In 2016, the China Maritime Safety Administration introduced the first domestic emissions control area (DECA) along the Yangtze River Delta (covering Shanghai, Suzhou and Nantong) marking an important first step towards tackling ship emissions from ships. It has since designated DECAs in two further prosperous coastal zones: the Pearl River Delta (covering Shenzhen, Guangzhou and Hong Kong) and the Bohai Rim (covering Beijing and Tianjin). Ships entering these areas must use marine fuel of not more than 0.5% (m/m) sulphur content. In lieu of low sulphur fuel, vessel operators can opt for alternative compliance measures deemed equivalent.

The program structure reflects that of the IMO ECAs, but China's DECA designations and rules are independent of IMO rules. The effectiveness of these instruments is due to be reviewed in 2019, when authorities will consider imposing stricter requirement of 0.1% (m/m) sulphur content, and/or extending their geographical scope.

Of course, regulations are only effective if they are properly enforced. Between April and November 2016, Shanghai's enforcement agency inspected more than 1,800 vessels, of

which 55 were found to be violating the rules and issued with fines. Two months after the regulations were introduced at four ports in Bohai Bay, two ships, including a foreign flagged ship, were caught using non-compliant fuels.

Chinese authorities have also been encouraging the use of cold-ironing, whereby ships at berth shut down their engines and draw power from cleaner land-based energy sources. The goal is to equip almost 500 berths with shore power by 2020, and the government is subsidizing implementation.

Reflecting a wider trend in the shipping industry for switching to cleaner fuels, China also aims to double its number of LNG fueled vessels, again by 2020. This transition will be encouraged by developing LNG bunkering infrastructure at port terminals.

Stepping back to see the bigger supply chain picture, policymakers are also examining how freight is transported to and from ports. Today, most is unloaded from ships and carried inland by trucks. This emissions-intensive process could be avoided with greater investment in infrastructure to connect and synchronise seaports with railways for greater efficiency.



Fuel for the journey

New alternative fuels are giving shipowners more options to stay in compliance

With the introduction of a range of various environmental regulations over recent years, restricting the levels of NO_x, SO_x, and CO₂ from vessels, the shipping industry has found itself at a crossroads. Staying in compliance with the new rules ultimately boils down to two choices – use technology to cut emissions, or use alternative fuels.

For some, the adoption of exhaust gas cleaning systems (EGCS) provides the perfect solution for reducing SO_x emissions; however, other options are also available. Technical challenges posed by new regulations have become the impetus in the shift towards green energy. Fuels such as LNG, methanol, and LPG, widely recognized as environmentally-friendly alternatives to fossil fuels, are rapidly becoming a viable source of energy for ships.

The IMO outlined many possible emission scenarios that could arise

Staying in compliance with the new rules, ultimately boils down to two options – use technology to cut emissions, or use alternative fuels

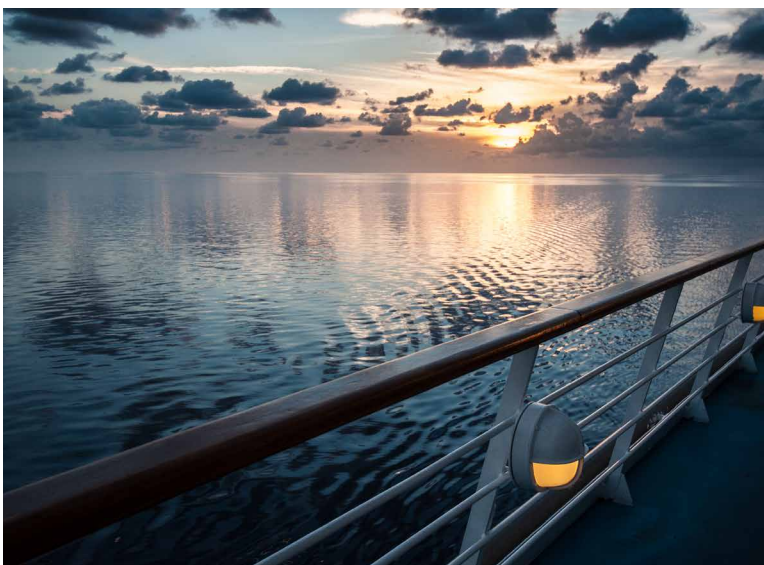
during the 2012-2050 period in its third Greenhouse Gas Study (2014), specifically a general prediction of increased efficiency in conventional fuels, as well as an increase in the use of LNG. Since the introduction of the first LNG fueled vessel in the year 2000, over 90 vessels now use LNG as fuel as of the end of 2016, and a total of 140 vessels are expected to use LNG at some point

during 2018. LNG can reduce NO_x emissions by over 90% compared to conventional fuels, making it a suitable candidate when considering Tier III regulations.

Currently, three types of LNG powered propulsion system are in general use: mid-speed electric propulsion systems, mid-speed propeller systems, and low-speed propeller systems.

Medium-speed electric propulsion systems are generally employed by inland ferries and workboats, and can be either gas-only or dual-fuel. By employing a number of electrical generators, this system offer redundancy and reliability.

Medium-speed propeller systems can also be either gas-only or dual-fuel, and have been installed on chemical tankers and tugboats. As there is no conversation loss to electricity compared to the electric propulsion system, this option is most suitable for vessels that require high load-following capabilities.



Low-speed propeller systems are available for dual fuel use. Their high output makes them ideal candidates for larger ships, and are currently used in container vessels in North America and PCCs in Europe.

Gas-firing engines are also another option. However, some variations may be prone to the knocking and methane slips. Furthermore, high pressure engines do not meet Tier III regulation standards.

Japan's first LNG-fueled tugboat, Sakigake, was delivered to NYK Line by Keihin Dock Co. Ltd. in 2015 after exhaustive research carried out with the assistance of Tokyo Gas Co. Ltd., Niigata Power Systems Co. Ltd., Air Water Plant & Engineering Inc., Wing Maritime Service Corporation, Japan's Ministry of Economy, Trade and Industry and the Ministry of Land, Infrastructure and Transport. ClassNK carried out the feasibility study and provided technical advice for the project. The vessel is equipped with the 28AHX-DF dual fuel engine developed by Niigata Power Systems, and runs on both diesel and gas fuel.

LPG has been expected by the industry to be a suitable alternative. Today, over 1,000 LPG carriers are in operation across the world. Not only meeting IMO SOx requirements, the

recent development in shale gas and shale oil has led to an increase in the transportation of LPG. Also, as LPG can be stored safely in liquid form at ambient temperatures at roughly just above 10 bars (approximately ten times normal atmospheric pressure), it is more straightforward than LNG which needs to be stored at extremely low temperatures and requires additional equipment.

However, there are other factors that must be considered when using LPG as a fuel. As it is heavier than air, ventilation systems must be installed in enclosed spaces in the event of leaks. Also, due to its low flash point, emergency measures must be in place in the event of leakage. Despite the technical challenges involved in using LPG, its relatively low volatility allows for safe 'ship to ship' transfer, making it a possible

candidate for bunkering, as long as proper safety procedures have been established and approved by the relevant port authorities.

Another option available to owners is methanol. While obviously the upcoming SOx emission regulations is one reason behind the rise in its practical application as a fuel, its use as raw material in the manufacturing of many products such as glues and plastics mean that it is manufactured in large quantities around the world. This already established network could potentially serve as the foundation for the fuel supply infrastructure, encouraging the adoption of methanol as a fuel. Methanol can also be stored in liquid form at ambient temperatures under normal atmospheric pressure, meaning that it is easier to handle than fuels such as LNG.

*ClassNK is providing the support
needed to realize the practical
implementation of these new and
exciting opportunities*

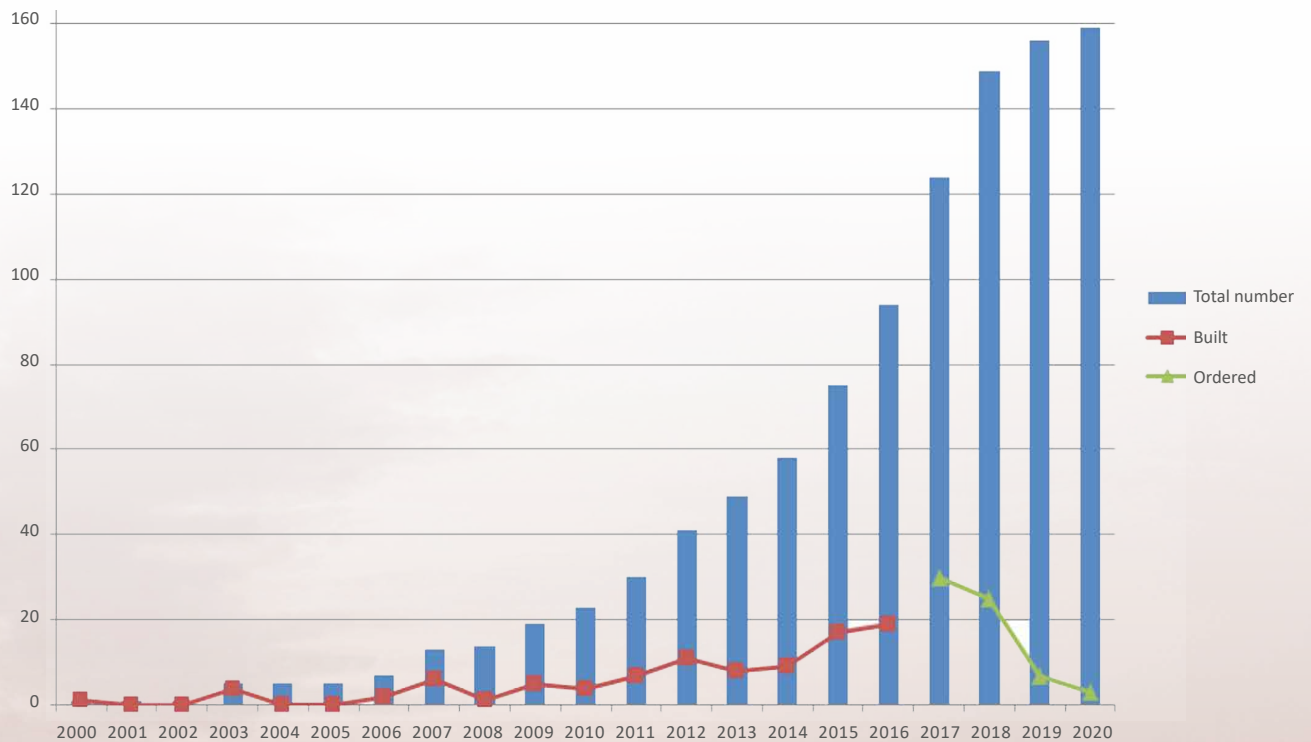
Methanol is already being used in the dual fuel engine of a Ro-Ro passenger ferry operating in the Baltic Sea since 2015, allowing it to keep its emissions in line with limits enforced in that ECA. The next development in the use of methanol as a fuel greatly expanded the scope of operations. 2016 saw the construction of the world's first methanol fueled ocean-going commercial vessels. The vessels, three oil/chemical tankers including the

Taranaki Sun, were built by Minaminiippon Shipbuilding Co., Ltd., and employ MAN B&W ME-LGI 2-stroke dual-fuel engines. The engines were developed by MAN Diesel & Turbo and can run on methanol, fuel oil, marine diesel oil, or gas oil. "When operating on methanol, the ME-LGI significantly reduces emissions of CO₂, NO_x and SO_x. According to the manufacturer, the "operational switch between methanol and other conventional fuels is

seamless," allowing for the smooth entrance and exit of ECAs during long international voyages.

Only time can tell which fuels will become the standard in the face of increasingly stringent environmental regulations, but with the latest technical knowledge and guidelines, ClassNK is providing the support needed to realize the practical implementation of these new and exciting opportunities.

Number of LNG-fueled vessels 2000 - 2020





Industry partnership with JOSCO

Interview: Mr. Yang JianMing, President of Jiangsu Ocean Shipping Co., Ltd. (JOSCO) and President of Taicang Container Lines Co., Ltd

Cooperation between JOSCO and ClassNK began in the early 1990s. From the initial focus on purchasing second-hand vessels to the more recent ordering of new ships classed by ClassNK, JOSCO has always fully recognized the society's high quality service and believed in its professional technical standards.

There are up to 15 owned vessels classed with ClassNK in JOSCO's existing fleet, accounting for more than half of its managed fleet. We are highly honored to have an interview with Mr. Yang JianMing, President of Jiangsu Ocean Shipping Co., Ltd. (JOSCO), on the prospects for the industry, for the company and for its future cooperation with ClassNK.

Can you give us a brief history of JOSCO?

JOSCO was established on 18 February 1980, and is now a subsidiary of Jiangsu Province Port Group Co., Ltd. JOSCO is mainly engaged in the field of international maritime transport of goods, international cargo agency, international shipping agency, manning agency, provision supply, etc.

Our company believes in the management concept of "prudent operation in positive attitude with focus on practical work, innovation and sustainable development" and insists on reform and innovation by concentrating on improvement of the quality and efficiency of the company.

JOSCO was initially a single-vessel (3,000 dwt) shipping company. After more than 30 years of careful cultivation, our company has developed into a comprehensive ocean shipping enterprise. With an annual freight lifting of over 10 million tons, we own and manage more than 40 modern merchant vessels of over two million dwt, operating in navigation areas covering over 100 countries all around the world. JOSCO has established a good reputation, gaining an average annual net profit of 100 million RMB over ten consecutive years despite the general deficit in the shipping industry.

Are there any challenges you have faced recently? How did you, or do you intend to, overcome them?



Mr. Yang JianMing
President of JOSCO

ClassNK has an efficient, professional team providing owners with a full range of high quality services

The entire shipping industry has met with unprecedented difficulties since the financial crisis in 2008. The situation is now that there are fewer goods compared with more ships with lower charter rates. We have not been passive in the face of these difficulties; instead we aggressively search for opportunities to pull us through the market's difficulties by innovation and by speeding up the adjustment of our fleet structure. We have eliminated seven old general cargo ships and built eight new ultra-smart, energy-saving and environmentally-friendly vessels from 2009 to 2016, which improved our ability to make profits. We have developed in an adverse situation, gaining profits every year and achieved great results during the general deficit of the shipping industry.

JOSCO operates in both the bulker market and the container market; what are your respective outlooks on these markets? Do you plan to concentrate more on one of these markets in the future?

JOSCO has a long history of 37 years, mainly engaged in bulk carrier operations and the oceangoing container shipping business. Our bulk carrier fleet operation is a global business, in which we'll continue to accelerate the restructuring and to transform our organization and improve quality and efficiency in pursuit of excellence. The bulk market has experienced a decade of

low range running, and I think it is expected to come out of the trough in 2018-2019.

Our oceangoing container line business is mainly based on and serves ports in Jiangsu Province. We have opened international container shipping lines in the major ports in and around the Yangtze River (e.g. Taicang, Nanjing, Nantong, Zhangjiagang, Changzhou, Lianyungang, etc.). The container shipping lines are mainly geared towards ports in Southeast Asia, Japan, Korea and Taiwan, with service frequency of ten vessels a week. Of the two business activities, my job will mainly focus on international container transport in the future in order to realize the full coverage of container services and better support Jiangsu's export economy.

What is your geographical market? Do you aim to expand this, or concentrate your activities in this area?

In the international bulk carrier fleet business we aim to continue to compete in the global market.

Meanwhile, in the oceangoing container liner business we concentrate mainly on the major ports in and around the Yangtze River in Jiangsu Province together with Lianyungang port with the opening of oceangoing container shipping lines. In addition, we plan to launch shipping services to Australia and America based on

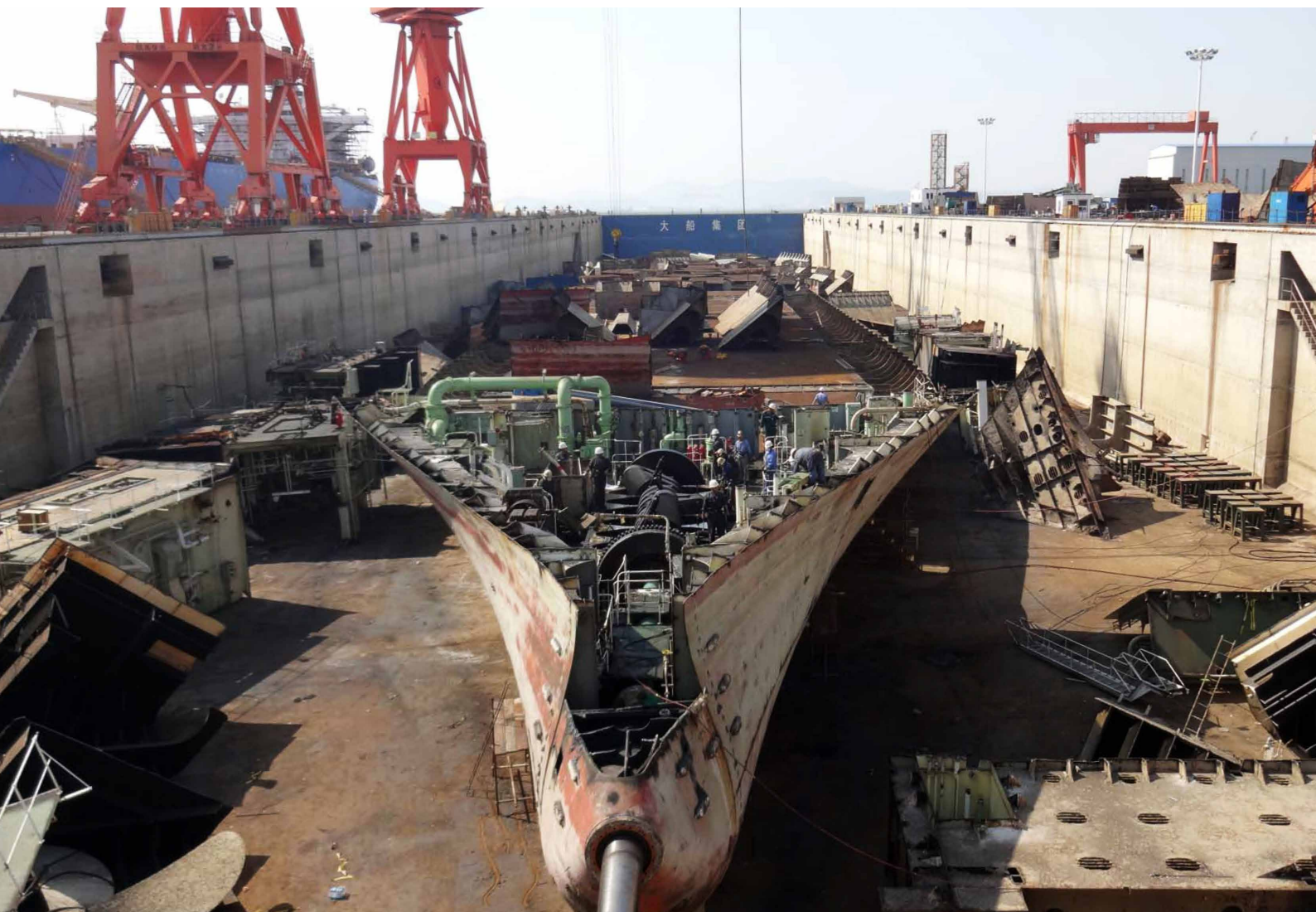
consolidation and to increase the frequency of the existing direct lines towards Southeast Asia.

What do you think will be the biggest influencing factor on the shipping industry in the future?

The biggest influencing factor on the shipping industry will remain the supply and demand contradiction for the following reasons. Firstly, global shipbuilding capacity is strong and the shipping cycles will be accelerated accordingly. Secondly, today traditional ship owners have been joined in the market by a growing number of different types of competitors: cargo owners; privately-owned enterprise owners; owners from the financial sector. Today, the fleets controlled by owners in the financial sector exceed the fleet size controlled by traditional ship owners. The excessive expansion of shipping capacity is the main factor affecting the recovery of the shipping industry.

What is the benefit of ClassNK for JOSCO?

We have a long cooperation history with ClassNK of nearly 30 years. Most of our ships are classed with the society because it offers the best global service network with an efficient, professional team providing owners with a full range of high quality services. ClassNK is our most reliable cooperation partner.



Safe and sound

ClassNK outlines their approach to safe and environmentally-friendly ship recycling

From the early stages, ClassNK has been a prominent supporter of safe and environmentally-friendly ship recycling practices. Since establishing its Ship Recycling Team, ClassNK has actively been involved with the raising of standards across the world. With its "from the cradle to the grave" approach, the society has developed a number of solutions to support both ship recycling yards

and shipowners covering the development of Inventory of Hazardous Materials (IHM), Ship Recycling Facility Plans (SRFP), Ship Recycling Plans (SRP), among many others.

ClassNK has carried out investigations into resource circulation technology of ships, contributed to a range of third party projects and put significant resources into re-

search on recommended practices for greener ship recycling.

These efforts have been recognized by the industry, with the society picking up both the 'Clean Shipping Award' at Seatrade Awards and the 'Safer, Cleaner Seas Award' at the Lloyd's List Asia Pacific Awards in 2017, and the 'Environmental Protection Award' at the IBJ Awards in 2016.

IHM and SRFP for safer and greener ship recycling

Mr. Junichi Hirata, ClassNK Ship Recycling Project Manager, talks about its achievements on ship recycling

Following the increasing awareness and needs for better ship recycling practice, IMO adopted a proactive approach to ship recycling. Dating back to the middle of 2000s ClassNK engaged in the verification of the Green Passport initiative, developing a list of hazardous substances at the very beginning stage, and involving its experts closely in IMO discussions. The idea of Inventory of Hazardous Materials superseding Green Passport was brought up at MEPC56 in 2007, whose development method has been well organized so that the industry can transmit the necessary information with common forms, Material Declaration (MD) & Supplier's Declaration of Conformity.

The concept of MD certainly gave the clear understanding of what should be reported and streamlined the entire process. However, ships consist of thousands of products, which makes cataloguing no easy task. The shipbuilder has to request the MD from hundreds of suppliers and monitor its collection status.

Then, if the product contains hazardous materials, its location on board and calculated mass by each location should be recorded to the IHM. Also, as a class society, our approval process is far from simple and straightforward. To grant approval, we must examine each MD to see if they are accurately reflected on the IHM. Along with the IMO guideline development, ClassNK has carried out IHM development trials with the industry to better understand challenges faced by both us as the classification society, and them as the shipbuilder. At the trial for new ships, partner shipbuilders attempted to create the required IHM only by means of traditional paper exchange. However, as the process proved immensely complicated and time-consuming the actual number of shipbuilders that successfully completed the IHM was quite low; although given the circumstances this was not entirely unexpected.

In 2008 we released the first version of a ClassNK-developed software solu-

tion enabling shipbuilders to collect MD from suppliers electronically and generate the IHM just by inputting the product location. Through another project with assistance of this software we were able to receive the successful outcome from all the partners.

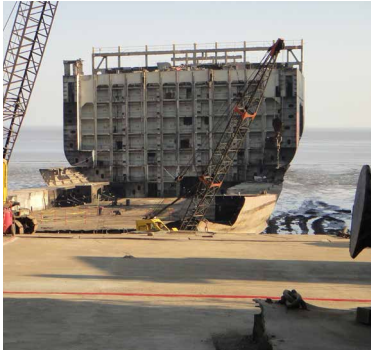
Later the software was upgraded to the web-based "PrimeShip GREEN/SRM" service, which has been in operation since 2010. Currently, more than 80 shipyards and 2,800 suppliers around the world are registered users of the service, making it the de-facto service for the industry. PrimeShip-GREEN/SRM provided ground-breaking "from cradle to grave" functions for the IHM, supporting the development, maintenance, and finalization just before the recycling. This allows ClassNK to complete the examination quickly as checkers do not have to be concerned with the consistency of IHM with the original MD, concentrating only on the details, thus streamlining the process.

ClassNK's trials have been also carried out for IHMs in existing ships with the cooperation of a number of shipowners. Those experiences have contributed to organizing the



Mr. Junichi Hirata, ClassNK Ship Recycling Project Manager

ClassNK has expanded its business to the verification on Ship Recycling Facility Plan (SRFP) in line with the Hong Kong Convention after the long and detailed research



development method best suited for utilizing document based checks, which can reduce the time and cost incurred from onboard inspections. The outcomes are reflected on the training course to train the capable IHM experts for existing ships.

More shipowners have paid keener attention to how to terminate their fleet because of not only new regulations like the HKC but also the necessity to fulfil their own corporate social responsibility. More than a few shipowner associations have already expressed their hopes for the earlier coming into force of the HKC, and many shipowners have already taken the first steps forward voluntarily. The price is no more sole factor to choose the grave, and they are seeking the place where the ship can be recycled in safer and greener manner. For choosing proper ship recycling facility, the verification of the third party can be helpful guidance. Responding those needs both from shipping companies and recyclers, ClassNK has expanded its business to the verification on SRFP in line with the HKC after the long and detailed research for ship recy-

cling facilities and practices across the world. ClassNK has performed document examination and thorough site inspections to verify that common safety and environmental concerns were properly addressed including, spill prevention, control and countermeasures, storm-water pollution prevention, debris prevention and control, incident and spills reporting procedures, environmentally sound management of hazardous materials. Those procedures have been described in detail and published as "ClassNK Guideline for Ship Recycling", available at ClassNK website.

In 2012 ClassNK firstly issued its Statement of Compliance (SoC) to the facility in China, but arguably more importantly it marked the issuance of the world's first statement in line with the HKC. Also in 2015 ClassNK issued the first statement for a ship recycling facility located in South Asia. So far, ClassNK has issued sixteen statements in total for yards in Japan, China, India, and Turkey, with a view to expand the scope of these activities in the near future. These statements are highly regarded as truly safe and green testimonials. Prominent in-

dustry players from shipowners to labor unions have demonstrated their support for ClassNK's initiative. The European Community Shipowners' Association (ECSA) has also been active in promoting sustainable operations. In 2016, ECSA went on a fact-finding mission "to understand how safe and environmentally-sound recycling operations can take place sustainably in inter-tidal zones in India," making particular mention of the high standard of facilities verified by ClassNK. The society has received more SRFP application to be verified and will even work harder to encourage and expand "safe and green" capacity of ship recycling.

The industry may come under pressure as we see the positive mood for early coming into force of the HKC as well as the application of EU Regulations. For smooth business operation against emerging regulations and as the part of the responsibility for better future, players in the industry are recommended to develop the IHM as soon as possible and select the verified ship recycling facilities. In any stage ClassNK will provide the reliable expertise and service to support.

HKC: an essential platform for ship recycling

Message from Hideaki Saito, Director of Shipbuilding and Ship Machinery Division at Japan's Maritime Bureau, and Chair of IMO's Marine Environment Protection Committee (MEPC)

I was delighted to see that ClassNK was honored at the Seatrade Awards and Lloyd's List Asia Awards for their ship recycling activities. Since the beginning, ClassNK have been actively involved in supporting the HKC related activities, through services such as IHM and recycling yard verification. I was pleased to see their efforts recognized, and I have appraised the

hard work everyone at ClassNK has put in up to now.

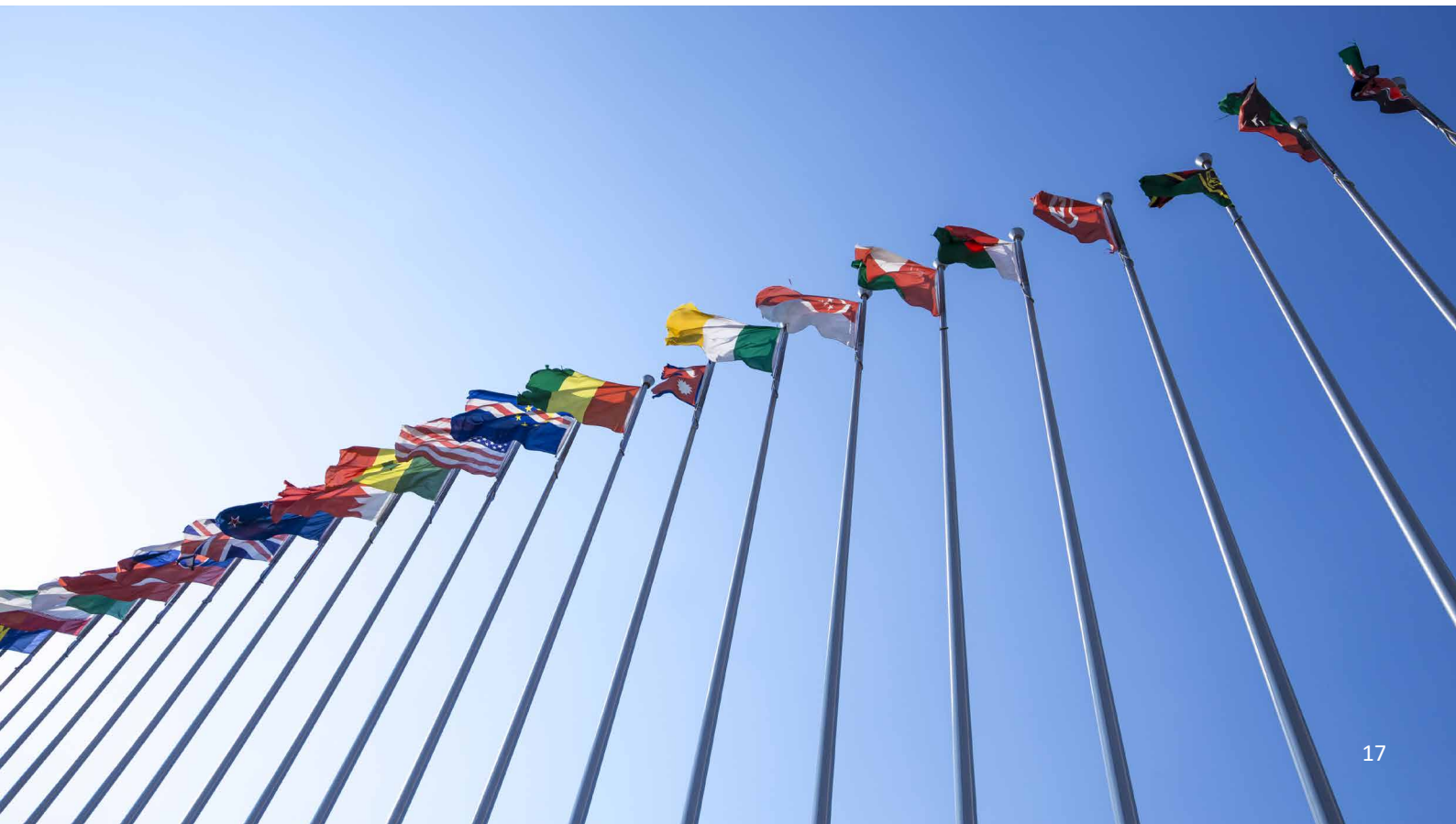
The HKC is an indispensable platform for ensuring safe and environmentally-friendly recycling of ships all over the world, and its swift entry into force is paramount. There are many environmental regulations at IMO, but with the Ballast Water

Management Convention already having entered into force, the HKC is now the next and most anticipated regulation yet to enter into force. The Government of Japan has not just progressed the preparation for early ratification of HKC, but also decided to provide Official Development Assistance (ODA) for the upgrading ship recycling yards in India in September 2017. As a member of this government, and as MEPC Chair, I am committed to working with key stakeholders including ClassNK and governments to achieve the swift entry into force of HKC.

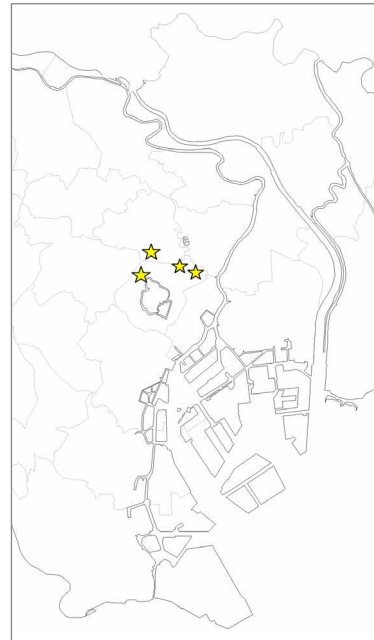
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A walk along the river



Map courtesy of www.craftmap.box-i.net

Running from Tokyo's tranquil west through the capital's bustling business area, the Kanda River has long been a fixture of the world's biggest city. A tributary of the larger Sumida River, the Kanda River has served the people of Tokyo, providing water for Edo Castle (now part of the Imperial Palace grounds) and its residents, since the late 16th century. Over the course of this time, the river was extended and renovated, and now runs over 24km through the metropolis. The Chuo Line train running from Tokyo Station to Mitaka in western Tokyo also runs alongside a 6km stretch of the river right in the middle of the city.

Underground extensions and passageways mean that it is not entirely visible above ground. However, it is a prominent feature of the central Tokyo landscape. The Kanda River passes by some of Tokyo's most popular destinations, making it a potential urban walking trail for tourists. Ten minutes' walk south of Iidabashi Station, which is conveniently located atop the river, are the remnants of Edo Castle and the Imperial Palace

grounds. Tourists and locals alike come to enjoy beautiful gardens and traditional Japanese architecture, spending hours exploring the sprawling 3.4km² refuge from busy city life. It's the perfect spot for history lovers or those just looking to relax and take in the scenery.

Further down the river lies a more modern attraction of the area – Tokyo Dome. At roughly 47,000m² in size, this impressive stadium is a haven for sports enthusiasts, particularly Japanese baseball fans coming to cheer for (or, against) the Yomiuri Giants, Tokyo Dome's home team. With a maximum capacity of 57,000, the stadium also serves as a popular concert venue, bringing big names from both the local and international music scene. Complete with onsite amusement park, shopping mall, and restaurants, there is something for everyone to enjoy.

Fifteen minutes east of Tokyo Dome is Ochanomizu, or 'tea water' in Japanese. Despite its namesake, this area is in fact renowned for its collection of musical instrument

stores. Stores of all sizes are dotted around the small district, selling instruments ranging from traditional Japanese, classical, and modern. Tucked away in the narrow streets are the quaint family-run bistros and coffee shops that remain just as popular as when they opened some fifty and sixty years ago.

The last big destination on the Kanda River is possibly its most popular among younger visitors. Akihabara, sometimes referred to as Electric Town, is Japan's hub for all electronic goods. With one-man stalls to massive multi-story department stores run by mass electronic retailers, Akihabara has everything from solder and wires to computers and home appliances. Die-hard fans of Japanese animation and pop culture also come in droves to visit the various themed cafes and numerous comic book stores dotted around the area.

With so much to see in this short stretch of the Kanda River, this is one journey you should step off the train for.

ClassNK events:

- ◆ **MARINTEC CHINA, SHANGHAI, CHINA, 5TH - 8TH DECEMBER**
Please visit ClassNK at booth N1D31-12
- ◆ **ASIA PACIFIC MARITIME, SINGAPORE, 14TH - 16TH MARCH**
Please visit ClassNK at booth B-L16
- ◆ **OTC ASIA, KUALA LUMPUR, MALAYSIA, 20TH - 23RD MARCH**
Please visit ClassNK at booth C621
- ◆ **SEA JAPAN, TOKYO, JAPAN, 11TH - 13TH APRIL**
- ◆ **OTC HOUSTON, TEXAS, USA, 30TH APRIL - 3RD MAY**
- ◆ **POSIDONIA, ATHENS, GREECE, 4TH - 8TH JUNE**

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