

ClassNK

MAGAZINE

September 2016 - 77th Edition

- ◆ *Bigger, better, safer*
- ◆ *Partners in innovation*
- ◆ *Guiding a greener industry*



Raising the bar

Welcome to the 77th edition of the ClassNK Magazine



Our industry is advancing rapidly, with new technologies being developed all the time. This advancement presents new opportunities as well as challenges across the board, which is why it is important that we make equal progress in all areas. A holistic approach to raising the standards of our industry will ensure that our activities will continue to be sustainable.

Sustainability is the key to any successful operation, but achieving it requires a serious commitment. In this edition, an interview with Ms. Annette Stube, A. P. Møller

Maersk's Head of Group Sustainability, outlines what the company is doing to ensure sustainable operations, and why it is so important. One key topic of this interview is safe and environmentally-friendly ship recycling – a sector that ClassNK is actively supporting.

The choice of ship recycling yard is ultimately the responsibility of the shipowner, but Mr. Keiji Tomoda, Japan Shipowners' Association's Ship Recycling Committee Chairman, shows why choosing yards that have proven their commitment to safety and the environment is beneficial both to them and the industry as a whole.

ClassNK works with ship recycling yards around the world to help improve standards, where so far there has been little to no support on a practical level. We have taken this opportunity to introduce just some of the yards that meet the safety and environmental standards that we recognize to be in line with the Hong Kong Convention.

Just as safety in recycling is important, it is also paramount in the construction and operation of vessels. An article on container ship safety shows some of the results of

our ongoing efforts to help improve standards and ensure the safety of life and property at sea.

An interview with Mr. Vilmos Szaroveczki, Manager Commercial, Products, TÜV Rheinland Japan highlights the necessity of partnership. The article offers insight into how TÜV Rheinland Japan and ClassNK are working together to pave the way for even further innovation.

This edition also includes interviews with two key players in the German maritime industry. Mr. Scott Jones, Oldendorff Carriers' Director of Communications, elaborates on the key to the company's continued success, and Capt. Marek Lipiec, Managing Director of DS Tankers, explains how the owner maintains its high levels of safety and efficiency.

I hope you enjoy this edition of the ClassNK Magazine.

A handwritten signature in black ink, appearing to read 'Koichi Fujiwara'. The signature is fluid and cursive.

Koichi Fujiwara
Chairman and President, ClassNK

ClassNK





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ClassNK

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ClassNK Magazine
77th Edition
Published by JLA media

ClassNK ship recycling seminar

19 May 2016 - Around 300 people gathered in Tokyo on 12 May to attend a ship recycling seminar held by ClassNK. In addition to ClassNK representatives, top industry experts from Asia and Europe discussed the current challenges of ship recycling and what the industry can do to support safe and environmentally sound recycling practices. ClassNK has been actively encouraging yards to develop the necessary ship recycling facility (SFC) plans and upgrade their facilities so that they can meet the requirements of the HKC. It has so far issued a total of nine HKC SoCs to SRFs in Japan, China and India, and is currently working in close collaboration with an additional eight SRFs in India to close the gaps identified by inspections so that they too can achieve full compliance with the HKC (see pp12-13).

ShipDC to provide marine weather info

20 May 2016 - The database service operated by ClassNK's wholly owned subsidiary Ship Data Center (ShipDC) has been set to receive marine weather information from Japan Weather Association. ShipDC acts as a platform for big data related to shipping by securely collecting, storing and providing data to users through its data center. It aims to develop the infrastructure through which data can be centrally controlled and used at a low cost in a bid to maximize opportunities for big data utilization throughout the wider maritime industry. Through Japan Weather Association's free provision of real-time marine weather information such as offshore wind (direction, speed), waves (height, frequency, direction) and ocean currents (direction, speed), users of ShipDC will be able to utilize not only vessel data but also combine it with marine weather information.

ClassNK Guideline for Noise Code

23 May 2016 - ClassNK released its Guideline for the Mandatory Code on Noise Levels on Board Ships (Second Edition). The first edition of the Guideline for the Mandatory Code on Noise Levels on Board Ships was released in July 2014, when the Code on Noise Levels on Board Ships became mandatory, to provide the industry with a summarized outline of the revised Code, a general method of noise prevention and FAQs. The latest Guideline builds on the first edition and takes into consideration recent R&D results as well as the results of discussions held at the 95th Session of the Maritime Safety Committee (MSC95).

ClassNK CMAXS e-GICSX on MOL vessel

20 June 2016 - Mitsui O.S.K. Lines (MOL) has introduced ClassNK Consulting Service's condition-based monitoring (CBM) system ClassNK CMAXS e-GICSX on the M/V *Taranaki Sun*, marking the system's first commercial application. ClassNK CMAXS e-GICSX is a next-generation CBM system that is unlike any other to date. It collects large amounts of voyage and machinery data from multiple sensors installed on electronically controlled ship-board equipment. MOL selected ClassNK CMAXS e-GICSX for the 50,000 dwt tanker in order to reduce maintenance costs through the early detection of abnormalities and determine optimum timing of parts replacement.

The screenshot displays the e-GICSX web interface. At the top, there is a navigation bar with links for TOP, Diagnosis, Q&A, Report, and Document. The main menu shows the IMO number 9999999. Below this, a table provides details for the vessel KAIJIMARU, including Job No. (2345), Ship No. (222), Engine Type (123A456B), Engine No. (1234), and T/C Type (A123). An 'UPDATE VIEW' button is located to the right of the table.

The 'SHIP STATUS MONITORING' section features a status filter set to 'Normal' (checked), with 'Warning' and 'Alarm' options also visible. Below the filter is a table with columns for SHIP NAME, MAIN ENGINE MONITORING, AUX. MACHINERY MONITORING, PERFORMANCE DIAGNOSIS, COMBUSTION DIAGNOSIS, and MAINTENANCE DIAGNOSIS. The row for KAIJIMARU shows monitoring dates: 2016/02/17 11:57, 2015/12/07 02:51, 2015/12/22 14:55, and 2015/12/07 02:51.

At the bottom, the 'MAIN MENU' section contains a grid of navigation options: Diagnosis (Performance, Combustion, Oil Data, Maintenance), Q&A (New Question, Q&A History), Report (Report Download), and Document (Technical News, Download).



New ClassNK survey office in France

1 June 2016 - ClassNK opened its new Nantes Office in western France with operations commencing 1 June 2016. This marks the third exclusive survey office for ClassNK in France. ClassNK has already established survey offices in Dunkerque and Marseille. Through the opening of its latest office, ClassNK will improve the efficiency of its ship surveys in the Bay of Biscay region, allowing it to respond swiftly to clients' needs throughout the country. ClassNK will continue to expand its worldwide survey office network in order to meet its clients' requests and provide timely and high quality services.

ClassNK returns to Iran

15 June 2016 - ClassNK has resumed operations in Iran with the reopening of its Tehran Office and agreements with the Iranian Classification Society (ICS) and Ports and Maritime Organization (PMO), Ministry of Roads & Urban Development of Iran. ClassNK originally opened its Tehran Office back in December 2009 but closed the office in 2012. In light of recent changes in the region, ClassNK has decided to reopen its Tehran Office as of 15 June. As part of its plan to further strengthen operations in the region, the Society also signed an agreement with ICS in February 2016 which sets out a framework for surveys and certifications for NK/ICS dual-classed ships.

"K" Line installs ClassNK CMAXS LC-A

9 June 2016 - "K" Line Ship Management (Singapore) Pte Ltd has selected ClassNK Consulting Service's machinery condition monitoring and automatic diagnostic system ClassNK CMAXS LC-A for use on one of its container vessels, marking the first commercial application of the software. "K" Line Ship Management (Singapore) Pte Ltd selected ClassNK CMAXS LC-A after a successful trial installation in 2014 delivered proven fuel and lubricating oil savings of 200 tons/year. The trial was carried out as part of a joint research project in collaboration with ClassNK and Diesel United Ltd. ClassNK CMAXS LC-A's main engine optimum setting value function supports ship operators and ship management companies in reducing fuel and lubricating oil costs while its troubleshooting function supports crew in preventing secondary damage and streamlining necessary repair and maintenance work.

ClassNK amends Steel Rules

30 June 2016 - ClassNK amended its Rules and Guidance for the Survey and Construction of Steel Ships in response to the latest industry developments, including amendments made to the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code). IMO decided to carry out the first full review of the IGC Code to reflect the latest technological advancements and increasing ship size. Amendments to the Code were adopted as resolution MSC.370 (93) at the 93rd session of the IMO Maritime Safety Committee (MSC 93) held in May 2014. ClassNK has amended its Rules and Guidance based on resolution MSC.370 (93) which will apply to ships carrying liquefied gases in bulk whose keels are laid, or which are at a similar stage of construction on or after 1 July 2016. ClassNK Rules and Guidance can be viewed online by registered ClassNK "My Page" users.

Industry-first Archive for ClassNK

1 July 2016 - ClassNK established ClassNK Archive Center (NKAC), the maritime industry's first onshore digital archive center that fully complies with IMO Goal-based ship construction standards (GBS), Ship Construction File (SCF) regulations and the Industry Standard, which entered into force on 1st July. The complete solution offers safe and secure storage of SCF documents, functioning as the third-party keeper of the "SCF Supplement Ashore" in a digital format, while also keeping a full digital copy of the "SCF Onboard" for backup purposes. It can also be used as an information storage and management platform for other ship drawings. The secured cloud-based system includes an intrusion prevention system, remote data protection and many other advanced security features. As an essential service for both shipowners and shipbuilders, this application of IMO GBS is anticipated to spur increased demand.

Annual Report on Port State Control

8 July 2016 - ClassNK released its annual report on Port State Control. The report aims to assist ship operators and management companies in maintaining compliant operations by providing information about ships detained by PSC as well as deficiencies that were found on board from many port states in 2015. The ClassNK report also provides detailed analyses on PSC detentions by flag state, port state, ship type, ship size, and ship's age as well as a summary of major amendments made to international conventions such as the SOLAS Convention. These amendments have further widened the scope of PSC inspections, a trend that will undoubtedly continue as the rules applied to ships increase and diversify. PDF version of the Port State Control Annual Report is available free of charge by accessing the ClassNK website: http://www.classnk.or.jp/hp/pdf/publications/Publications_image/PSC15E.pdf

ClassNK certifies TÜV Rheinland GTAC

6 July 2016 - ClassNK has appointed the Global Technology Assessment Center (GTAC) of TÜV Rheinland Japan as a certified laboratory at an appointment ceremony held at GTAC in Yokohama. The appointment is in accordance with a worldwide partnership agreement that the two parties entered into in September 2015 to expand their testing and certification services portfolio and better serve their clients. The appointment reduces the burden for manufacturers by streamlining the testing process and eliminating the need for a ClassNK representative to attend some testing for type approval certification of automatic devices and equipment for both on-shore and maritime installations. The scope of the appointment includes a number of environmental tests, such as dry heat tests, damp heat tests, vibration tests, cold tests, salt mist tests and EMC tests (see pp.16-17).



ClassNK Chairman and President Koichi Fujiwara handing over the appointment certificate to TÜV Rheinland's Executive Vice President Products Mr. Holger Kunz

ClassNK launches NK-SHIPS app

7 July 2016 - ClassNK launched the NK-SHIPS app, a mobile version of the free, web-based information service NK-SHIPS for owners, operators, and managers of NK-classed vessels or vessels whose ISM/ISPS/MLC are registered with ClassNK. Clients can now access information to manage their fleet on-the-go using the app via their smartphone or tablet.

Item	Due date / range
Class SS	23 Mar 2018
90 IS	23 Dec 2014 - 23 Jun 2015 or 23 Dec 2015 - 23 Jun 2016
90 AS	23 Dec 2015 - 23 Jun 2016
90 Annual Survey(AS)	Remain 90 days Last date: 16 Feb 2014
PS1	23 Mar 2018
Planned Machinery Survey	>
Cargo Handling Appliances Survey	>
M0 SS	23 Mar 2018
90 M0 AS	23 Dec 2015 - 23 Jun 2016
LL RS	23 Mar 2018
90 LL AS	23 Dec 2015 - 23 Jun 2016

Developed for an optimized viewing experience, the NK-SHIPS app allows for quick and easy navigation. Users can browse and manage ship particulars, and monitor the status of surveys/audits, due dates, and expiry dates of certificates for ships in their fleet anytime, anywhere. The NK-SHIPS app is available to both iOS and Android™ users and can be downloaded for free from the App Store and on Google Play™. A valid NK-SHIPS user account is required to login to this app. For more details, please go to the ClassNK website: <http://www.classnk.com/hp/en/activities/portal/nk-ships.html>



Road to green ship recycling

Interview: Ms. Annette Stube, Head of Group Sustainability, A.P. Møller Maersk

A.P. Møller Maersk was established over 100 years ago and is now the world's largest container shipping company. Would you say the company philosophy has changed over this time?

As a group we have definitely changed, otherwise we wouldn't have survived. It's really a matter of constant change. However, as we have been, and still are a family-owned company, I believe the same family values have remained constant throughout our history and are still very vibrant today. We are a large organization and are affected by change so we need to adapt to a new reality all the time, but the approach we take to our

business is very much in line with these values. The ethos of the company has always been to do business in a responsible way and be a good corporate citizen. That has been with the company for many years, and a core consideration is 'how we can do this responsibly'. It's a matter of how we impact the people and the environment.

What does this ethos mean in terms of day-to-day operations?

More than anything, our primary concern is safety, and this includes extending the same requirements to our suppliers. From the yards that build our vessels, to the factories that make the tables for our

offices, and the contractors we use to hire employees, we hold our entire supply chain to the same standard. It isn't just a case of looking at things topic by topic, it is considering how we can mitigate negative impacts we have on the world and our stakeholders.

When it comes to ship recycling, what factors are most important for you? What do you look for in a ship recycling facility?

Again it comes back to our core principle. First and foremost, our concern is for the people who are breaking the vessels. Are they safe in the workplace? Are they receiving a proper salary? These are the



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For us, the kind of level of certification that ClassNK delivers, which very few others do, is our starting point for working with the yards

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things we have to consider. Then, of course, we need to make sure that we are not polluting the environment. This has meant that we have taken our vessels to yards in China and Turkey for a number of years, but now that Alang [India] has opened up four yards investing in responsible ship recycling, with more joining them, this is something we want to support. We have already landed two vessels in Alang and the breaking has started. It is a demonstration that it is possible to carry out responsible ship recycling in Alang, which is something that hasn't been the case for many years.

We think it's very important that we, and other shipowners, are there to support this positive development. As owners, we must require ship breakers to recycle our ships in a responsible way. It's incredibly important that this window doesn't close. If shipowners are not willing to make those requirements and pay the price for responsible ship

recycling, then why would shipyards bother to upgrade like we've seen with the four yards [in Alang]? Right now there is a situation in Alang, as well as Bangladesh and Pakistan, where yard owners are looking to the four 'leadership' yards that have started upgrading and asking themselves whether it was worthwhile. Of course, if they see that nobody is willing to pay the price for responsible recycling, then why would they upgrade? There are many vessels that are being recycled today, and in fact 70 percent of those are being recycled at substandard beaches. This is something we have to change and now there is the window of opportunity. It's very important for us as a shipowner that we start changing this industry.

Has ClassNK supported your activities in any way?

ClassNK has played a huge part in Alang, working with these yards at a very early stage, when nobody

else did quite frankly. Another major step was working out the right standard in line with the Hong Kong Convention, and actually certify these yards accordingly. For us, the kind of level of certification that ClassNK delivers, which very few others do, is our starting point for working with the yards. If yards cannot deliver to that level, we won't even start working with them. We are very grateful for the help that ClassNK and the Japanese government have provided in Alang. It is hugely important to start changing that industry, which has been problematic for the shipping industry for decades.

Environmentally-friendly ship recycling goes a long way to helping ensure continued sustainability in the industry. Are you carrying out any other sustainable activities?

Yes, there are lots of things going on. I think one different perspective to doing business is not just mitigating any negative impacts, but also accelerating our positive impacts. One of our key initiatives is enabling trade. We are looking at where we can help remove trade barriers so small and medium-sized enterprises, especially in developing countries, can get access to international supply chains, larger markets and get better prices for their products. This allows them to grow in their home countries and



create more jobs, in turn creating better living conditions for the people there. Obviously this is an advantage for Maersk as well. The growth of these businesses means there are more containers to move. It's really a win-win situation both for us and the societies that we support. This is crucial, and also goes back to ship recycling, with a common denominator: companies must find ways to engage the core of their business to have a real impact and make improvements that will benefit both themselves and the rest of the world.

What are you doing to help remove these trade barriers?

We work in partnership with governments and local NGOs. One example is the *Shipping Information Pipeline*. We started this project a few years ago in Kenya together with an NGO called Trademark. We found out that to transport a container from the farmer in Kenya to the supermarket in Rotterdam takes more than two hundred stamps. This creates inefficiencies that can lead to delays among other problems. This is why we created a cloud solution together with other partners that contained all the relevant information allowing all the stakeholders to plug in and get the correct information when they need it. This process can actually reduce the cost of transporting a container

“ We are very grateful for the help that ClassNK and the Japanese government have provided in Alang

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by 50 percent. If we can reduce the costs in this way, then we can deliver a lot more cost efficient transport for a lot more companies allowing them access to international supply chains. This has been successful in Kenya, and there is high interest from many other governments in developing countries that can see that this can open up opportunities for local companies. We are also working with the World Trade Organization and aid agencies to scale this up. This is just one example of how, as a business, we are working to remove trade barriers.

Anything else to add?

Actually, I would like to return to ship recycling, as it really is a matter of huge importance. As a shipping company you have a choice whether to stand on a pedestal to protect your high standard and wait for everyone else to catch up and for the yards to upgrade. Or you can choose to engage with

the yards and help them get there, using your investment so that they are able to improve standards. We have chosen the latter, and I think it's important that shipping companies consider that this is actually their own choice. They can choose to stand on the sidelines and wait, or be actively engaged to help change this industry, which is what we really need.

So the time is now for responsible ship recycling?

Absolutely, I don't think we should wait for the ratification of the Hong Kong Convention. I think it will be a great help and should be promoted, but the window for actually changing things on the ground is now, and it may not be there in a year if nothing is happening. The incentive for shipyards to upgrade is now, and they need our help. We have seen ClassNK driving this support, which has been an incredibly important movement for us to follow.

With responsibility comes sustainability

An early response is needed to pave the way for safe and eco-friendly ship recycling

With potentially hazardous material and the danger of serious injury if safety procedures are not followed, ship recycling is by no means a simple task. However, the reuse of valuable resources as well as the proper disposal of materials that could harm the environment means that it is a vital part of our industry.

The onus for responsible recycling lies not only with the ship recycling facilities, but also with the owners themselves. In an effort to provide an industry-wide standard, IMO adopted the Hong Kong International Convention for the Safe and Environmentally-Sound Recycling of Ships. In addition to covering the operation of ship recycling facilities, the Convention also incorporates certification and reporting requirements.

However, since the adoption of the Convention in 2009, the regulations are yet to enter into force, leaving many owners and recycling facilities in limbo. According to Mr. Keiji Tomoda, the Japan Shipowners' Association's Ship Recycling Committee Chairman, this situation is unsatisfactory.

"There is little support in place for recycling at the moment," says Tomoda. "Recycling facilities have been left to find their own sustainable mode of operating while the industry waits for clear guidelines to come into force."

Recognizing the need for urgent assistance, ClassNK became the first classification society in the

world to issue Statements of Compliance (SoC) to ship recycling yards in line with the Convention.

"For owners, independent verification from a credible party is a major factor in choosing where to recycle their vessels," according to Mr. Tomoda. "All too often, yards claim to carry out safe ship recycling backed up with certification when in fact their operations are nowhere near the standard required. By issuing Statements of Compliance in line with the Convention, ClassNK is showing owners how and where they can successfully perform acceptable recycling, and at the same time promoting the responsible activities of these facilities."

A major aspect of the regulations is ensuring the safety of workers at these facilities. The majority of ship recycling yards are located in Asia, specifically in the Indian sub-continent. In some cases, working practices fall far below acceptable safety levels that are not only harmful to the environment but a potential risk to human life. Despite significant improvements by many facilities, the reputation of ship recycling in the region has suffered. In an effort to identify yards that are in compliance with regulations, ClassNK has issued SoCs to specific yards in Gujarat, India, marking the first facilities in South Asia to receive such verification.

"To ensure that our vessels are recycled in a responsible manner, we visit yards to see their operations



first-hand," says Mr. Tomoda. "We have been to India and inspected yards in Alang seeking Statements of Compliance from ClassNK. They have made significant investments to bring their operations up to code, and it is time that we recognize this. These are the yards that we need to support with our business, and show the sector that this is the only standard that is acceptable.

"One more thing I wish to draw attention to is the positive initiative taken by Japan Federation of Basic Industry Worker's Union (JBU) to educate local workers by building a training center in Alang, India. This is the proper direction to aim at, with all stakeholders sharing the same objective. As a core member of IndustriALL, JBU involvement will be critical in the successful building and managing of the training center.

"Without this initiative, not only will the stimulus for the responsible operation of these facilities be



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threatened, but it will also be a clear signal to other yards that there is no incentive to even consider making improvements. Then we will be back to square one.”

Support for responsible ship recycling is not just coming from Japan; the European Community Shipowners’ Association (ECSA) has also been active in promoting sustainable op-

erations. In April 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,” which made particular mention of the high standard of ClassNK verified yards in Alang.

The efforts of the group were carried out “with a view at facilitating

prompt ratification of the Hong Kong Convention,” underscoring industry-wide demand for clear guidelines on recycling. That sentiment is clearly shared by the Japan Shipowners’ Association.

“The time for ratification of the Hong Kong Convention is now. Only after the regulations have come into force can we ensure safer and environmentally-sound recycling,” says Mr. Tomoda. “If we leave it any longer, we risk losing the tremendous progress we have seen in South Asia. As shipowners, we are committed to supporting the sustainable operations of these yards, and I hope that in the near future this support is bolstered with the full backing of the Hong Kong Convention.”

ClassNK is the world’s first classification society to issue SoCs in line with the Hong Kong Convention, and has already verified nine ship recycling facilities in China, Japan, and India.

Guiding a greener industry

ClassNK is supporting the improvement of ship recycling standards

Ship recycling is a long-established industry, but incoming regulations are bringing standards into the 21st century. Since first being raised at the 44th MEPC session in March 2000, massive strides have been made at IMO towards improving ship recycling practices around the world. Arguably the most important of the new measures was the adoption of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships in 2009. While the Convention has not yet entered into force, the proposed regulations provide ship recycling facilities with much needed guidelines for improvement.

The Convention is an essential framework for improving practices, but ship recycling facilities themselves have recently been the driving force behind change. Recognizing that bringing their practices in line with the Convention would greatly reduce environmental risks, improve safety, and ensure sustainable activities, key ship recycling facilities have been taking the competitive initiative by reexamining their procedures.

However, best intentions and half measures are not enough when it comes to ensuring safe and environmentally-friendly operations and self-examination revealed the need for independent verification. For this reason, ClassNK set out to work with ship recycling facilities directly to support their efforts in complying with the new standard. Classification societies have a re-

sponsibility to help ensure safety and protect the environment, and that task does not end with the life of the vessel.

After seeing the progress made by ship recycling facilities around the world, and recognizing the need for support, ClassNK established its Ship Recycling Team. Working closely with subsidiary ClassNK Consulting Co. Ltd., the team began working on solutions to take the burden off the industry. One such solution was PrimeShip-GREEN/SRM, software which allows users to create their Inventory of Hazardous Material (IHM) based on information contained in the Material Declaration (MD) and Supplier's Declaration of Conformity (SDoC). All of these documents are required by the Convention.

Creating IHMs almost automatically from the shipbuilders' input of product locations slashes the man hours required for the task by up to 90%. The software was launched in 2011, and was made available free of charge to the industry. Now the de facto standard for IHM development, PrimeShip-GREEN/SRM includes over 2,600 registered companies and in 2015, 28% of new ships registered with ClassNK were delivered with IHMs made using the software, despite the fact that the Convention has yet to become mandatory.

ClassNK issued the world's first SoC to Zhongxin Shipbreaking & Steel Co. Ltd., in December 2012

after a thorough review of its Ship Recycling Facility Plan (SRFP). This documentation verifies that Zhongxin Shipbreaking & Steel Co. Ltd. is operating in a responsible and environmentally-friendly manner in line with IMO requirements.

Before issuing the SoC, ClassNK carried out document examination and thorough site inspections to verify that common environmental concerns were properly addressed such as:

- ◆ Spill prevention, control and countermeasures
- ◆ Storm-water pollution prevention
- ◆ Debris prevention and control
- ◆ Incident and spills reporting procedures
- ◆ Environmentally sound management of hazardous materials (PCBs, ODS, paint etc.)

Many other facilities have also seen the advantages that can be gained from independent verification of their operations. As of the end of August 2016, ClassNK has issued nine SoCs to ship recycling facilities in China, Japan, and India ahead of the entry into force of the Convention.

The SoC not only guarantees that recycling operations are carried out in a responsible and sustainable manner; it also means that facilities with this documentation will be able to hit the ground running once the Convention is in force.

Ship recycling yards issued with HKC SoC by ClassNK



Dalian Shipbuilding Industry Marine Service Co., Ltd.

Location: China (Liaoning Province)
 Estimated annual recycling capacity: 1,000,000 ldt
 Dismantling method: Dry dock method (420m x 68m)



Jiangmen Xinhui Shuangshui Ship-breaking Iron & Steel Co., Ltd.

Location: China (Guangdong Province)
 Estimated annual recycling capacity: 1,000,000 ldt
 Dismantling method: Afloat method
 Maximum capacity of ship to be recycled: 57,000 ldt



Jiangmen Zhongxin Shipbreaking & Steel Co., Ltd.

Location: China (Guangdong Province)
 Estimated annual recycling capacity: 500,000 ldt
 Dismantling method: Afloat method
 Maximum capacity of ship to be recycled: 25,000 ldt (Length: 280m, Breadth: 42m, Draft: 7m)



Jiangsu Changrong Steel Co., Ltd.

Location: China (Jiangsu Province)
 Dismantling method: Afloat and floating dock (in cooperation with Chengxi Shipyard (Xinrong) Co., Ltd. (CSSC))
 Maximum capacity of ship to be recycled: 30,000 ldt



Leela Ship Recycling Pvt. Ltd.

Location: India (Gujarat)
 Estimated annual recycling capacity: 60,000 ldt
 Dismantling method: Intertidal landing
 Maximum capacity of ship to be recycled: Length: Any length, Breadth: 80m, Draft: Any depth



Miyaji Salvage Co., Ltd.

Location: Japan (Kagawa prefecture)
 Maximum capacity of ship to be recycled: 10,000 gt (depends on ship type)
 Dismantling method: Afloat method



Priya Blue Industries Pvt. Ltd.

Location: India (Gujarat)
 Estimated annual recycling capacity (LDT*1): 120,000 ldt
 Dismantling method: Intertidal landing
 Maximum capacity of ship to be recycled: Length: Any length, Breadth: 120m, Draft: Any depth



RL Kalthia Ship Breaking Pvt. Ltd.

Location: India (Gujarat)
 Estimated annual recycling capacity: 70,000 ldt
 Dismantling method: Intertidal landing
 Maximum capacity of ship to be recycled: Length: Any length, Breadth: 60m, Draft: Any depth



Shree Ram Vessel Scrap Pvt. Ltd.

Location: India (Gujarat)
 Estimated annual recycling capacity: 90,000 ldt
 Dismantling method: Intertidal landing
 Maximum capacity of ship to be recycled: Length: Any length, Breadth: 60m, Draft: Any depth

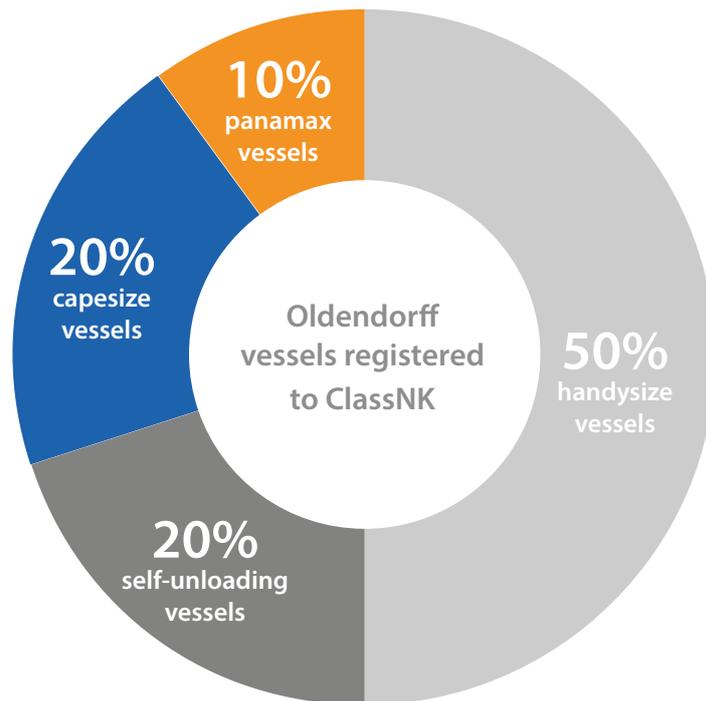
Oldendorff responds to direct approach

Bulk carrier powerhouse Oldendorff Carriers values partners who match its commitment

Each year, the ships falling under the responsibility of Oldendorff Carriers carry around 270 million tonnes of bulk and unitized cargo across the oceans. The dry cargo owner/operator specializes in spot business, industrial contracts and offshore transshipment, making the Oldendorff operation truly global. Some 4,000 people from 60 countries work as a 'self-propelled' network of commercially-driven managers and seagoing personnel supporting each other and sharing knowledge and resources. Teamwork, the company's Director of Communications, Mr. Scott Jones says simply, "is our culture".

It is a culture that fosters "bottom-up" management, with employees authorized to make their own decisions. "At Oldendorff, authority is delegated to an extraordinary extent," Jones says. "We implement decisions quickly because we have highly experienced, empowered professionals at work in our 17 offices across the world, on board our ships, and in port. The people you speak to are also the hands-on decision makers."

Ultimately Oldendorff Carriers has around 500 ships in its fleet at any time, focusing exclusively on the dry cargo shipping segment, from handysize to capesize. As far as its owned fleet is concerned, however, ClassNK is the shipping company's largest registry - in line with its status as the leading society registering dry bulk tonnage. The 20 Oldendorff ships registered to ClassNK are comprised of 10 handysize vessels, 4 capesize vessels, 4 self-unloading vessels and 2 panamax vessels.



Understandably, the Lübeck-based shipping and logistics group wholeheartedly welcomed ClassNK's 2014 announcement appointing Akizumi Miura as Representative for the Survey Department in Europe to expedite decision making. The move, which coincided with an equivalent appointment in New York, marked the first time ClassNK had devolved survey oversight to the authority of anyone outside of its Head Office in Japan.

"It was certainly the right decision," Jones says. "Oldendorff Carriers has an excellent working relationship with Mr. Miura. His presence in Germany has meant a very quick response time; normally, he can answer questions immediately,

and when he needs to consult with ClassNK Head Office we normally get a response within 24 hours. His responses are clear and straightforward."

Empowerment within the shipping company extends to the ship design function, where the attention given by Oldendorff technical staff is exceptional in 21st century shipping. Its orderbook from 2014 includes around 50 'eco' newbuildings in China, Korea and Japan designed to feature very low fuel consumption and a significantly reduced carbon footprint.

"Oldendorff takes an active role in the design of vessels in our newbuilding program, particularly with

regard to fuel saving and environmental features,” Jones says. “We have chosen main engines and auxiliaries which are environmentally-friendly; we have optimized the hull form by working with leading companies on computational fluid dynamics; and we have added additional fuel saving devices such as a Becker mewis duct, with a boss cap fin, or rudder bulb. These devices provide additional fuel savings and reduce greenhouse gases.”

By 2017, these environmentally-friendly vessels will make up 90% of the capacity of the Oldendorff fleet, reducing its fuel consumption by 20%.

Oldendorff has also worked closely with MARIC (Marine Design & Research Institute of China) in Shanghai to optimize its Newcastlemax design for specific trades, tasking German company SVA in Potsdam with optimizing hull lines, and verifying the solution through tank testing.

Elaborating on work, Jones says: “After determining the best hull form we fitted the tank test model with different fuel saving devices to find the optimal design. We also tested different propeller designs to optimize the efficiency for our operating profile at laden and ballast drafts. Parallel to the propeller develop-

ment we selected the best main engine considering SMCR power, rpm and tuning mode.

“All of the steps taken to optimize the performance of the vessel showed that a reduction of fuel consumption of about 10% compared to the initial standard Newcastlemax design was achievable.”

Oldendorff’s attention to vessel performance extends to optimizing its existing commitments. It is replacing one of its Middle East Gulf transhipment vessels, for example, transferring the unloading equipment from *E. Oldendorff* that includes three MPG side-mounted cranes, hoppers, conveyor belts and unloading booms to *Tete Oldendorff*.

Most recently, Oldendorff signed its first newbuilding contract with Oshima Shipbuilding, the bulk carrier specialist known for innovation, in a forward-looking project in which ClassNK has close involvement. The result will be *Beate Oldendorff*, the world’s first ‘super-eco Ultramax’, to be delivered in 2020.

Classed by ClassNK, the new ship is Oshima’s latest super-eco 62,100 dwt design, and includes a variety of fuel saving features now considered highly significant by Oldendorff Carriers. “We are very pleased to add

this vessel to our vessels registered with ClassNK and work with them on the newbuilding and post-delivery.” However, the partnership between Oldendorff and ClassNK extends far beyond the relationship between an owner and its newbuilding supervision and regulatory compliance contractor. Oldendorff is one of the partners of the ClassNK *Joint Industry R&D Project for Bulk Carrier Safety ‘LiquefAction’*.

“The LiquefAction project’s main benefits for the bulk sector include getting a better understanding of what happens in closed holds, what we can do to prevent liquefaction in the first place, and what we can do to minimize the impact if liquefaction occurs,” says Jones. The ClassNK-led initiative is a proactive research project addressing the dry bulk industry’s most longstanding threats to safety.

“The aim is to avoid more casualties due to cargo liquefaction and we are anxiously awaiting the results of the latest modeling and lab test results, which are due very soon,” says Jones. “The safety of our seagoing and shore-based staff, vessels, cargo and not least the environment is of paramount concern to us,” Oldendorff says. “We take these responsibilities as seriously as the commercial aspects of our business.”





Industry partnership: DS Tankers

Interview: Captain Marek Lipiec, Managing Director, DS Tankers

Could you give some background on yourself and tell us about your responsibilities at DS Tankers?

Before stepping ashore I sailed for 23 years, of which 13 were spent as master on various types of ships including all types of tankers, bulk carriers and ro-ro vessels. I joined DS Tankers in 2009 as Managing Director.

When did the cooperation with ClassNK start and how many/what type of vessels operated by your company are registered with ClassNK?

We started our co-operation in 2012 and presently DS Tankers has 4 out of 17 ships registered with ClassNK, with the intention being to extend the existing cooperation due to the present excellent relationship with ClassNK.

How do you value the presence of ClassNK in Germany and what benefits has this brought to your business?

We have a great cooperation with the ClassNK office in Hamburg; it is very important for us to have an office in the same time zone, as this makes work much easier. Mr. Miura and his team are very knowledgeable and are always ready to assist in a very timely manner, in case we have surveys to arrange or questions that may arise.

Can you expand on your practical experience in managing newbuilding projects? Are you planning to expand your fleet with more newbuildings?

DS Tankers has experience in newbuilding projects involving VLCCs

carried out in China; the ships built under these projects are managed by our office. Presently we are in discussion regarding possible newbuilding oil tankers but it's too early to comment at this stage.

DS has two crewing agencies: DS Crewing Services in Hamburg, Germany and DS Scanmar in Manila. Which courses have you developed recently to enhance the capabilities of your seafarers?

We have always exceeded minimum standards for training, providing additional courses to enhance seafarer competency. This is mostly achieved by sending our sea staff to shore-based training centers, but computer-based training has been playing a more important role in recent years.



From a fleet and crew manager perspective, how important are big data solutions for onboard machinery and for crew maintenance work? Is there any technology which you hope to use, or hope will become available in the future?

We use data collected on board to carry out preventive maintenance in order to prevent problems before they occur. For this purpose we use infra-red screening of machinery and vibration measurements.

What part does ClassNK play in the enhancement of your safety management system?

We have a strong cooperation with ClassNK when it comes to improving safety, and their safety-related publications are valued by crew on board regardless of the class of the vessel. Our sister company DS Schiffahrt manages dry cargo vessels, and here ClassNK was appointed in 2015 to carry out an office DOC audit in order to assess how safety issues can be addressed in a better way.

How important is continuous monitoring to ensuring the highest level

of the technical condition of your fleet?

Continuous monitoring and good cooperation between ships and shore staff are the keys to keeping the technical condition of ships at the highest level. Frequent on-board and office visits by ship staff create a good atmosphere and an understanding of the goals which we want to achieve. Data collected on board is assessed first by ships staff and then it is discussed with our office in order to produce long term maintenance plans and their execution. We also use external companies to have our ships assessed by a fresh pair of eyes and from a different angle.

What technologies are you using to improve ship operations and the efficiency of your fleet?

After establishing the criteria for efficiency monitoring we have contracted an external company which is executing these measures on our behalf by making sure that parameters stay within expected levels and keeps in contact with vessels in case of any doubts. Results along with trends are passed on to DS Tankers



and then analyzed, so that actions can be taken when required.

All DS Tankers personnel, on board and ashore, are trained in the use of the Quality Management System. What have you been doing specifically to implement and maintain your high quality strategy?

Understanding company objectives is the key to the implementation of the QMS. Once each person on board and ashore has a good understanding of what we want to achieve, the QMS provides the right tools to do the job. All company personnel are trained in QMS, and we are proud of our high retention rate which allows for personnel with greater and longer experience to mentor staff members who are relatively new. This adds a great deal of value to the formal training delivered to newcomers.

Partners in innovation



Deepening relations with TÜV Rheinland Group to enhance maritime equipment certification

Proper certification is recognized as the cornerstone of safety, from consumer products to the vessels that ship them; virtually everything we use is certified in one way or another.

TÜV Rheinland Group can claim to be one of the world's earliest proponents of product certification, having been founded as a Steam Boiler Inspectorate in 1872 working in the districts of Elberfeld and Barmen, Germany. Today the scope of its technical services extends to consumer goods, wired & wireless communication protocols, construction and a diverse range of many other sectors. The group is now one of the world's largest providers of technical services, with over 140 years' experience and expertise complemented by a network of nearly 20,000 employees.

In September 2015, TÜV Rheinland Group formalized a worldwide partnership agreement with ClassNK to draw on the Society's extensive

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Our strength lies with our employees
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experience in certifying materials and equipment for maritime use. The new relationship builds on a partnership initiated between the two organizations in 2013, covering wind turbine certification.

The scope of the partnership was further demonstrated on 6 July 2016, when TÜV Rheinland Japan's Global Technology Assessment Center (GTAC) in Yokohama became a certified laboratory of ClassNK.

For TÜV Rheinland Group, partnership with ClassNK aligns with its strategy to develop its technical services in areas involving the final usage/installation environment of the products. Working with a Japanese partner to extend its reach into the 'marinization' of land-based technologies also represents a natural fit. Establishing a presence in Japan as long ago as 1978 with only a handful of people, the organization has committed to strong growth in Japan over the intervening years, with personnel numbers expanding rapidly. Today, almost the entire TÜV Rheinland

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*ClassNK is once more taking
a truly collaborative approach to
achieve the best results for our
maritime industry*

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Group service portfolio is available through its Japanese operation.

“The ‘marinization’ of land-based technology requires expertise in two different fields, especially when materials and equipment are being designed for both onshore and maritime use,” says Toshiro Koiwa, Director of ClassNK’s Assurance Operations Division. “Working with the TÜV Rheinland Group Japan GTAC will streamline procedures for marine customers, helping manufacturers by avoiding the time consuming and costly testing and certification processes needed for dual-use equipment.”

“At our GTAC facility, we offer a wide range of services from basic safety testing of electrical equipment to customized tests specified by manufacturers or end-users,” explains Vilmos Sztaroveczki, Manager Commercial, Products, TÜV Rheinland Japan Ltd. “Manufacturers located in Japan can easily visit our facility to witness the testing, communicate with our engineers and arrange new samples for re-testing. This is the same one stop, local testing concept complemented by our support which has been so successful in markets around the globe, and it is the one that our customers find beneficial.

“If a product with the same design parameters is intended to be used on land applications but also on ships, we can provide service

customers with this one-stop testing concept. ClassNK is one of the most well-known names in the marine industry; their long-time experience will support achieving such a goal and will be without any doubt beneficial for manufacturers, ClassNK and TÜV Rheinland.”

Mr. Sztaroveczki emphasizes that, over the years, TÜV Rheinland Japan’s activities have been extended in a step by step approach, reflecting the way technical services and certification have gradually become a global business.

“We started our business in Japan with pressure vessel and material assessment service in 1978. Then, our main activities in the early 80’s and beginning of the 90’s provided the necessary certifications like the German GS *Safety Mark* and *Homologation* services for the automotive industry to help Japanese manufacturers to access the German market,” he says. “In the mid 90’s, with the enforcement of EU Directives, our service portfolio expanded further to help our Japanese clients to access the new EU Community market by providing CE-Marking related testing and certification services. As the leader in this certification we have been supporting our clients in Japan to access world markets.”

He adds that one of the key strengths associated with TÜV Rheinland Japan has attracted ex-

pertise from all over the world in pursuit of service enhancements for a range of customers. “Our strength lies with our employees. With over 20 nationalities working at Japan’s offices, we operate in a multicultural and multilingual working environment. This gives us a clear advantage over our competitors. We are very proud to work together with ClassNK in the future and are glad to be able to provide convenient testing and certification services to both ClassNK and TÜV Rheinland’s clients.”

Continuous investment will be at the heart of TÜV Rheinland Japan’s commitment to test and evaluate the latest technologies, adds Mr. Sztaroveczki, disclosing that a new ‘onboard camera-monitor system’ facility for automotive customers opened on 11 July 2016.

Mr. Koiwa emphasizes the special insight being brought to the new partnership by the Japanese Society. “More often than not, maritime technology is an adaptation of technology that has been used on land, but with so many factors to consider when creating technology for maritime use, ensuring that it is fit for use is no easy task,” he says. “The appointment of TÜV Rheinland Japan as a certified laboratory for test cutting edge technologies demonstrates that ClassNK is once more taking a truly collaborative approach to achieve the best results for our maritime industry.”

Bigger, better, safer

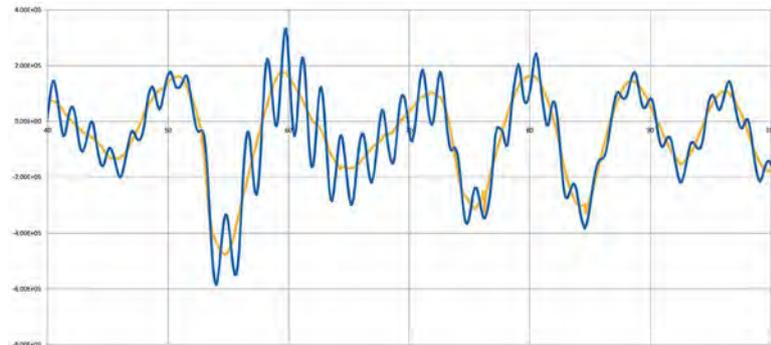
ClassNK has been working to further improve the structural safety of large container vessels

Amendments to structural strength requirements of large container ships

ClassNK established the Investigation Panel on Large Container Ship Safety (NK Panel) in response to a large container ship casualty in June 2013. It comprised of shipbuilders, shipping companies and academic experts, and was put together to investigate the possibility of casualty occurrence and the structural safety of large container ships.

NK Panel conducted 3-hold model elasto-plastic analyses for a number of large container ships ranging from 6,000 TEU class to 8,000 TEU class and investigated the hull girder ultimate strength in consideration of the effects of lateral loads such as bottom sea pressure and container loads. This 3-hold model elasto-plastic analysis could most precisely simulate actual structural behaviors that led to the fracture.

The results from the investigation of the NK Panel were published in the Investigation Report on Structural Safety of Large Container Ships in September 2014, in which it was concluded that the lateral loads such as bottom sea pressure and container loads closely affected the



● Vertical wave induced bending moment without Whipping
● Vertical wave induced bending moment with Whipping

hull girder ultimate strength of container ships.

Meanwhile Japan's Ministry of Land, Infrastructure, Transport and Tourism established the Committee on Large Container Ship Safety (JG Committee) and carried out investigations into the structural safety of large container ships. JG Committee published its Final Report in March 2015, where it recommended that the following two effects were to be explicitly considered in the classification rules and the unified requirements of IACS for large container ship structural strength.

- ◆ The effect of the lateral loads such as bottom sea pressure and container loads acting on the

double bottom structure on the hull girder ultimate strength

- ◆ Effects of whipping responses (vibratory hull girder response caused by impact loads such as slamming) on the vertical bending strength

Furthermore, IACS adopted the new unified requirements on the structural strength of container ships, Longitudinal Strength Standard for Container Ships (UR S11A) and Functional Requirements on Load Cases for Strength Assessment of Container Ships by Finite Element Analysis (UR S34) in July 2015.

In December 2015, based on the knowledge obtained through the in-

vestigations of NK Panel and JG Committee, ClassNK updated its *Rules and Guidance for the Survey and Construction of Steels Ships* on structural strength of container ships.

In the update IACS UR S11A and UR S34 were incorporated into the NK Rules. Furthermore, ClassNK introduced an additional longitudinal strength requirement for the hull girder ultimate strength of large container ships, which was uniquely developed by ClassNK and could explicitly consider the effect of the lateral loads and the effects of the whipping responses. The introduction of the additional requirement has made it possible to evaluate the hull girder ultimate strength of large container ships with direct consideration of the effect of the lateral loads and the effect of the whipping responses on each individual ship.

These updates of the Rules are expected to contribute greatly to further improvement of the structural safety of large container ships.

Brittle crack arrest of extremely thick steel plates exceeding 80mm

Container ships have large cargo openings for the convenience of container loading/unloading, and thicker steel plates are applied to structural members of hatch side coamings and upper decks in order to ensure the required hull girder strengths. The applied steel plates have become thicker and thicker due to the enlargement of contain-

er ship sizes, and the possibility is considered that extremely thick steel plates exceeding 80mm might be used.

To enhance the structural reliability of large container ships, IACS released its unified requirement (UR) on brittle crack arrest design for the use of extremely thick steel plates in January 2013. The UR outlines the necessary measures to be taken for the prevention of brittle crack propagation in the event of occurrence of a crack.

The UR states that brittle crack arrest steels plates with a thickness of 80mm or less must have a brittle crack arrest toughness value (K_{ca}) of 6,000 N/mm^{3/2} or more under the standard minimum designed temperature. However, there are no specific requirements for cases where the thickness of brittle crack arrest steel plates exceeds 80mm, in which the required brittle crack arrest toughness value (K_{ca}) must be specifically agreed with each Classification Society.

In order to clarify the required brittle crack arrest toughness value (K_{ca}) for the steel plates exceeding 80mm, ClassNK carried out investigative research through a joint R&D project

in collaboration with Japan Welding Engineering Society (JWES).

Verification tests were carried out in the joint R&D project by reproducing the brittle crack propagation and arrest phenomenon using ultra-large scale test specimens simulating the actual construction of hatch side coaming and upper deck of ultra-large container ships. The results revealed for the first time that brittle crack arrest steel plates with a thickness of 100mm must have a brittle crack arrest toughness value (K_{ca}) of 8,000 N/mm^{3/2} or more under the standard minimum designed temperature.

Based on these results, ClassNK will, in principle, require brittle crack arrest steel plates with a thickness of more than 80mm and not exceeding 100mm to have a brittle crack arrest toughness value (K_{ca}) of 8,000 N/mm^{3/2} or more under the standard minimum designed temperature.

ClassNK is fully committed to improving the safety and reliability of large container ships and will continue applying its extensive technical expertise to solve the various challenges that arise as a result of the ever-increasing size of container ships.



Riding the river



Tokyo is one of the largest cities in the world, with the inner city area alone covering 600km². Renowned for its unique culture and cuisine, the city has become a major tourist destination with millions of people visiting the capital each year. Tokyo's modern infrastructure allows commuters to travel through the city quickly and conveniently. The city is covered by an extensive train and subway network, which means that practically nowhere is out of reach.

While the advantages of getting around the city quickly are clear, sometimes it's better just to slow down and enjoy the ride. The Sumida River runs for 27 kilometers from the north of Tokyo down to the bay, and is a popular scenic route for both locals and tourists alike. Small vessels ferry passengers up and down the river, offering a unique view of the city.

Tokyo Cruise Ship Co. Ltd. operates a number of vessels, ranging from futuristic to traditional, that seat anywhere from 80 to 300 people,

allowing passengers to travel down the river from under ¥1,000 (less than USD10) depending on the destination. Asakusa, known for the Sensoji Temple and its large red lantern, is a popular embarkation point. Tickets can be purchased on the day from the office located beside the pier, but can also be reserved through the company's website in advance to avoid disappointment.

Below the deck, passengers can admire the stunning architecture of Tokyo's high rise buildings passing by as they sail under the many bridges that cross the river. The ferries are spacious, and the upper decks are open to those looking for better views. A leisurely ride down the river leads you through famous spots such as Asakusa, Ryogoku (home of Japan's sumo wrestling), and the Tsukiji Fish Market.

There are a variety of destinations to choose from, with voyages ranging from roughly 20 to 70 minutes. For those looking for a short trip, it takes just 35 minutes from Asak-



usa to the beautiful Hama-rikyu Gardens located near Shimbashi Station, where visitors can stroll around and take in the lush green surroundings right in the center of Tokyo. Alternatively, passengers can opt for Odaiba Seaside Park, bringing them right into the heart of Tokyo Bay. Built on reclaimed land, visitors can fully enjoy Tokyo's waterfront on the man-made seaside park, or spend some time in the many department stores or restaurants located nearby.

With all the breathtaking scenery and beautiful sunsets on offer, just don't forget to bring your camera.

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Booth Z9 in Pavilion 4
24th - 27th October

Shiptec China, Dalian, China

Booth 1E07
25th - 28th October

www.classnk.com





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As the world's economy grows and changes, the maritime industry is faced with ever greater challenges. With roughly 20% of the world's merchant fleet under class, we understand the requirements for the future of safe shipping, and we're working to develop new tools and technologies to meet the changing needs of the maritime industry. Learn more about our efforts to advance maritime safety and protect the marine environment at www.classnk.com

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