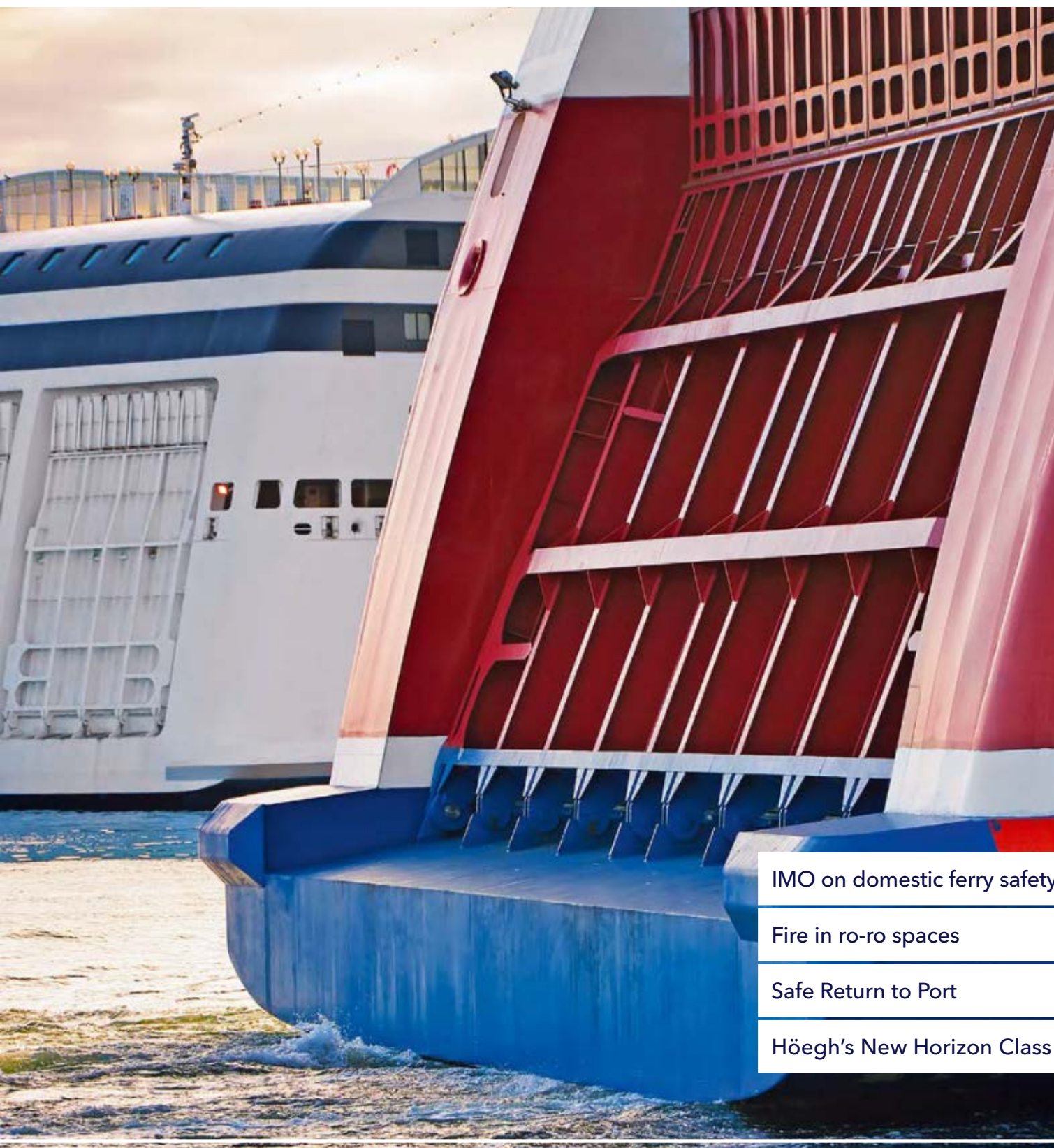


FERRY AND RO-RO UPDATE

2016



IMO on domestic ferry safety

Fire in ro-ro spaces

Safe Return to Port

Höegh's New Horizon Class

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DEAR READER,

The publication of this issue of FERRY AND RO-RO UPDATE coincides with the 41st Interferry Conference in Manila. One of the high-profile guest speakers is Ashok Mahapatra, Director, Maritime Safety Division, IMO. IMO is giving a high priority to initiatives aiming to reduce the frequency of domestic ferry accidents. Our interview with Kitack Lim, the new Secretary-General of IMO provides insights into what IMO sees important and what actions are taken to further enhance the safety aspects of passenger shipping.

Fire safety on ro-ro decks has been a hot topic covered in depth by the media over the last few years. The IMO has put "Fire safety on ro-ro passenger ships" on the agenda of the MSC 97 meeting this November. The outcome cannot be predicted. However, this year Interferry published their best-practice document on ro-ro deck fire safety and DNV GL published its paper "Fires on ro-ro decks" last May. Hopefully both documents will be useful to operators and legislators when addressing relevant issues, and help them make the right decisions.

We have noticed that many owners are looking into newbuilding and that the market is quite active. In fact, this segment, similar to cruise, is one of few bright spots in the maritime newbuilding industry these days. It is very interesting to see that ro-pax orders are being placed at Chinese yards. Gotlandsbolaget's order at GSI and Stena's order at AVIC Weihai are the first ones, as described in this issue.

On the regulatory front there is plenty of activity. Our main expert on this subject, Eirik Nyhus, has summarized the most relevant developments, first and foremost the Ballast Water Convention, which will enter into force on 8 September next year, but also the Monitoring, Reporting and Verification (MRV) regulation and the SECA status update. Compliance with the EEDI regulation has turned out to be extremely difficult for new ro-ro (cargo) designs. This will be debated at MEPC 70 in October.

Enjoy reading!

FERRY AND RO-RO UPDATE

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The headquarters of the International Maritime Organization in London.

IMO will give a keynote address on this years Interferry Conference in Manila. Why is this event important and what topics do you hope to bring to the industry's attention?

Kitack Lim: Passenger vessel safety is just as critical for both the giant modern cruise ships carrying passengers on holiday and the domestic ferries that are so important, particularly in island nations. Statistics show that the global ferry industry transports some 2.1 billion passengers per year and ferry travel is hugely important to millions of people as part of their daily lives. In many countries, domestic ferry operations play a crucial role in the movement of people and goods, often representing the only possible or affordable means of transport.

So this really puts into context IMO's work in terms of safety of life at sea and highlights the importance and relevance of the annual Interferry Conference. I share the view that safety standards on all passenger vessels, whether on domestic or international voyages, should be the highest practicable.

In terms of the topics, the agenda promises to deliver a thought-provoking conference. I will be pleased to see the industry and government representatives share best practices, discuss current challenges, highlight research and innovation and consider ways in which ferry operations can ensure a sustainable future, including looking at energy efficiency and fuel options.

Why is it so important for IMO to take an active role in improving domestic ferry safety? And what are the most urgent measures that need to be taken?

Kitack Lim: While IMO regulations such as those in the International Convention for the Safety of Life at Sea (SOLAS) are applicable to passenger ships on international voyages, I believe it is hugely important that we continue to support countries to improve safety standards and support pollution prevention and energy efficiency in domestic or "non-convention" shipping.

Such voyages may have their own particular characteristics due to the specifics of geography and operational aspects. IMO has, over a number of years, worked with different countries and regions to assess the issues involved and to develop practical solutions. This has included the development of training materials and model legislation for ships on domestic voyages, including those on inland waterways. Such model legislation is intended to

IMO & DOMESTIC FERRY SAFETY

While as an international organization the IMO is primarily concerned with global standards, it should offer its support to help improve domestic ferry safety around the world as well, says Secretary-General Lim.

be easily adapted to local situations, while taking on board relevant international safety standards for construction, equipment and operational matters.

In April 2015, IMO convened a conference in the Philippines that adopted guidelines to help reduce accidents involving passenger ships in domestic navigation by addressing the question of whether a ship is fit for purpose in its intended role. The Manila Statement adopted by the conference acknowledges the need to enhance the safety of passenger ships on non-international voyages. This was an important step, and I will continue to support technical cooperation and capacity-building work which promotes safety and environmental protection across all shipping, including implementation of the Manila Statement.

The Manila Statement calls on many stakeholders to share the responsibility for improving domestic ferry safety. As a classification society, where can DNV GL help most productively?

Kitack Lim: Class societies play a crucial role in maritime safety as the recognized organizations authorized by many Member States to carry out survey and certification on their behalf and to ensure that international seagoing ships meet the required standards.

Of course it is up to individual states to decide whether to authorize a class society to issue certificates for ships operating on domestic voyages.

I do think that class societies in general can help support the improvement of domestic ferry safety by sharing their knowledge and expertise and contributing to capacity-building programmes where feasible. IACS is a valued international

non-governmental organization which has had consultative status at IMO since 1969 and IMO certainly welcomes the contribution of donated time and expertise from class societies to workshops, seminars and other activities under the IMO Integrated Technical Cooperation Programme.

Passenger shipping is one of the few bright spots in the maritime world at the moment but also one where there have been several extremely serious accidents. What do you think are the dominant factors behind such accidents? And where does the industry need to improve? Are there any new IMO initiatives on the horizon that are designed to improve safety in this area?

Kitack Lim: Of course, the oft-cited “human error” comes high on the list when we look into the causes of accidents. However, we need to analyse this human error further in order to really identify what has gone wrong. Is it equipment, training, management or safety culture? Do the regulations need to be amended or just implemented properly?

IMO has been working in recent decades to ensure the human element is at the heart of regulation, through setting standards for training, for operational practices and for management practices,

such as the ISM Code. Accidents still occur and we need to continuously look at ways to improve and to learn from casualties through rigorous casualty investigation.

I do think that modern technology provides unprecedented opportunities to reduce the chances of human error and, thereby, help enhance maritime safety and reduce casualties.

Moving beyond safety - what are the most significant challenges for the passenger sector moving forward? And where are the greatest opportunities?

Kitack Lim: Passenger shipping presents great opportunities. Millions of people rely on passenger ferries for regular transport while cruise shipping continues to grow.

The challenge for all of us is to ensure that we establish a sustainable maritime transportation sector, as this is essential to the development and growth of the world’s economy and to the achievement of the Sustainable Development Goals adopted by the United Nations in 2015. We need to address current issues such as climate change, as well as security issues including cybersecurity, piracy and other maritime crime, and the facilitation of maritime traffic. Ship safety needs to be always at the forefront of our agenda.

To achieve this, countries need to establish a coordinated and integrated approach to maritime transport policy. IMO is carrying out very important work in terms of supporting a number of Member States, under the auspices of the IMO Integrated Technical Cooperation Programme, to develop national maritime transport policies to guide planning, decision-making and relevant legislative action.

I think this is where the challenge lies. Countries and the industry need to take advantage of the opportunities presented, but above all, countries and governments need to ensure that the continued development of passenger shipping and merchant shipping in general is part of a bigger, broader picture which benefits all and is sustainable. In this way we can ensure that the challenges can be properly addressed and that all countries are well placed to take advantage of the opportunities. ■ AJO

“I do think that class societies in general can help support the improvement of domestic ferry safety, by sharing their knowledge and expertise and contributing to capacity-building programmes, where feasible.”

Kitack Lim, IMO Secretary-General

Kitack Lim (Republic of Korea) became Secretary-General of IMO for an initial four-year term this year.



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CRUISE SHIP LUXURY ON BOARD A RO-PAX FERRY

The Irish Continental Group (ICG) has entered into an agreement with the German yard Flensburger Schiffbau-Gesellschaft (FSG) to build a new ro-pax ferry, which is scheduled for delivery in May 2018. DNV GL will verify that the new fleet entry is future-proof.

Flensburger Schiffbau-Gesellschaft (FSG), a subsidiary of the Siem group, specializes in building ro-ro and ro-pax ships, ferries as well as offshore, naval and specialized vessels. "This major contract from the Irish Continental Group (ICG) is a natural extension of our experience with ro-ro ships into the ro-pax segment. It is a great addition to our ro-pax portfolio," says Henrique Pestana, Chief Design Officer at FSG. The new ship will be a large cruise ferry combining the features of a ro-pax ferry with the passenger comfort and convenience of a cruise ship. She will be operated by Irish Ferries, a Dublin-based subsidiary of ICG with a fleet of five ferries serving routes between Ireland and the United Kingdom and France, respectively.

Greener shipping

Andrew Sheen from Irish Ferries Limited is confident that FSG can build on their talent in construction and their hydrodynamic design capabilities. Sheen further adds that having witnessed

their construction standards at first hand, all partners are confident that FSG will be able to deliver the required specification and standard within the specified time frame.

"Building the vessel within 24 months after signing the contract is one of the main challenges for FSG. But our capabilities of advanced 3D modelling for steel and outfitting purposes allow us to be very precise in production planning and deliver in time," Pestana points out. "What is more, we have been enjoying a close relationship with DNV GL as a trusted partner where smooth communication also contributes to short production times."

The new ship will be designed and built to the highest standards of cruise shipping and meet current and upcoming regulations. "Being a committed and contributing member of Interferry allows us to see regulatory direction and assist in its development to ensure that it is proportionate and practicable," Andrew Sheen commented. Emission scrubber

CRUISE FERRY PARTICULARS

Gross tonnage (estimated): 54,100 tonnes
Deck capacity (mixture): 300 cars and 165 trucks
Passenger/crew capacity: 1,885
Passenger cabins: 435
Engine/output (4 engines): 33,600 kW
Speed: 22.5 knots



technology and ballast water management systems will meet current and known future environmental regulations and deliver optimal fuel efficiency while minimizing related costs. "Ship managers have to factor in many considerations when planning for a scrubber installation, from space and stability requirements to fire safety, piping, corrosion resistance and the effect on the main engine," says Hans Jacob Horgen, responsible engineer at DNV GL for exhaust gas cleaning rules. "It is very important to have an overview of the design and an understanding of how the system will interact with the engines and auxiliary parts of the machinery system."

Powered by four main engines delivering 33,600 kW of power, the vessel will feature a high degree of service reliability similar to that already achieved by Irish Ferries' existing fleet of modern cruise ferries.

Flexible operational service

The cruise ferry will be designed to meet all seasonal operational requirements of her future owner. This flexibility in design includes the ability to service all of Irish Ferries' existing routes and will provide expanded route management options. The vessel is being built to "Ice Class" specifications, which will allow her to operate in a wide range of geographic areas. The DNV GL Ice Class notation specifies the requirements for hull strength, machinery systems and equipment as well as procedural rules applicable to ships which operate in light ice and light localized drift ice conditions often encountered in estuaries and coastal areas of northern European waters.

With 435 cabins on board and a dedicated car deck with capacity for 300 passenger cars, the state-of-the-art ship will accommodate 1,885 passengers and crew. Her 2,800 truck lane metres will be sufficient for up to 165 freight vehicles. Passenger facilities will be

"It is very important to have an overview of the design and an understanding of how the system will interact with the engines and auxiliary parts of the machinery system."

Hans Jacob Horgen, responsible engineer at DNV GL for exhaust gas cleaning rules

spread over four decks and will offer a choice of cabins, including suites with their own private external balconies, along with deluxe and standard class accommodation. In addition to a superb choice of bars and restaurants including both à-la-carte and self-service options, special arrangements have been made for Club Class premium passengers, who will be able to use a dedicated lounge featuring private access direct from the vehicle decks.

In addition to increased capacity, the cruise ferry will deliver significant cost savings and improved route and fleet management efficiencies. ■ JS



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The vessel, scheduled for delivery in May 2018, will comply with current and known future environmental regulations.

UNDER- STANDING FIRES

Fire risks and firefighting on board are important topics for the ferry and ro-ro segment, where cargoes vary greatly. Gathering reliable data to identify the hazards and give general recommendations is challenging. A new DNV GL study takes a fresh look at firefighting and prevention strategies for ro-ro spaces.



The DNV GL study evaluates 35 fire incidents in ro-ro spaces from 2005 to 2016 and is the next step from a DNV GL study published in 2005. Data sources include international databases, class records, EMSA marine casualty reports, incident reports and interviews with owners.

To make the most of the available data, DNV GL took a systematic approach, distinguishing between ship types, types of fire hazards, and cargo hold arrangements as they relate to the spreading patterns of fires as well as fire detection and firefighting strategies. The study was limited to ro-pax vessels, vehicle carriers and general ro-ro cargo vessels complying, or deemed to be in compliance, with the SOLAS Convention.

Sources of ignition

From the available data it can be concluded that reefer units should be considered a major concern for fire prevention efforts, especially on board ro-pax vessels. Shifting cargo represents a notable source of fires as well, particularly on board ro-ro and vehicle carriers. Improved cargo securing measures and weather routing could have prevented some of these fires.

The risk of a fire starting in a vehicle, in particular a new vehicle, is very low, which makes it difficult to give recommendations that will significantly reduce the fire risk. However, the data suggests that old transported vehicles should be screened before being allowed on board. >



New and used cars represent a low fire hazard. Reefer units, shift of (heavy) cargo and towed units are items to watch.

Photos: Christian Miller/Oleksiy Mark - Fotolia



> There are three types of ro-ro cargo spaces: closed ro-ro decks, open ro-ro decks (typically with openings in sides and at one or both ends) and weather decks (completely open from above). Open ro-ro spaces are challenging in case of a fire because they are well ventilated, and the overhead steel deck reflects heat and accumulates fire gases. There are also notable challenges with regard to escape routes, the location of life-saving appliances and air intake to the engine room and emergency generator, which can be contaminated and damaged by smoke and flames.

Fire-extinguishing systems

All closed and open ro-ro spaces are required to be protected by a fixed deluge, water mist, CO₂ or high-expansion foam fire-extinguishing system. Deluge systems are mandatory for closed and open ro-ro cargo spaces on ro-pax vessels. Cargo ro-ro and vehicle carriers must have a deluge system for ro-ro spaces that cannot be sealed and may use this option or a CO₂ system for closed ro-ro spaces. A deluge system usually discharges seawater and is activated from a control station, often located at a distance from the wheelhouse, engine control room and crew accommodation.

In the total-loss incidents on record, the damage could have been contained if the fixed fire-extinguishing system had operated properly. Furthermore, it has been shown that the extent of damage is directly related to the time elapsed from ignition of the fire to the release of the deluge system. The known deluge system failures were related to incorrect section released operation, the pump starter being in local mode, or loss of electric power. The fact that the deluge system was released well within ten minutes in four cases proves that a quick response is possible. Recorded response times for engine rooms equipped with freshwater mist systems, which typically have several remote release controls, have been as short as 0.5 to 2.0 minutes. The lessons learned from engine room safety should be applied to the response times for ro-ro spaces. A CCTV system was found to be a useful support tool in several of the fire cases.

General ro-ro vessels and vehicle carriers are typically protected by a CO₂ system. The CO₂ concentrations needed to

extinguish a fire are lethal, and it is of utmost importance that all relevant safety checks are carried out prior to activating such a system. Closing all ventilation dampers before activating the CO₂ system can take some time, but activating the system within 10 to 15 minutes should be possible. Combining all data, it can be concluded that, for a closed cargo hold, the fixed fire-extinguishing system must be activated well within ten minutes to limit the damage. Major damage will occur after 20 minutes, and the safety of the vessel may be at risk. The window of opportunity is typically even shorter for an open ro-ro space design.

The study identified two fires on weather decks. While the vessels suffered structural damage, these critical fires were brought under control. Presumably a similar fire in an open ro-ro space would be more difficult to handle. In most of the remaining cases, the fire occurred on a closed ro-ro deck and was put out by the fixed fire-extinguishing system and the efforts of fire teams.

Fire-detection systems and fire-confirmation procedures

Fire and/or smoke detectors are required for all cargo spaces except weather decks. In the incidents on record, the fire was detected quickly. However, the time needed to confirm the fire and establish its location was shown to be critical. CCTV, the bridge or crew helped confirm the fire quickly in six of ten cases, whereas in two cases crew errors caused delays. Combined smoke and heat detectors are useful, as the heat detectors can pinpoint the extent of the fire whereas smoke detectors are not necessarily helpful in identifying the location of the fire.

New rules, new cargo types

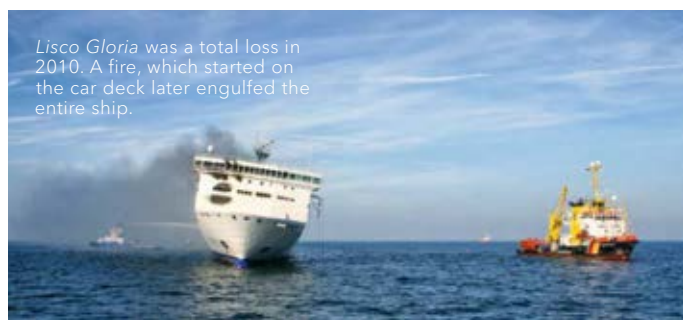
Several recent SOLAS amendments will enhance the safety of ro-ro vessels. The rules for deluge systems and water drainage should enhance system reliability and performance and reduce the likelihood of stability problems due to water accumulating within ro-ro spaces. The new A30 requirement for cargo vessels may reduce the risk of total loss (where fire cannot be contained to a single cargo hold), and it may also reduce the risk of cargo loss in other holds having to be scrapped after a fire.



Cargo on board lorries can ignite.

NEW SOLAS REQUIREMENTS FOR RO-RO SPACES

Item	Regulation	Vessel type	Entered into force
Means to prevent blockage of drainage arrangement	SOLAS Ch. II-2 Reg. 20.6.1.5	All ro-ro vessels fitted a deluge system	1 January 2010 for new ships First survey after 2010 for existing ships
A30 structural fire protection between different ro-ro compartments	SOLAS Ch. II-2 Reg. 9.2.3.3	Cargo vessels (incl. vehicle carriers) with ro-ro decks	1 July 2014 for new ships
Enhanced application rates and design requirements for deluge systems	SOLAS Ch. II-2 Reg. 20.6.1	All ro-ro vessels fitted a deluge system	1 July 2014 for new ships
Requirements for vehicle carriers carrying vehicles with alternative fuel	SOLAS Ch. II-2 Reg.20-1	Only vehicle carriers	1 January 2016 for new ships
	IMO MSC.1/Circ. 1471		Existing ships should apply IMO MSC.1/Circ. 471



Lisco Gloria was a total loss in 2010. A fire, which started on the car deck later engulfed the entire ship.

EXTENT OF DAMAGE IN RELATION TO TIME TO RELEASE OF FIRE-EXTINGUISHING SYSTEM

Vessel	Time to release	Damage, other findings
RO-PAX VESSEL		
<i>Victoria Seaways</i>	3 minutes	Limited damage
2009. R1	"Immediately"	Damage to some lorries
2015. R1	8 minutes	Limited to one car
<i>Mecklenburg-Vorpommern</i>	8 minutes	One trailer damaged as well as some steel structures above. Deluge valve hard to operate (release delayed 3 to 5 minutes as a result)
<i>Commodore</i>	25 minutes	Several lorries and some structures damaged
<i>Pearl of Scandinavia</i>	35 minutes	Incorrect section released after 17 minutes, but corrected after 35 minutes. Car burnt out, and some damage to the adjacent trailer plus some structures (a few days off-hire)
<i>Lisco Gloria</i>	Did not operate	Total loss of vessel
<i>Norman Atlantic</i>	Incorrect section operated	Total loss of vessel
CARGO RO-RO VESSEL		
<i>UND Adriyatik</i>	Did not operate	Total loss of vessel

F(A, M, C) NOTATION

The DNV GL notation covers additional fire safety measures for newbuildings and looks at the accommodation area, machinery spaces, as well as the deck and cargo areas. A vessel's documentation, manuals and the firefighters' outfits are also checked. F(A, M, C)'s requirements cover some of the following aspects:

- Water spray / water mist distribution
- Improved fire detection / fire confirmation
- Addressable detectors (quick fire detection)
- Combined smoke and heat (detection in port)
- Ferries: CCTV => quick fire confirmation + cargo control
- Specifications for portable equipment
- Portable extinguishers: 12 kg powder / 9 litres foam
- Additional firefighter outfits
- 10 UHF radios with 95 per cent coverage

According to SP 961 and 962 of the IMO Code, vehicle carriers carrying electric vehicles must comply with the requirement applicable to Class 9 dangerous goods. Vehicles fuelled with compressed hydrogen or natural gas are subject to SOLAS Ch. II-2 Reg. 20-1 and IMO MSC.1/Circ. 1471. On board new vessels, all electrical equipment must be EX, and ventilation must be controllable. Portable gas detectors must be carried on all vessels. Until reliable data is available, owners are advised to adopt a cautious policy for alternative-fuel vehicles (AFV) carried on board.

A number of European countries and the European Commission have asked for the fire safety of ro-ro passenger ships to be addressed in the Maritime Safety Committee of the IMO. The petition lists 14 critical issues, including fires igniting from vehicle cabs, reefer units, vehicle engines and cargo units in general or from a ship's equipment, fire suppression as well as best-practice sharing for crew training and fixed fire-extinguishing systems, their pumping efficiency, sprinklers and drencher requirements.

Recommendations

Owners and operators should have a clear policy on what cargo and operations they accept on board. Cargo should be screened, high-hazard units should be carefully checked and reefer units should be placed in dedicated areas. Power transfer cables require special care and attention before and during the voyage.

Improved cargo securing equipment and practices, and weather routing should be considered. Access to all ro-ro spaces should be restricted during voyage. Unauthorized charging of electric cars should be banned. Electric sockets should be marked and secured, and fire patrols on ro-pax vessels should be instructed to remove charging connections. For hydrogen-powered vehicles, locations such as along steel bulkheads should be preferred. Quick release of the fixed fire-extinguishing system is important, particularly for open ro-ro decks where the window of opportunity may be less than ten to 15 minutes. Careful and realistic crew training is crucial, especially regarding extinguishing system activation times.

The measures defined by the DNV GL class notation F(A, M, C) should be considered for newbuildings. They include enhanced reliability of the fixed fire-extinguishing system, improved fire detection and CCTV systems, better specified portable equipment, additional firefighter outfits and better UHF/VHF coverage. Power circuits serving reefer units should be equipped with ground fault detection mechanisms, which can send an alarm signal to a manned control station. Open ro-ro spaces on a newbuilding should account for all relevant safety systems.

If followed, the recommendations listed in this study represent a significant step to greater levels of fire-safety in ro-ro spaces. ■ AK

The complete study can be downloaded at www.dnvgl.com/sp.



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A SAFE WAY HOME FOR DAMAGED SHIPS

The Safe Return to Port regulations are intended to provide passenger vessels with enough robustness and redundancy to act as their own life boat in case of an on-board incident involving fire or flooding. DNV GL assists customers in implementing the complex requirements.

The long history of amendments and updates made by the International Maritime Organization (IMO) to its SOLAS regulations for passenger safety documents lessons learned from incidents and near-misses. The Safe Return to Port (SRtP) regulations, mandatory for new ships since July 2010, are another step towards making passenger ships safer. Applicable to vessels at least 120 metres in length or designed with three or more main vertical zones (MVZ), they require new ships to be designed with sufficient redundancy of crucial on-board systems to allow them to remain operational in case of damage associated with fire or flooding.

“The ultimate objective is to enable a damaged passenger ship to return to the closest port without external support or requiring evacuation while providing safe, adequate temporary on-board accommodation zones for its passengers,” explains Karl Hovden, Senior Principal Engineer Control Systems at DNV GL.

Casualty thresholds

The SRtP regulations assume a “system approach” requiring close cooperation between the different players and technical disciplines. Among the key criteria is a so-called casualty threshold which determines under what circumstances a vessel should be considered capable of returning to port under its own power. In essence, this is the case as long as any fire damage is limited to the loss of one compartment adjacent to “A”-class divisions and protected by a fixed fire extinguishing system, and flooding is limited to the loss of any compartment separated from the

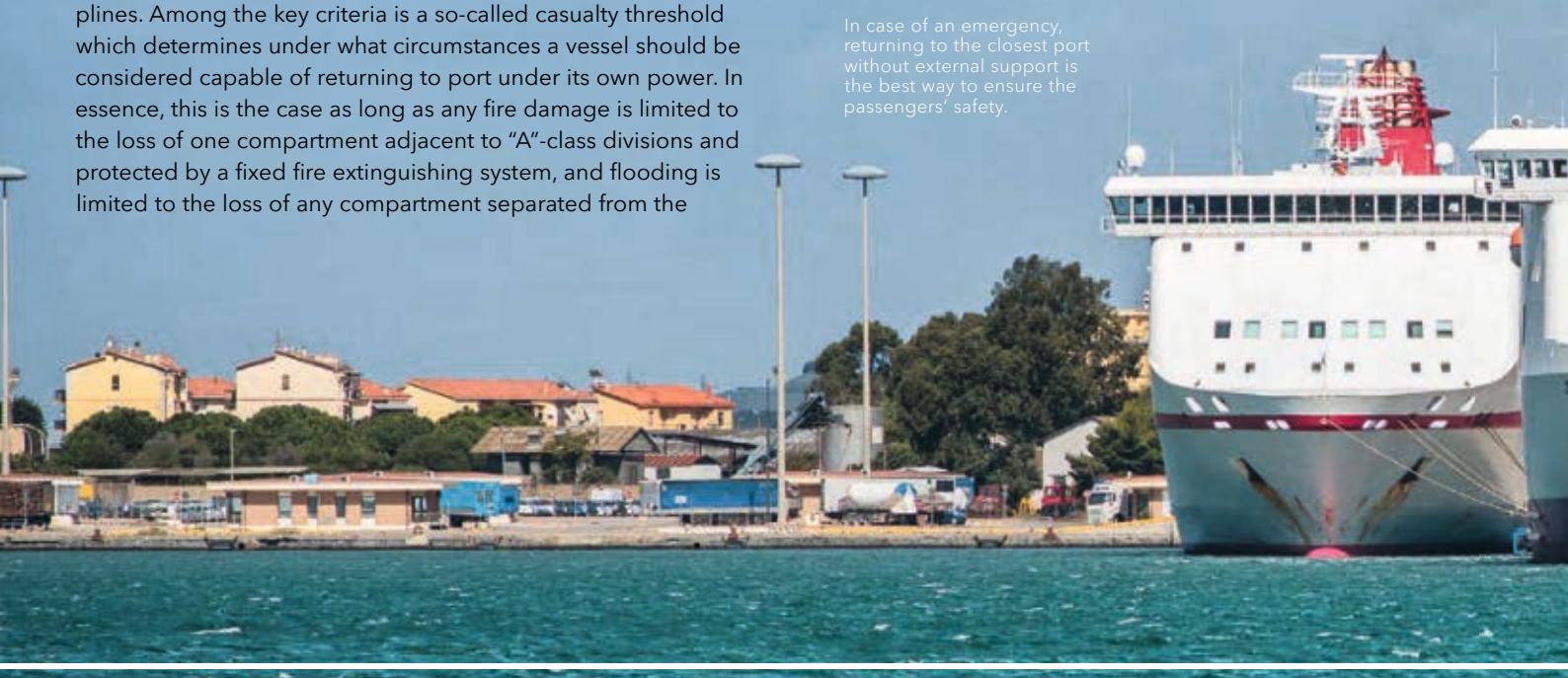
remaining vessel by watertight bulkheads. In all cases, 13 specific on-board systems must remain operational outside the affected ship compartment (SOLAS II-1/reg.21). The regulations also define system capability requirements in the event that the casualty threshold is exceeded and the vessel must be abandoned.

The SOLAS SRtP regulations are intended to provide a practical basis for developing both, appropriate ship designs and on-board documentation and operational manuals during the design phase. “So while the regulations are largely design requirements, there are strong links to the operational aspects and the intention is to ensure that the restoration and maintenance of system capabilities for the return-to-port voyage after a casualty is simple and feasible for the crew under emergency conditions,” says Hovden.

Implementation advice is crucial

The consequences of the SRtP regulations for ship design, operation, maintenance and crew training are far-reaching and complex. Ensuring SRtP capability for passenger ships in damaged

In case of an emergency, returning to the closest port without external support is the best way to ensure the passengers' safety.



WHAT THE SRTP REGULATIONS SAY

The SRtP regulations are mandatory for passenger ships constructed on or after 1 July 2010 which are 120 metres or more in length or have at least three main vertical zones (MVZ). The DNV GL Safe Return to Port Guideline (DNVGL-CG-0004) provides

guidance on the SOLAS requirements.

Passenger vessels must be able to return to port after a casualty not exceeding a defined flooding or fire threshold, and provide all persons on board with basic services

in so-called safe areas.

For fire incidents exceeding the casualty threshold but not extending beyond one main vertical fire zone, systems for supporting orderly evacuation have to be available for three hours.

condition requires detailed design planning, especially regarding the redundant systems, piping, cabling, ducting and control. Another key issue is the level of performance required for any of the 13 essential systems to remain operational; this is neither defined by SOLAS nor by the relevant SRtP circular MSC.1/Circ.1369.

“The number of shipyards and owners experienced in SRtP projects is still limited, so there is typically a need for competent consulting,” says Johan Hellman, Manager, Concept Development at the Finnish design office Deltamarin. “Different classification societies have different interpretations of statements written in SOLAS and relevant IMO circulars. Companies like Deltamarin often have significant experience from dealing with various ship types, classification societies and owners. It is important to clearly define the applicable requirements, the workflow and the required documentation with Class at the beginning of a project. The earlier all possible variances are clarified, the less re-design and costly modifications will be needed later in the project.”

The DNV GL Statutory Interpretations (DNVGL-SI-0364) provide some guidance, and the DNV GL Class Guideline (DNVGL-CG-0004) gives a comprehensive overview of the SRtP regulations and their implications for designers and operators. Furthermore, as a major contributor to the SRtP rule-making process with huge expertise in passenger ships and risk assessment, DNV GL is in a unique position to provide advice and assistance to vessel designers, shipyards and shipowners in implementing the SOLAS requirements, from analyzing the safe-return-to-port capability of a ship design to finding viable solutions prior to classification.

“Our service covers early-stage design support, a general assessment of all essential systems and a detailed assessment of critical systems. It is highly recommended to arrange SRtP kick-off meetings and workshops in the early phase of each project. For the yard it is recommended to appoint a dedicated SRtP responsible, who coordinates across the disciplines to ensure the design complies with the rules,” suggests Karl Hovden. ■ AK



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The new LNG-fuelled ro-pax ferry will have a very small environmental footprint.

ECO-FRIENDLY, FAST & SAFE: A WORLD DEBUT

Guangzhou Shipyard International is building the world's fastest conventional ro-pax ferries on LNG for Swedish owner Rederi AB Gotland. The project marks a milestone for GSI since these two DNV GL-classed vessels are also the first LNG-powered ships ever built by the yard.

LNG is making headway as a ship fuel. Another new project is underway, a debut in more than one respect: the fastest LNG-fuelled conventional ro-pax ferries will soon plough the seas of the Baltic. Upon their delivery, scheduled for 2017 and 2018 respectively, the two DNV GL-classed vessels owned by Rederi AB Gotland will service the route between the Swedish mainland and the Swedish island of Gotland. As for Guangzhou Shipyard International (GSI), it is the first project involving LNG-fuelled ships.

Each of the ro-pax ferries will be able to carry about 1,650 passengers and have 1,750 trailer lane metres to accommodate passenger cars, campers and buses. "We are proud to be constructing the world's first high-speed LNG-fuelled ro-pax ferries for Rederi AB Gotland. They represent a new generation of vessels with the highest levels of sustainability, safety, comfort and speed," says GSI Vice President William Zhou.

Reducing the environmental footprint

Fuelled with LNG, the 200-metre-long ferries will comply with the IMO Tier III regulations for nitrogen oxide (NO_x) emissions and meet the sulphur (SO_x) emission limits in force within the northern European sulphur emission control areas (SECA). Emissions of particulate matter will be virtually zero. The ferries will also meet

the requirements of the recently agreed IMO IGF Code regarding the safety of LNG-fuelled ships. In addition, GSI is working to ensure the vessels achieve compliance with several additional DNV GL class notations.

"To fulfil the requirements of the Gas Fuelled notation, the vessels are designed with four main engines, four auxiliary engines and two thermal oil boilers, each operating in dual-fuel mode using either LNG or marine diesel oil (MDO)," explains Krzysztof Kurek, Senior Surveyor at DNV GL. The two ferries will also receive the CLEAN notation, which covers requirements for emissions to air and discharge into sea.

Improved safety and comfort

The vessels are designed to meet the SOLAS Safe Return to Port (SRtP) regulations (refer to page 12 in this issue) in force since 2010, requiring passenger ships longer than 120 metres or built with three or more main vertical zones to be capable of function as their own lifeboat in case of fire or flooding. The DNV GL Safe Return to Port Assessment evaluates essential systems and arrangements which must be functional following predefined casualty scenarios.

Compliance with the DNV GL NAUT-AW notation for nautical safety will demonstrate a reduced risk of collision and grounding.

"This notation includes requirements for bridge design, workstation arrangement and the installation of navigational equipment which exceed SOLAS requirements and further enhance the safety of the ship," states Kurek. Furthermore, the vessel will receive DNV GL's Comfort Class notation, which addresses noise, vibration and indoor climate requirements.

Close collaboration

Constructing these vessels in general, and ensuring they meet all the requirements for the additional DNV GL notations in particular, are complex tasks which have presented GSI with many challenges.

"We were eager to take on this project and are determined to become the best in this field. We have a very well established best-or-nothing strategy, and we support this strategy with extensive market research and analysis, sound investments in research and development, good product positioning and competence development," says William Zhou.

GSI has established a dedicated research and design team for this project and brought in experienced manufacturers and subcontractors. "We also cooperate very closely with the owner, DNV GL and the design office to make sure we find the best solutions to any issues that come up," says William Zhou.

"DNV GL has worked closely with both GSI and the owner from an early stage, and GSI has shown its potential and flexibility to build such an advanced ship type, supported by the professional attitude of the design office and the quality department, and with a focus on good cooperation with the owner and class," confirms Kurek.

More than 100 newbuilding projects with DNV GL

As a member of the Chinese state-owned shipyard group CSSC, GSI is a leading shipyard, particularly in some advanced, niche segments such as ro-pax ferries, polar ships and multipurpose vessels. Zhou attributes GSI's success mainly to the right strategy and long-term cooperation with their customers. "Gotland is a good example of this," says Zhou.

Cooperation with DNV GL dates back to the 1990s, and in September 2013 both companies celebrated a milestone



"These ferries represent a new generation of vessels with the highest levels of sustainability, safety, comfort and speed."

William Zhou, Vice President
Guangzhou Shipyard International

achievement when they signed their 100th ship classification agreement.

With a current order book of more than 60 ships, GSI delivers roughly 30 vessels every year, says Zhou. "We are among the world's top shipbuilders, with the highest number of ships to our credit," he emphasizes. ■ CZ



DNV GL Expert

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VESSEL PARTICULARS

Length overall: 200 m
Breadth: 25.2 m
Draught: 9.3 m
Speed: 28.5 knots
Class notations: #1A1 Car Ferry
A, ICE-1A, GAS FUELLED, E0,
BIS, LCS(DC), TMON, NAUT-AW,
COMF-C(1), COMF-V(2), CLEAN

Lighthouse project for GSI:
the Chinese shipyard is building
the world's fastest conventional
ro-pax ferries on LNG.





Two of the six New Horizon Class pure car and truck carriers in the dock of Xiamen Shipbuilding Industry.

NEW HORIZON CLASS – SUPERSIZING CAR CARRIERS

Similar to container vessels, bulk carriers and cruise ships, car carriers are rapidly growing in size. A new series of the world's largest pure car and truck carriers sets a new standard for this segment.

July 2016, Xiamen, China: Berthed along the 1.5-kilometre coast side of the Xiamen Shipbuilding Industry yard, the final two vessels in a series of six New Horizon Class pure car and truck carriers (PCTC) are nearing completion. While one of them has just undergone sea trials, the last of these gigantic post-Panamax vessels is still in the outfitting stage and will be delivered by the end of the year. Ordered by Norwegian shipping company Höegh Autoliners, the New Horizon Class vessels have a carrying capacity of 8,500 units, and are able to accommodate nearly 15 per cent more cars than ships of same size and type. The 200 m long and 36.5 m wide vessels have a deck area of 71,400 m², divided over 14 decks. This makes them some of the world's largest PCTCs by capacity.

“We worked very closely with Deltamarin OY, the Finnish designer, Xiamen Shipbuilding Industry, as well as DNV GL concerning class approval,” says Jan Rune Mørken, Head of Newbuilding – Höegh Autoliners. “There are several reasons why we

wanted to give these vessels a wider beam rather than increasing the length. For example, the expansion of the Panama Canal gave us more freedom to increase capacity. In addition, we aim to reduce the carbon footprint of each vehicle we transport.



Höegh's record-setting, 200-metre PCTCs will each carry up to 8,500 vehicles on 14 cargo decks.



“Through these projects and our cooperation with DNV GL, we have grown to be a leading yard in this field.”

Li Zhenjun, Chairman of Xiamen Shipbuilding Industry (XSI)

Creating a new vessel standard with a capacity for 8,500 vehicles makes a big difference,” he explains. Making the vessels longer was not an option. “A maximum length of 200 metres is common for many PCTC berths,” says Mørken.

Small carbon footprint

The final design was fully optimized to make these vessels as green as possible, with a new hull shape and a very efficient propeller. “These PCTCs only emit half the amount of CO₂ per car transported compared to standard car carriers, and they consume a lot less fuel oil per day. Certification to the DNV GL CLEAN and BWM-T (Ballast Water Management) notations demonstrates the sustainability of the design and its preparedness for future requirements,” says Li Zhenjun, Chairman of Xiamen Shipbuilding Industry (XSI). “We are proud to be working on this vessel series. We are committed to developing our expertise in the car carrier segment; through these projects and our cooperation with shipowners and DNV GL, we have grown to be a leading yard in this field.”

A milestone for Höegh

Increasing the beam presented significant design challenges. Höegh and DNV GL carried out extensive studies looking at the impact of the wider beam on stability. “Our fleet uses the ‘two pillar support principle’. This means the deck is like a football pitch and we can utilize the entire deck from port to starboard. DNV GL was the first classification society to approve such a flexible design with an open deck, so we knew it had a good track record

and competence with this type of design,” Mørken explains. “Installing the complex ro-ro system including the doors, hoistable decks, stern ramp and side ramps was also a challenge we had to overcome,” says Li.

The new vessels have 14 cargo decks and five liftable car decks, and a higher door opening than Höegh Autoliners’ current vessels, enabling cargo up to 6.5 metres high and twelve metres wide to be loaded. Extra ramp strength allows for cargo weighing up to 375 tonnes to be loaded over the stern ramp and 22 tonnes over the side ramp.

“It is fascinating for us to be involved in such an ambitious project,” says Chi Shaoguang, DNV GL Newbuilding Manager for Area South China. “The cooperation between all the partners has been excellent and the progress on the construction site is a testament to the high level of expertise XSI holds in building these complex vessels.”

“Indeed this is a milestone for our company,” says Mørken. “It is a very proud moment and it is great to see that we have had very positive feedback from those who work on and operate these vessels.” ■ HH/CZ



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A NEW GENERATION OF GAS-READY RO-PAX SHIPS FOR NORTHERN EUROPE

The Gothenburg-headquartered ferry company Stena Line has ordered four new ro-pax ferries from AVIC Shipyard in China. The vessels, scheduled for delivery in 2019 and 2020, will be optimized for efficiency and flexibility. DNV GL will provide classification services according to the new DNV GL rules.

The ro-pax ferries will operate on short international routes with optimal efficiency and flexibility. The first four ships of the series will be deployed on Stena Line's northern European routes. With a capacity of 927 passengers and 73 crew members, the design provides a total of 3,100 lane metres for vehicles.

"These ships will be the most fuel-efficient ferries in the world and will set a new industry standard in terms of operational performance, low emissions and cost competitiveness, enabling Stena Line to support its customers for the next decades," says Carl-Johan Hagman, Managing Director of Stena Line. "During the past 24 months our engineering staff has developed a design that is not only 50 per cent larger than today's standard ro-pax vessels but, more importantly, incorporates the emission

reduction and efficiency strategies developed by the Stena Group in recent years."

"We are very proud to have been selected for this exciting new project," says Knut Ørbeck-Nilssen, Chief Executive Officer (CEO) of DNV GL - Maritime. "The fact that a quality-focused and innovative owner like Stena Line has chosen to build these vessels to the new DNV GL rule set shows that our customers are responding positively to the new rules. We look forward to working with Stena Line, Deltamarin, AVIC and the other project partners to ensure successful delivery of these future-ready vessels."

Incorporating all the new rules and regulations and making the necessary engineering arrangements for future installation of LNG, scrubber or selective catalytic reduction (SCR) systems

MAIN PARTICULARS

- Length overall: 212 m
- Breadth: 27.8 m
- Depth: 15.88 m
- Draught (design): 6.4 m
- Class: DNV GL class rules, main class 1A
- Additional class notations: Ferry A, ICE-1C/ICE-1A, BIS, TMON, BWM-T, CLEAN, E0, NAUT-AW, VIBR, Recyclable, COMF(V2), GAS READY(D, MEc)

"GAS READY" CLASS NOTATION

The basic notation with the nominators D and MEc - GAS READY (D, MEc) - serves to verify that the vessel is in compliance with the gas fuel-related rules in terms of its overall design for future LNG fuel operation, and that the main engine can either be converted or is ready to operate on gas fuel.

The owner can also choose to add extra requirement levels to the newbuild under the notation. These cover options such as structural reinforcements and specific materials to support future LNG tanks (S), preparation for future gas fuel systems (P), certification and

installation of LNG fuel tanks (T), and the installation of machinery which can be converted or is already capable of burning gas fuel. This gives the vessel a head start along the LNG track, thereby speeding up and simplifying subsequent conversion when appropriate.





Stena Line's ro-pax ferries will set a new industry standard in terms of operational performance, low emissions and cost competitiveness.



"We foresee continued demand growth for short-sea services in northern Europe and many other parts of the world."

Dan Sten Olsson, CEO of Stena AB

make this a challenging project, concedes Tian Zheng Jun, Chief Technical Officer of AVIC SHIP. The shipyard has to account for noise and vibration control as well as light ship weight control while maximizing payload lane metres and meeting modern accommodation standards for European passengers. "But it is our commitment to deliver state-of-the-art, sustainable ships which live up to the highest safety and quality standards, and serve the global high-end ro-pax market. AVIC is in a constant process of

knowledge refreshment and the ongoing support of DNV GL with on-site training of the yard staff is highly appreciated."

Ferries - a key element of logistics infrastructure

Dan Sten Olsson, CEO of Stena AB, said: "We foresee continued demand growth for short-sea services in northern Europe and many other parts of the world. Ferry transport will play an essential part in tomorrow's logistics infrastructure if we are to have sustainable societies. Not only is sea transport the most efficient and eco-friendly way of moving goods, it also provides reliable and speedy logistics with very limited public cost. Through this investment we position Stena Line for further growth."

The vessels will receive the DNV GL GAS READY notation which clearly defines a vessel's level of preparedness for conversion to LNG fuel and provides guidance for the required measures to make the transition. The optional TMON notation specifies the modalities for condition monitoring of shafts, bearings and the lubricant system, aiming to ensure optimal maintenance of the integral components through an effective design and in-service monitoring regime. The associated condition monitoring-assisted surveys offer potentially unlimited tail shaft withdrawal survey intervals. During the classification process DNV GL will also carry out statutory work on behalf of the UK's Maritime and Coastguard Agency (MCA). ■ SA

"TMON" CLASS NOTATION

The class notations for water-lubricated tail shafts - TMON (closed-loop water) and TMON (open-loop water) - now allow potentially unlimited intervals between tail shaft withdrawal surveys on the basis of a condition monitoring system for the tail shaft, bearings and lubricant system.

These class notations are available for both existing vessels and newbuilds.

As long as the DNV GL requirements are met during the design and operational

phases, there is no specific, pre-determined interval for tail shaft withdrawal surveys.

The condition monitoring-based survey process (no shaft withdrawal) also encourages operators to consider water-lubricated systems as a viable alternative approach to complying with tightening environmental restrictions (e.g., the US Environmental Protection Agency's Vessel General Permit [VGP] requirements).

Photos: Stena Line



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ENVIRONMENTAL REGULATIONS – WHAT YOU NEED TO KNOW

The environmental impact of the shipping industry remains a topic of keen interest for regulators, with agreed regulations entering into force in the near future and new regulations being developed around the world. Understanding the evolving regulatory landscape is of strategic significance when making business decisions.

Over the past decade, shipping has seen a surge of environmental regulations. Political pressure and an increasing focus from society at large have driven the International Maritime Organization (IMO), various countries and regions such as the EU to develop steadily more stringent regulations. The consequence is a patchwork regulatory system, where numerous overlaps create challenges for operators. There are unfortunately no indications that this will change. It is important for operators to both understand the existing regulatory framework and be aware of forthcoming developments, both at IMO and elsewhere, in order to make the right business decisions.

Ballast water management

The International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM) was ratified by Finland on 8 September 2016, bringing the total gross tonnage belonging to signatory states to more than 35 per cent. The convention will enter into force on 8 September 2017. Ships will be required to have an IMO-approved treatment system installed on board at the latest by the date of their first International Oil Pollution Prevention (IOPP) renewal survey after entry into force. In practical terms this means the entire world fleet is to be compliant within 2022. The content and interpretation of the convention is still evolving, with the revision of the technical guidelines hopefully finalised at MEPC 70 in October this year. There are presently 65 IMO-approved systems on the market.

The national ballast water management regulations of the United States entered into force in 2013. New ships now have to comply upon delivery, while existing ships must comply by the first scheduled dry docking after 1 January 2014 or 2016, depending on ballast water capacity. US type approval is required for the ballast water treatment systems of affected ships; so far no such approvals have been granted. To address the obviously paradoxical situation of having to install approved systems when none have obtained type approval, the US Coast Guard (USCG) has issued more than 50 so-called Alternate Management System (AMS) approvals for systems accepted by IMO. These approvals are limited to a five-year validity period. To ease the transition further the US is also liberal in granting time-limited exemptions to individual ships. We believe that once US-approved systems become available the extension policy will become significantly more stringent.

For more information on different ballast water topics such as treatment systems and approval process please visit dnvgl.com/bwm.

SO_x regulations

Discussions at IMO are centred on the question of whether the global 0.5 per cent sulphur content requirement should enter into force in 2020 or 2025. An IMO commissioned fuel availability study has been submitted to MEPC 70 and will provide a discussion basis for IMO deliberations. It is worth noting that a separate,

Protecting marine ecosystems is an important goal for the shipping community but the regulatory ecosystem causes headaches.

independently commissioned study also has been submitted, and that the two studies reach very different conclusions.

It therefore remains in doubt whether the IMO will be able to conclude at MEPC 70 in October 2016. A further complicating factor in the discussions is the EU Sulphur Directive, which stipulates a maximum 0.5 per cent sulphur content for all EU waters by 2020, irrespective of the IMO decision. If different dates are decided by IMO and the EU, shipping will for a period face a three-tier sulphur content regime. From an operational perspective, this will be challenging.

It should also be noted that the Water Framework Directive is putting constraints on the discharge of scrubber water in certain EU countries. Belgium and Germany have in essence prohibited the discharge of scrubber water in most areas, severely constraining

the operation of open-loop scrubbers. Other EU countries are following suit to a lesser or greater degree, with no common EU practice likely to be agreed. China has recently published regulations for SECA-like fuel requirements in certain coastal areas (see box below).

More information and our updated Sulphur guideline are available at dnvgl.com/lowsulphur.

NO_x regulations

NO_x Tier III requirements have entered into force in the North American ECA for ships constructed on or after 1 January 2016. In essence, anyone constructing a ship today needs to consider potential operation of the vessel in the North American ECA, whether

CHINA IMPOSES SULPHUR LIMITS AND MIGHT ESTABLISH SECA ZONES

China has published regulations to establish SECA-like sea areas outside Hong Kong/Guangzhou (Pearl River Delta) and Shanghai and in the Bohai Sea. In a staged approach, the

new regulations impose an initial 0.5 per cent sulphur limit for fuel burnt in key ports within these areas, gradually expanding the coverage to finally encompass these sea areas entirely

from 2019 onwards. The sulphur limit might be lowered to 0.1 per cent as of 2020, and a formal ECA application may be submitted to IMO.



Photo: AlexanderCher - iStockphoto

DNV GL ECO INSIGHT PROVIDES VISIBILITY INTO FLEET PERFORMANCE

With its performance monitoring tool "ECO Insight", DNV GL offers a convenient means to keep abreast of upcoming MRV requirements and ensure timely compliance:

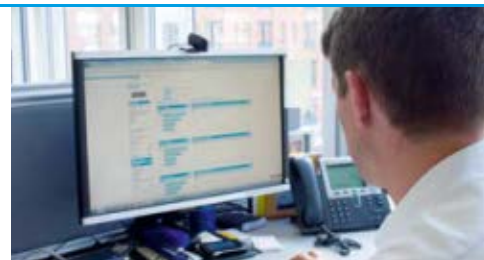
- ECO Insight's proven onboard data recording

application integrates all traditional ship-to-shore reporting into one solution.

- Extensive technical and ship-specific plausibility checks deliver high-quality data without "MRV non-conformities".
- Data is automatically com-

plied in EU and IMO formats for uploading to the respective servers.

- Data serves as basis for comprehensive fleet performance management using ECO Insight, helping to cut operating costs.



The ECO Insight portal is a gateway to higher operational efficiency.



> upon delivery or at some time in the future. If such an operation pattern is conceivable, NO_x control technology will be needed for that ship. In contrast to the North American ECA the ECAs in the North Sea and the Baltic do not yet include a NO_x requirement. Joint North Sea/Baltic NECA applications have now been made to MEPC 70. Assuming agreement at IMO these Tier III requirements will apply to ships constructed on or after 1 January 2021.

CO₂ and energy efficiency

Climate change remains the driving political force behind CO₂ and energy efficiency regulations. In the EU, regulations for Monitoring, Reporting and Verification (MRV) of CO₂ emissions have entered into force, requiring all ships above 5,000 GT sailing to or from European ports to comply. Ships must also report cargo data and average energy efficiency. The EU will make the data publicly available on an annual basis. Monitoring plans are to be submitted to verifiers by 31 August 2017, with 2018 being the first year of reporting. Data will be published by the EU in mid-2019. There is extensive work in progress to develop the practical framework and the EU is expected to finalise most practical details towards the end of 2016.

Part of the purpose behind the EU MRV regulations is to encourage IMO to work on a similar mechanism with global, not only regional, coverage. The EU has stated that if this happens it will mothball its regulation. It is therefore of great significance that MEPC 69 did agree on a global mechanism for mandatory monitoring, reporting and verification of fuel consumption data for all ships above 5,000 GT. The scheme is expected to be adopted at MEPC 70, in which case 2019 will likely be the first year of operation. However, the scheme differs from the EU MRV in several important aspects, including confidentiality of data, calculation

of efficiency metrics and requirements regarding the verification of data. While the European Commission sees the IMO work as an important step towards a robust international system, the IMO will need to finalise its system before the European Commission will start assessing whether it can be accepted as a replacement for the EU MRV. Given the political challenges to achieving agreements in Brussels and the time-consuming formal processes, DNV GL expects that the shipping sector will have to deal with two different but overlapping reporting regimes for at least some years.

IMO is also seeing a reinvigorated discussion on long-term CO₂ emission goals following the global climate change agreement reached in Paris last year. There is as yet no agreement within IMO regarding the need to move beyond establishing a fuel data collection system, and it remains to be seen whether consensus can be reached. DNV GL sees a very real risk that unless significant progress is quickly made at IMO, other bodies outside the shipping industry may attempt to issue regulations. This would not be of benefit to anyone, least of all the shipping sector itself.

More information on the EU MRV system is available at dnvgl.com/maritime/mrv-regulation.html.

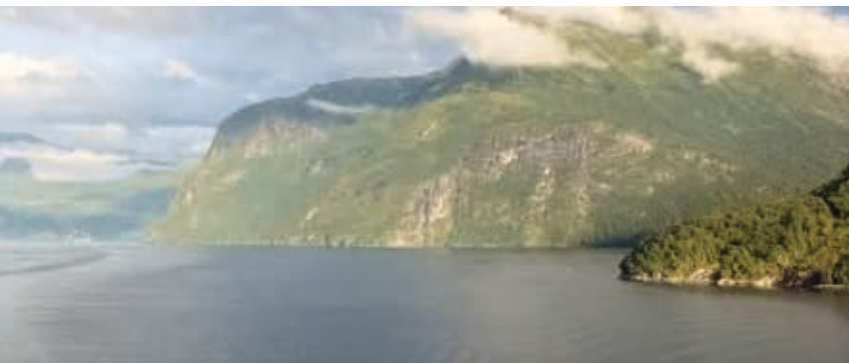
Energy efficiency design index

The IMO is presently working on deciding the appropriate EEDI requirement levels for phase 2, which will become applicable in 2020. While it remains to be seen if the reduction rates specified in the existing MARPOL regulation will remain unchanged or not, DNV GL expects intense discussions at MEPC 70 starting on 24 October. It has also become clear that there are certain aspects to how the attained EEDI is calculated for ro-ro vessels that make it very difficult for these ships to reach the levels presently required

DNV GL SOFTWARE TOOL FOR UPCOMING RULES

To help owners stay ahead of new developments related to upcoming IMO and ILO regulations, DNV GL offers a software tool called "RequirementExplorer", which allows customers

to browse upcoming new rules and regulations. The tool is available on "My DNV GL". It enables efficient searches using ship type, keel-laying date, size and other properties as search criteria.



for phase 1, let alone the future phase 2. As this is a highly complex matter for reasons both technical and political it remains unclear whether the issue will be resolved at MEPC 70 or not.

Open questions regarding the upcoming EU MRV scheme

The new EU MRV regulation is coming: in August 2017 shipping companies will have to hand over their new "monitoring plans" to their verifiers, and monitoring of "CO₂ emissions based on fuel consumption" will begin in January 2018. How exactly verification is to be performed remains somewhat unclear. DNV GL expects most issues to be settled towards the end of this year, but with a few left open until summer 2017.

Some shipping companies are bracing themselves for the new regulation. SEATRUCK for example has invested in advanced fleet performance management and are using the DNV GL ECO Insight portal. ECO Insight includes voyage reporting software which automatically delivers pertinent MRV reporting data. The solution also makes the verification process much easier by giving the DNV GL verification team access to relevant information.

Shipping companies facing the issues described in the info box on the right are advised to take action now to ensure compliance with the EU MRV regulation. ■ EN

All technical and regulatory news can be found at dnvgl.com/tecreg



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ISSUES TO CONSIDER WHEN PREPARING FOR THE UPCOMING EU MRV REGULATION

! There is no voyage reporting available/taking place

In shipping it is widely accepted practice to report the position, time, speed, distance, consumption, cargo, weather and other key data at key points of a voyage, including the departure, beginning of sea passage, noon and end of sea passage. If no such reporting routine is in place, or if reports are sent to the charterer only but not to the owner, this needs to be changed. Only vessels sailing exclusively in EU waters or executing more than 300 voyages in one year are exempt from voyage reporting.

! Voyage reporting is done via plain e-mail without any further onshore processing

Many voyage reports are simple, daily e-mails in a defined format which are sent by the master to a list of recipients. Most of the recipients use these messages to simply confirm that the vessel is still "alive". The data stays on the mail server without undergoing any further onshore processing. DNV GL believes that a proper electronic voyage abstract will be required for verification. Creating such a record manually from hundreds of e-mails every year for every vessel of a fleet will be an impossible task.

! Voyage reporting data is not processed further / data quality is unknown

Even if the voyage data is electronically available in an onshore database, the biggest challenge remains: without further processing for purposes such as post-voyage calculations or performance management, the quality of the data may be compromised by issues such as a broken voyage event sequence, missing reports, incorrect time stamps or positions and implausible consumption, cargo or speed data. Under the MRV scheme, this will result in denial of verification or even a poor EEOI ranking and damage to the owner's and operator's reputation.

Shipping companies facing at least one of these issues should address them now. Where a proper voyage reporting system is in place, the data should be processed, for example as part of a performance management scheme. Apart from the obvious benefits of performance management, doing so will improve data quality. Where no voyage or noon-time e-mail reporting is customary, an appropriate software-based voyage reporting system should be implemented which will deliver MRV reports automatically and run internal checks to ensure proper data quality. The DNV GL ECO Insight on-board reporting tool Navigator Insight is the most common application worldwide.

Find more DNV GL blogs at
blogs.dnvgl.com/performance



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About DNV GL

Driven by its purpose of safeguarding life, property and the environment, DNV GL enables organizations to advance the safety and sustainability of their business. Operating in more than 100 countries, our 15,000 professionals are dedicated to helping our customers in the maritime, oil & gas, energy and other industries to make the world safer, smarter and greener.

DNV GL is the world's leading classification society and a recognized advisor for the maritime industry. We enhance safety, quality, energy efficiency and environmental performance of the global shipping industry - across all vessel types and offshore structures. We invest heavily in research and development to find solutions, together with the industry, that address strategic, operational or regulatory challenges.

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