



BIMCO

BULLETIN

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Game-changer or business as usual? New sulphur regulations now in force

BIMCO committee meetings round-up

Building the "Internet of Things" at sea

e-navigation: what is it, where did it come from, and what does it do?

BIMCO Bulletin goes Quarterly



As you may have noticed, Bulletin 6/2014 is also Bulletin 1/2015.

From 2015, the BIMCO Bulletin will become a quarterly magazine; arriving for you at the beginning of January, the beginning of April, the beginning of July and the beginning of October.

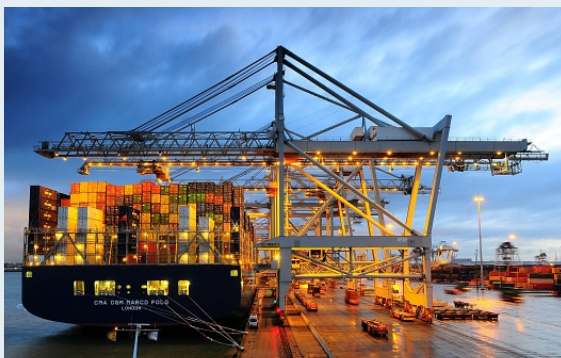
BIMCO aims – as always – to provide readers of the Bulletin with thought-provoking articles on current events and challenges in the shipping industry. Moving to quarterly editions reflects a change of focus to allow BIMCO to create themed issues of the Bulletin, providing expert insight and analysis from our staff and experienced correspondents on some of the most prominent issues for the industry.

We look forward to providing a better, more focused magazine to our members. With this in mind, we would also very much like to hear from you, the reader. We welcome your comments on the Bulletin and we'd like to hear if there are any specific article topics you would like to see more of.

Please contact the Editor, Stephen Gadd, on sg@bimco.org. Your feedback is important to us.

CONTENTS

Key discussions from the Board of Directors meeting in Rotterdam *p.2*



e-navigation: what is it, where did it come from, and what does it do? *p.24*



Treating ballast water in an in-journey system *p.30*



BIMCO

- 2 Key discussions from the Board of Directors meeting in Rotterdam
- 4 Documentary Committee holds Autumn meeting in Copenhagen
- 8 Game-changer of business as usual? The new sulphur regulations are now in force
- 10 BIMCO secures 80% fee rebate for BIMCO eLearning participants in Hong Kong
- 11 Welcome to BIMCO
- 12 Watchkeeper

IMO

- 14 Full agenda for both MEPC and MSC meetings at IMO

General

- 18 Getting to grips with CSR
- 20 Building the "Internet of Things" at sea
- 24 e-navigation: what is it, where did it come from, and what does it do?
- 28 Should ship owners be looking to the skies?
- 30 Treating ballast water in an in-journey system
- 34 The Panamanian flag registry – worldwide leader
- 38 Anticipating accidents waiting to happen
- 40 Powerline Communications: the maritime network solution
- 44 Keep on training...until roboships sail
- 46 New books

Shipping Market Overview & Outlook

- 48 Macro economics
- 50 Dry bulk shipping
- 52 Tanker shipping
- 54 Container shipping
- 56 The outlook for multi-purpose and heavy-lift fleets

Round-ups

- 58 China: The new silk road, oil transparency, free trade agreements and pollution
- 60 Fuel dramas: present and future
- 62 EU: MRV legislation, sanctions, sustainable shipping, ship recycling, piracy and port policy
- 64 US: Elections, sulphur limits, fuel compliance and ballast water

Shipping Law

- 66 London Arbitration – T/C – Failure to pay hire
- 69 US Appeal Court Decision – FIO – Cargo damage – Owners' liability



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Snow hits the ECT terminals, Rotterdam.
(Photo: portpictures.nl)



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Key discussions from the Board of Directors meeting in Rotterdam

Some important discussions were had and decisions made at BIMCO's Board of Directors meeting in Rotterdam on 10 November 2014 on a range of industry issues.

Robust enforcement of sulphur limits in emission control areas

Following a recommendation from BIMCO's Marine Committee, the board made the decision to publicly call on governments to exercise "robust" enforcement of sulphur limits applicable to ships operating in Emission Control Areas (ECAs) in order to ensure that the industry is operating at a high level of compliance.

BIMCO President John Denholm described this position as crucial to maintaining a level playing field for shipping companies operating in Emission Control Areas and ensuring that compliant companies were not left at a disadvantage. The President said: "The maritime industry will shortly experience an unprecedented rise in operating costs as countries bordering ECAs implement very low limits for sulphur content in the fuel oils used by ships.

BIMCO is calling on the governments of these countries to exercise robust enforcement of applicable sulphur limits to ensure a continued level playing field for ships operating in ECAs. Failure to do so would seriously expose compliant ship owners and operators who are bearing the high cost of ultra-low sulphur diesel oil."

BIMCO has updated its position paper on air pollution accordingly. The paper also suggests that the consequences of non-compliance due to lack of enforcement should be an essential element of the forthcoming debate and decision within the International Maritime Organization (IMO) in

2018 when they consider fuel availability for compliance with the global 0.5% sulphur limit set for 2020.

Standard term sheet for ship finance

Shortly after the meeting in Rotterdam, BIMCO announced its intention to develop a standard term sheet to assist the shipping industry in the creation of ship financing documentation, following a decision from the board.

The secretariat reported to the board on the in-depth research it has carried out with ship-financing banks and shipping companies into the viability of developing a standard ship financing agreement. Whilst a full agreement was considered to be too ambitious at the present time, there was enough evidence to suggest that the development of a standard term sheet would be worthwhile.

The aim of developing a standard term sheet would be to offer lenders and borrowers a comprehensive and simple standard which would become well-known – and could replace the many individually drafted term sheets developed by banks and other financial institutions. As a result, this standard would have the potential to facilitate the provision of ship financing, increase predictability and reduce cost.

A term sheet usually contains a number of provisions for a term loan facility, revolving credit facility, or a combination of both, and further provisions on particular issues such as currency, interest, fees, guarantee, security, pre-payment, and cancellation.

Angus Frew, Secretary General of BIMCO, commented afterwards on the decision, saying: “This decision is an important step towards developing a standard term sheet that will simplify ship financing documentation for our members and users of BIMCO documents, saving them time and money.

“We think that both lenders and borrowers will see the benefits of having this kind of standard available.

“Our goal is always to provide clearly drafted and balanced documents for industry to use and so the sub-committee will include both bank and ship owner representatives and their lawyers.

A dedicated sub-committee will now be set up to draft the term sheet, with the first meeting expected to be in spring 2015.

Clarifying BIMCO’s position on bribery and facilitation payments

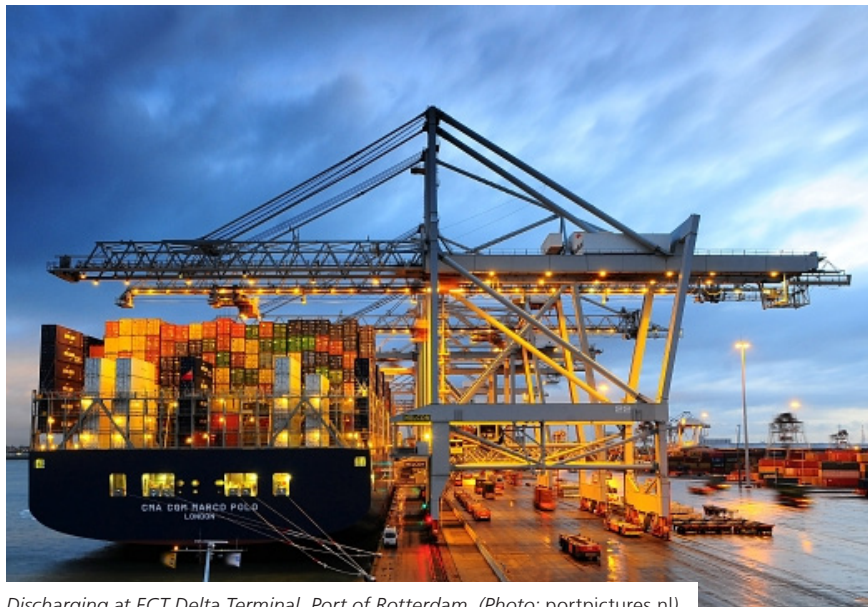
After some discussion, the board added the issue of bribery and facilitation payments to BIMCO’s agenda. The secretariat will be drafting a position paper on this for discussion at the next meeting.

BIMCO to launch vetting system for dry bulk terminals

Following input from the Marine Committee, the board agreed to the initiation of BIMCO’s new vetting system for dry bulk terminals. The purpose of the system is to assess the quality of the facilities and services at these terminals, in order to identify recurring issues and drive long-term improvement.

The quality of dry bulk terminals can make a clear impact on a ship’s ability to fulfil its potential in terms of efficiency and performance – for example, on how long it takes to load and unload or refuel.

The Marine Committee has prepared a questionnaire to collect information on the quality of dry bulk terminals and tried to make it as quick and simple as possible to complete. The analysis of data gathered will be published through the appropriate BIMCO media and if necessary used in discussions with terminals when proposing the need for improved practices. The identity of the ships taking part will



Discharging at ECT Delta Terminal, Port of Rotterdam. (Photo: portpictures.nl)

always remain anonymous to parties other than the BIMCO Secretariat. The board approved the launch of this system, which is planned for January 2015.

Board concern over MRV regulation from the European Commission

The board discussed concerns raised by the Marine Committee over the European Commission’s proposal for a Regulation on monitoring, reporting and verification (MRV) of CO₂ emissions from ships – which has since been agreed informally by co-legislators and is expected to be finalised in January 2015. This agreement creates a unilateral European MRV system that will become operational as of 2018, applying to ships above 5,000 GT arriving and/or departing from EU ports. The system is claimed to be neutral regarding flag and ownership.

Apart from data on CO₂ emissions and distance sailed, the EU also proposed that the Regulation will require ships to report cargo-related information – a feature that the committee fears will not prove conducive to an international agreement on CO₂ reporting internationally – and will also create problems related to data reliability, confidentiality, reporting responsibilities and obligations.

The committee also suggested that cargo related data will not be of much value, as it relates to past commercial utilisation of ships, will not serve to assess ships’ future performance capabilities and may in addition be commercially sensitive. BIMCO will carefully assess the EU MRV system as soon as the full text of the agreement becomes available.

Proposal to improve incident reporting in the Gulf of Guinea

The board discussed the latest report from the Maritime Security Committee, in which it emphasised the importance of taking a reinforced position on the Gulf of Guinea (GoG) situation, which continues to escalate. The need to encourage more realistic reporting of incidents by The Regional Cooperation Agreement on Combating Piracy and Armed robbery against Ships in Asia to improve transparency in the region was also highlighted.

In order to achieve more detailed reporting in the GoG, with more accurate statistics, BIMCO and the Round Table of international shipping associations are supporting the Maritime Trade Information Sharing Centre (MTISC) GOG. It was further agreed that lobbying the UN would probably not have much effect and a more direct approach was needed.

The board agreed that, following the reporting of an incident in the GoG, members should lobby their governments (via their national chambers of shipping) to engage with Nigerian ambassadors to address the issue.

Overall, emphasis also was put on the necessity to avoid complacency in the Indian Ocean and avoid unnecessary risks.

Next meeting

The next meeting of the Board of Directors will be in May 2015. All the latest BIMCO position papers are available under the “Viewpoint” section of the BIMCO website (www.bimco.org). (GW) ■■

Documentary Committee holds Autumn meeting in Copenhagen

NYPE, Anti-corruption, bunkers, Asian Gypsy Moth, ship to ship transfer and standard term sheet for financial agreements top busy agenda in Copenhagen.

BIMCO's Documentary Committee, under the Chairmanship of Mr. Karel Stes, met in Copenhagen on 7 November to consider a number of new contracts and clauses for adoption and to receive project updates on several ongoing tasks. Two contracts and five standard clauses were approved for publication. The following is a summary of the meeting.

Standard Bunker Contract

With bunkers representing a significant daily operational cost for ship operators,

there is a strong incentive to enter into bunker purchase agreements on clearly drafted terms that provide the certainty required by the parties.

The revision of BIMCO's Standard Bunker Contract involving buyers and suppliers from Europe and Asia has been thorough. The result is a fair and balanced, modern and comprehensive fuel purchase agreement that can be used anywhere in the world. The contract has been brought up to date to reflect current practice and regulatory changes. The Standard Bunker Con-

tract 2015 will be published together with explanatory notes by the end of 2014.

Qatar Fertiliser Charter Party

The second document to be approved by the Documentary Committee was the re-branded and updated QAFCOCHARTER and accompanying bill of lading, now codenamed MUNTAJATCHARTER and MUNTAJATBILL.

In 2012, the Qatari State set up a new company – Muntajat – to sell and distribute chemical and petrochemical products produced in Qatar. At the request of Muntajat, the voyage charter party and bill of lading were revised by adding and polishing several of their commonly used rider clauses and replacing old versions of BIMCO standard clauses with the latest editions. To reflect the change of the company who sells and distribute the fertilizers the forms were re-named.

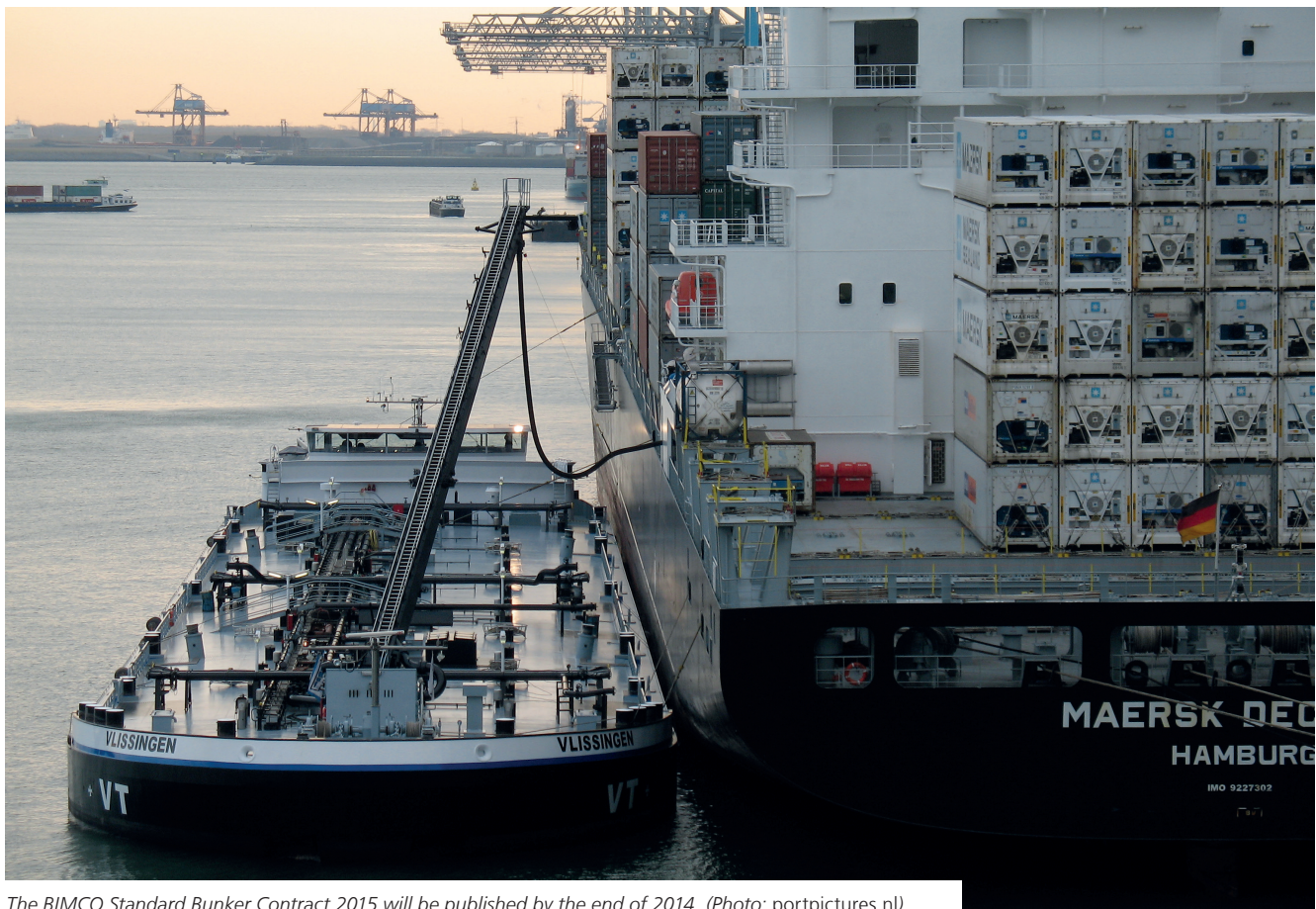
Asian Gypsy Moth clause for Time Charters

A generic clause to deal with the prevention and certification in relation to the Asian Gypsy Moth (AGM) pest was approved at the Documentary Committee meeting and will be available to download shortly from the clauses section on BIMCO's website.

The clause avoids making reference to specific ports, seasons and geographical areas since this may preclude any new countries that may take measures to combat AGM in the future. Under the clause, the owners are obliged to deliver the vessel free from AGM and provide an AGM Free Certificate if the vessel has traded to risk areas within a specified period prior to delivery. The clause permits charterers to trade to risk areas,



A clause to deal with the prevention and certification in relation to the Asian Gypsy Moth was approved. (Photo: US CBP)



The BIMCO Standard Bunker Contract 2015 will be published by the end of 2014. (Photo: portpictures.nl)

but when doing so they accept the risk and responsibility for any consequences relating to AGM. Finally, the vessel should be redelivered free of AGM and with an AGM Free Certificate to complete the cycle ready for the next time charter agreement.

Bunker Non-Lien Clause for Time Charters

The most recent financial crisis resulted in several charterers going out of business, leaving owners with unpaid time charter hire and bunker suppliers with unpaid bunker bills. What we have seen as a consequence of this is that bunker suppliers have arrested ships to try to recover their losses from the ship owners. Under English law there will be no maritime lien on the ship for unpaid bunkers. However, there are some jurisdictions that will allow such liens to be created, even without a contract between the owners and bunker suppliers. The most notable example is the United States, where the charterers are presumed to have authority to buy bunkers on behalf of owners.

To give owners a tool to deal with this situation and lessen the risk of being hit twice – firstly by the loss of hire due to the charterers going out of business and

then secondly by the vessel being arrested at a later stage by bunker suppliers trying to recover unpaid bunkers – a clause has been developed and approved by the Documentary Committee.

The Bunker Non-Lien Clause for Time Charter Parties builds upon non-lien provisions commonly found in standard time charters such as NYPE by making a specific requirement for charterers to put their bunker suppliers on notice that the owners are not a party to the bunker contract. The notice is to be given to suppliers prior to ordering bunkers. This will remove any implied authority that charterers may have under, for example, US Law to bind owners to a bunker contract and thereby remove the possibility for suppliers to claim a maritime lien on the vessel.

Ship to Ship transfer Clause for Voyage Charters

To complement BIMCO's standard ship to ship transfer clause for time charters, a voyage charter party version has been developed and approved for publication. As tanker charters normally include ship to ship transfer operations as standard provisions, this clause is aimed specifically at the dry bulk trades.

Ship to ship operations under the clause covers all cargo activities to or from any other vessel and includes floating cranes and barges. If such operations are undertaken at other places than at berth, for example, at anchorage, notice of readiness may be tendered and laytime will count in accordance with the underlying charter party. A Special Circular explaining the reasoning behind the clause will be published in due course.

International Group of P&I Clubs/ BIMCO Himalaya Clause for Bills of Lading

The aim of a Himalaya clause is to protect those acting on behalf of the owners from direct action. In response to US Case Law, where shipmanagers were held not to fall within the scope of a so-called "Himalaya" clause, the International Group, together with BIMCO, has revised and updated its Himalaya Clause for Bills of Lading. The revised Clause will be published on BIMCO's website and is to be incorporated into all BIMCO Bills of Lading in due course.

NYPE

The revision of NYPE is now at a very advanced stage. At the committee meeting it was decided to defer approval of the contract in order to provide a little more time

to further review this important and significant update.

Over the Summer, three well-attended consultation seminars took place in London, Stamford and Singapore to discuss and invite comment on the revised NYPE before industry audiences. These seminars generated a large number of comments and suggestions which have been processed by the revision sub-committee. The response to the revised NYPE from those who have reviewed it has, on the whole, been very positive and supportive and it is hoped that the revised edition will be ready for publication shortly.

Standard Ship Financing Term Sheet

The Documentary Committee also discussed the development of a standard ship financing agreement in order to provide owners with a more balanced loan agreement when dealing with banks. The proposed project has been scaled down to a standard term sheet, which can be compared to a sort of recap including the main terms agreed.

Following the meeting, BIMCO's Board of Directors met and gave a mandate to the Documentary Committee to embark on this project. Much research has been undertaken by the Secretariat in respect of the feasibility of this project and it appears that several major ship-financing banks have indicated their support and willingness to participate in the task of creating a standard term sheet.



To complement BIMCO's standard ship to ship transfer clause for time charters, a voyage charter party version has been developed and approved.

Anti-corruption measures

Combatting corruption in the shipping industry is an important task that has united owners and charterers in their attempts to stamp out the practice. There is a difficult balancing act to achieve between setting a standard of compliance with anti-corruption legislation and at the same time responding to the difficulties that the Master and crew may face as a consequence of refusing to "pay" officials, whether in cash or kind.

There are currently numerous market-derived anti-bribery clauses in circulation. These are often very far-reaching and harsh on the owners and may, in some cases, entitle the charterers to terminate even on a mere suspicion of corruption.

The clause, which can be used in both voyage and time charter parties, will serve as a clear and balanced alternative to market-drafted anti-corruption clauses. The committee gave the mandate to fast track this clause so that it may be published as soon as the last outstanding points have been resolved.

ROPAXTIME, LNGVOY and SUPERMAN

Projects updates were also given on the development of three new contracts. The first one was ROPAXTIME which is a standard time charter party for the Ro/Ro passenger ferry trade. This contract will be put forward for approval in May 2015.

The second contract the committee was briefed about was voyage charter for the transportation of LNG cargo that is under development. The nature of the LNG cargo with an extremely low temperature (-163 C) and its tendency to continuously boil-off poses additional challenges for the drafting sub-committee.

The third and final document to report on was the preliminary code named SUPERMAN. This form will provide owners and supervisors with standard terms and conditions when entering into agreements for supervision services for newbuildings, vessel constructions and repairs. Both LNGVOY and SUPERMAN are at quite early stages in the development and are expected to run for another year.

New projects

With a number of new contracts and clauses approved for publication there will be room on the committee's agenda for new projects to start. In response to Ebola and other viruses that may occur in the future, mandate was given to fast track work on a new fevers and epidemics clause.

Work will also begin on a number of other new clauses covering issues such as fumigation and late redelivery under a time charter. The committee also gave the go ahead to develop a standard novation agreement for when parties to a contract change.

The next meeting of the Documentary Committee be in May 2015. (GH) II

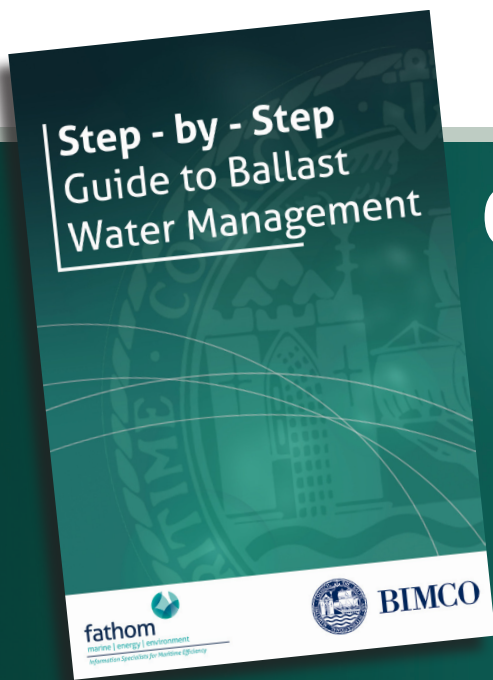


BIMCO's new ROPAXTIME is a standard time charter party for the Ro/Ro passenger ferry trade. (Photo: Finnlines)

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Game-changer or business as usual? The new sulphur regulations are now in force

The requirements of MARPOL Annex VI for ships trading in Emission Control Areas (ECAs) are not just affecting ship owners but also the charterers of the many ships which are trading under time charter contracts. The advent of the New Year saw a significant lowering of the sulphur limits on fuel oil burned on board vessels when trading in an ECA.

During the latter part of 2014, BIMCO received an increasing number of enquiries concerning these changes and many of the concerns raised showed that both owners and charterers had postponed the inevitable discussions the tightening of MARPOL Annex VI, regulation 14.4, would give rise to.

While the preceding regulation requiring the sulphur content of fuel oil to be less than 1.00% was relatively easy to comply with in the sense that the required fuel could be stored in the designated heavy fuel oil (HFO) bunker tanks, the new lower limit of 0.10% sulphur content represents more serious challenges to owners, as well as charterers of time charter tonnage.

A number of options

Owners have a number of options available for complying with the new regulation and based on our communication with members, it seems the majority intend to comply by way of burning low sulphur marine gas oil (LSMGO) while trading in the ECAs. This decision leads to discussions about how to store the LSMGO when the ship is on time charter and whether the owner may be required to clean the HFO fuel tanks and the associated piping system and possibly modify the piping so that the ship can store the LSMGO in one or more of its HFO tanks in addition to the MGO bunker tanks which in many circumstances only allow for a limited quantity.

While owners may wish to avoid the challenging and expensive cleaning and possible modification of the ship, the charterers' main object will be to stem bunkers as infrequently as possible and also to avoid costly

operational difficulties. As one may expect, this inherent conflict has been the basis for many of the enquiries received by BIMCO.

Some charter parties contain clauses which deal with this issue in one way or the other; either it has been specifically covered or there may be references to who is to bear the costs when the ship must comply with e.g. updates to MARPOL regulations. There are, nevertheless, many time charter contracts that unfortunately do not address this issue at all and since unpleasant discussions have the tendency to be deferred, many such discussions have been left to the last minute.

The outcome is that most ships – perhaps after some modifications based on the engine manufacturer's advice – will be able to switch to and burn fuel within the permissible sulphur limits, such as LSMGO. As indicated, many of these will have to bunker more frequently than has been the case in the past, simply due to the limited storage capacity for this type of fuel. This will usually be in the ship's MGO bunker tanks, which on most ships will be the only readily available tanks for this grade.

The charterers may consequently seek to argue that the ship should be able to store a "sufficient" quantity for the intended voyage, but the reality is that it is close to impossible to define an exact limit for what is "sufficient". The charterers might also find it unreasonable that the ship may need to stem bunkers more frequently. However, what may be "reasonable" is not always possible to predict and may be legally considered only once such a dispute comes before a court or an arbitration tribunal. The general issue will probably be subject to litiga-

tion relatively soon; the costs for the parties may be high, the charter parties perhaps unclear and it is a subject which is vital to the shipping market in general.

BIMCO's opinion

BIMCO is of the opinion that in the absence of specific provisions concerning trading in an ECA after 1 January 2015, the important issue is whether the ship is "compliant". "Compliance", in our opinion, means whether the ship is capable of being compliant with the rules and regulations when trading within an ECA and requires that the ship is able to, and will burn, fuel oil which is within the maximum sulphur limit.

Having considered all aspects of the disputes on which we have been requested to comment, we believe that there would not be any obligations for owners to clean the tanks and/or modify the ship to be able to store more low-sulphur MGO on top of what can already be accommodated in its designated tanks for such fuel oil type, provided the ship is capable of being compliant.

Parties could, however, raise arguments which would lead to discussions such as to whether a ship's tank capacity for the storage of the permissible type of fuel oil to be burned in a certain area will have a bearing on whether a ship may be said to be compliant (or not). Is a ship compliant as long as it can burn fuel oil within the permissible sulphur limit, no matter how little tank capacity it has for such fuel? Or, will a charterer be able to argue that the ship is non-compliant if it has such limited capacity that it will require very frequent bunkering? If the tank capacity does matter, where does one draw the line? What capacity is reasonable

for the charterers to expect (and should they have considered this prior to fixing the ship on period)? How frequent a bunkering is unreasonable for the charterers? How often does the ship in fact trade in such areas where the very low-sulphur requirement is in place – and does that matter?

The questions and arguments are many and in BIMCO's opinion, it must be concluded that it is very difficult to set any limits in respect of tank capacity and frequency of bunkering, if indeed they have a bearing at all on whether a ship can be considered to be compliant or not from a legal point of view.

While BIMCO would have preferred to be able to give very clear answers to members enquiring about this change of regulation, after careful consideration we are not in a position to say that the above questions will lead to a definition concerning what quantity is "sufficient" or for that matter "reasonable". We will, however, monitor the legal developments on this matter closely and all relevant information can be found on our website www.bimco.org where members may also find information concerning the more technical aspects of MARPOL Annex VI and fuel switching.

Other important factors to consider are that the owners of a ship on time charter will presumably get the ship back at some point in time (unless it has been sold to the charterers or other buyers in the meantime), hence the evaluation of the best possible solution will have to take that into account and not only focus on the immediate situation while the ship is operated by the charterer. The owners may also operate a fleet of ships themselves and base their decision about how to comply on the experience they gain from these ships. They may be operators and take ships on time charter at the same time as they charter their own ships out, so the "owners" may not have the same interest in all situations.

Find an amicable solution

BIMCO urges the parties, as a first step, to try to find an amicable solution to issues that may arise in relation to the new regulation. This will be in the interest of both parties having already entered into charter parties which do not contain clauses regulating this. For future contracts we strongly advise the parties to take the opportunity to address the effect of the regulation and how the ship must comply, already when negotiating the charter party terms. ■■

Alternatives in Emission Control Areas

In order to comply with fuel containing a sulphur level as required e.g. in MARPOL Annex VI and various local regulations, the owner can either make use of low-sulphur fuel directly or choose to use so-called "equivalents" as alternative means to achieve the required SOx.

"Equivalents" can be divided into 'primary' and 'secondary' controls. Primary controls prevent the pollutant being formed in the first instance, whereas with secondary controls the pollutant is removed to the extent required before from the exhaust gas stream.

The most frequently used alternatives, which comply with the ECA fuel oil sulphur requirements are:

- Fuel-switching (HFO and low-sulphur fuel oil);
- Liquefied Natural Gas (LNG);
- Scrubbers (Exhaust Gas Cleaning Systems);

A relatively simple way to fulfil a primary control is to make use of a low-sulphur fuel oil or LNG. However, based on cost calculations and time spent in an ECA, an owner or operator may prefer a solution related to secondary controls, involving the use of exhaust gas cleaning systems (EGCS) or "scrubbers".

An overview of fuel oil sulphur limits for ships after 1 January 2015

Description of area	Effective date	Maximum sulphur limit
Emission Control Areas – ECAs (MARPOL)	In force	0.10%
United States Caribbean Sea Emission Control Area – ECA	In force	0.10%
Hong Kong Waters	In force	0.50%
Turkish ports and anchorage within port limits	In force	0.10%
All EU ports and anchorage within port limits	In force	0.10%
North Sea and Baltic Sea Emission Control Area - ECA	In force	0.10%
EU waters outside ECSS	Until 1 January 2020	3.50%
EU waters (passenger ships)	Until 1 January 2020	1.50%
EU outside ECAs	1 January 2020	0.50%

Editor's Note: This article was prepared jointly by BIMCO's Front Office and Marine Department.

BIMCO secures 80% fee rebate for BIMCO eLearning participants in Hong Kong

BIMCO is delighted to announce that all students eligible for its eLearning modules in Hong Kong will be entitled to a refund of 80% of their course fees.

All six modules in the BIMCO eLearning Diploma Programme have been listed under the Professional Training and Examination Refund Scheme (ProTERS) under the Maritime and Aviation Training Fund (MATF) in Hong Kong.

BIMCO eLearning participants eligible for the fund will be refunded 80% of the course fees for completing pre-approved courses/examinations. To be eligible, applicants must meet the following requirements:

- Be a resident of the HKSAR and lawfully employable in Hong Kong;
- Be in full-time employment in the maritime or aviation sector with an organization/company in Hong Kong during the time when taking the pre-approved course/examination and at the time of application;
- The applicant has enrolled in one of the pre-approved courses or taken one of the pre-approved examinations on or after 11 January 2014 and has completed the course to the satisfaction of

the course provider or passed the examination;

- The applicant has not been granted any other form of government subsidy or financial assistance for the relevant pre-approved course/examination.

Each successful applicant will be refunded 80% of their fees, subject to a maximum of HKD 18,000 (whichever is less) for the pre-approved course/examination. Only the fees for enrolling in the pre-approved course(s) or taking pre-approved examination(s) can be refunded. Any other charges, such as registration fees, administration fees, late charges and change of course fees are not eligible for refund.

Each individual may apply for a fee refund for more than one pre-approved course/examination, up to a ceiling of HKD 18,000 per person under the Scheme.

Application should be made by individuals. Application from companies/organisations will not be accepted.

About the programme

The Transport and Housing Bureau (THB) launched the Maritime and Aviation Training Fund (MATF) on 1 April 2014 to support manpower training within the maritime and aviation industries. One of the initiatives under MATF is the Professional Training and Examination Refund Scheme.

Contact

For enquiries regarding the Professional Training and Examination Refund Scheme please contact The Transport and Housing Bureau (THB) at matf@thb.gov.hk and +852 35097261

For more information about the BIMCO eLearning Diploma Programme, please contact:

BIMCO Education Department
Tel: +45 44 36 68 00
E-mail: education@bimco.org
Website: www.bimco.org



Welcome to BIMCO!

BIMCO would like to extend a warm welcome to the following new members, admitted during the period from 1 October 2014 to 30 November 2014.

Owner Members

Hangzhou, China
Athens, Greece
Athens, Greece
Glyfada, Greece
Glyfada, Greece
Piraeus, Greece
Kuala Lumpur, Malaysia
Monaco
Singapore
Dubai, United Arab Emirates

Zhejiang Materials Industry International Co., Ltd.
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MOL Bulk Carriers Pte. Ltd.
Al Ghurair Resources - AGR

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Bowline Defence Ltd.

Lessons from a simulation

Nobody in the maritime world would deny the usefulness of simulator training, whether it is deck officers being exposed to white-knuckle emergencies in their navigation training or engineers learning to cope with the unexpected in their control rooms.

There are excellent specialist simulators now available training officers in LNG, chemical or oil cargo handling, even model ships on lakes that replicate perfectly the handling characteristics of vessels sixty times bigger.

Simulation has been identified as a credible and cost-effective way of enhancing competence, reproducing authentic ship or machinery performance which can both train and test people in a safe way that would just not be possible in a real ship. Moreover, it can replicate the unexpected, so that an officer who might (if he or she was lucky) live through a career, without experiencing the sort of emergencies which can be produced on a simulator, would be provided with some useful preparation, should such an emergency arise.

Authentic and believable

If such training is available for those who meet challenges of various sorts at sea, why should not those who operate and manage ships ashore, be provided with some useful preparation for the unexpected which might always occur, where ships are concerned? In this respect, it might be thought that BIMCO's production of "Double Jeopardy", reprised in a theatre in London after a very successful "premiere" at the Dubai AGM earlier in the year, was a very effective form of "simulator" training for those who own, operate, manage and charter ships.

The ground rules for simulator training really require that the scenario being portrayed is authentic, believable and quickly ensures that those involved forget that they are not out in the "real world". "Double Jeopardy", which followed the action

in the immediate aftermath of a grounding, accompanied by pollution in a US river port, with a subsequent arbitration, fulfilled these criteria admirably.

This was much more than mere theatre, although the performances of John Tsatsas as the ship owner, Han van Blanken as the charterer, with the dreaded media represented by Julian Bray, were very believable. Film, juxtaposed with the live performances, saw the unwelcome early morning call announcing the grounding of the bulk carrier, gradually expanding in scope to take in P&I clubs, lawyers representing both owner and charterer, classification society, hull and machinery and cargo insurers.

Lindsay East, who had written this script, provided a useful link, ensuring that the audience (or were we those under training?) remained "interactive", with voting machines at the ready to answer questions which put us in the place of the participants.

Piling on the pressure

This was a trial by both media and the law and as the pressure was piled on the two principals, the audience was given valuable facts that perhaps should have registered with the really alert. Neither party – a modest size ship owner on the one hand or a major charterer – had any form of media training or exposure to the media, which was to prove a serious disadvantage.

Response plans were in place, but the scope of the emergency grew like an amoeba, as it was revealed that the leaking fuel oil was spreading fast in the fast-flowing current of a rain swollen river (a clue here). There was a chilling reminder about the strict liability in place in the US, the threat to a much-

loved bird which was found in the estuary, the likelihood of criminal proceedings.

There appeared to be ambiguity about an exchange of e-mails and telephone communication between the parties over the safety of the river, the under-keel clearance, the safety of the port itself, the concerns of the Master, the issue of lightening, the urgency of the charterer to expedite the discharge, the belief of the owner that a "hold harmless" agreement was in place to encourage the Master to proceed.

Seeds of discord

If the seeds of discord and disagreement between business colleagues had been sown by the presentation of the facts, the arrival on the scene of the media and protesters against the pollution would put both parties firmly in the public arena. Unguarded remarks by the owner and uncertainty about the facts of the matter would provide both scope for media attack and public disagreement between the parties, who by now blamed each other and were shown in a markedly unsympathetic light.

This was only magnified in a TV studio, where the fierce Julian Bray forensically exploited the weaknesses of the two principals and engaged the support of a hostile audience. It is also worth noting that while the media and how to deal with it are indeed a sensible subject for training, the power of "social" media with its ability to lobby, generate almost instant opinion and engage public and politicians alike is perhaps a force that the industry is only just coming to terms with.

The questions came thick and fast in this half of the performance. Was the port safe? Was the Master pressurised to leave the

safety of the river mouth and proceed? Did an apology constitute an admission of liability? Should the principals have hopped on aircraft to deal with the matter on the spot? Was it sensible, although there was a pilot aboard and tug engaged, to have so emphatically blamed the other party? Should the principals have left themselves so exposed to protest, and to the questioning of a hostile media and public? Was the owner or charterer liable?

Basis of arbitration

This latter question would form the basis of

an arbitration in English law before three arbitrators, with the two principals quizzed by the opposing counsel about the facts as presented. Chirag Karia QC and Nevil Phillips, counsel for the owner and charterer respectively showed their extraordinary skills in unpicking the fine detail of the case, with learned reference to existing case law. All revolved around whether the port was safe, whether the charterer was in breach of the agreement by ordering the ship to go there and whether this had caused the loss.

Technical facts were blended with appli-

cation of the law, navigation and seamanship vied with inferences about commercial pressure and the possible negligence of the Master in his treatment of the phenomenon of “squat” in the fast river current. It was indeed the error of the master in his calculation of the squat allowance which led the arbitrators to find for the charterer.

Double Jeopardy was very convincing as theatre. But as a training aid, it showed what some realistic drama could do in underlining a host of important lessons! ■■

Accommodating the crew

How do you squeeze a few extra containers aboard a ship without extending its width or length, or necessarily piling the stack higher?

It is a difficult question as virtually every square metre of a ship, from the aftermost part of the wide stern to the fore-castle, is already allocated to the stowage of containerised cargo. There is no scope further forward without risking damage from boarding seas, and certainly none aft.

A far eastern shipyard has been attracting some attention with its design for putting extra tiers of boxes under the navigation bridge structure. It seems at first sight a rather clever answer to a problem, with deck space being at such a premium for container-ship deck cargo and the accommodation block, whether it is placed, right forward, on the poop or three quarters forward (as is fashionable with very big ships today) being seen as rather wasted space from the point of revenue earning.

Float-free structure

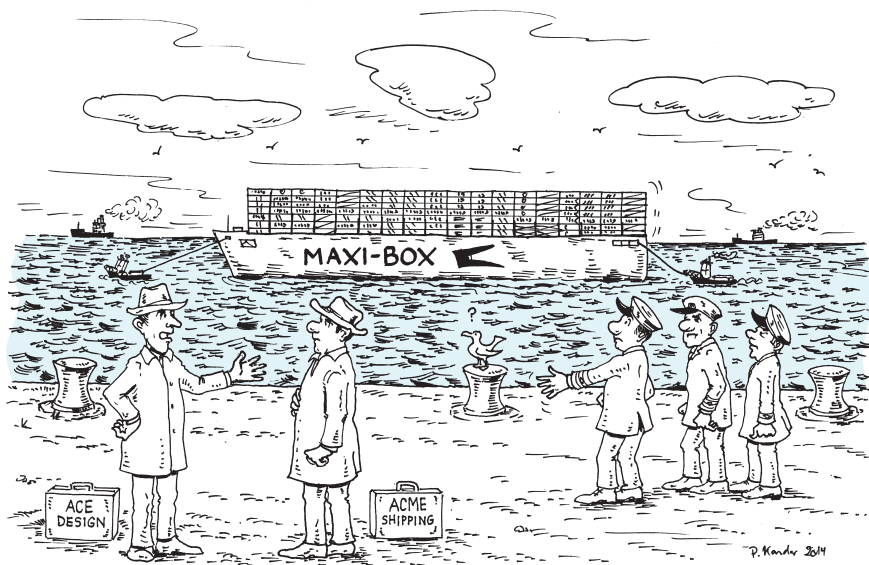
This innovation effectively slides the navigation bridge structure out of the way to enable the boxes to be handled, the “island” being supported on rails over structures

at the ship’s side, which form living quarters. Hydraulic motors would be used to move the bridge structure swiftly, so that the minimum amount of time would be employed for the manoeuvre.

The prototype is yet to be built, but it perhaps demonstrates that no efforts are being spared to improve the productivity of ships in these difficult times. As an additional attraction advertised by the designers, the two side structures are said to be config-

ured to “float free” in the event that the worst happens and the ship sinks!

The designers point to the additional tiers of forty foot boxes that can be accommodated on what would otherwise be unusable space and suggest that such an innovation would soon pay for any additional capital costs. It might however to a useful strategy to ask a representative selection of container-ship seafarers whether they would regard this as an attractive proposition! ■■



“It carries a record payload, but I just wonder whether we might have forgotten something?”

Full agenda for both MEPC and MSC meetings at IMO

Since the report from the International Maritime Organization (IMO) in the last Bulletin, BIMCO has participated in two IMO meetings. The first of these was the 67th Session of the Marine Environment Protection Committee (MEPC 67) held from 13-17 October 2014. The second was the 94th Session of the Maritime Safety Committee (MSC 94) which met from 17-21 November 2014.

Marine Environment Protection Committee

The MEPC is responsible for co-ordinating the IMO's activities on the prevention and control of pollution of the marine environment from ships. The committee has adopted a number of conventions (although some have not yet entered into force).

These include the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter; the International Convention for the Control and Management of Ships' Ballast Water and Sediments; International Convention on Oil Pollution Preparedness, Response and Co-operation systems; the International Convention on the Control of Harmful Anti-fouling Systems on Ships; the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships; and the International Convention for the Prevention of Pollution from Ships (MARPOL), the annexes of which deal with prevention of pollution from oil, chemicals, other harmful substances, garbage, sewage and emissions to the air.

Polar Code – environmental part

The Polar Code contains design, construction, equipment, operational, training, and search and rescue requirements for ships operating in the Arctic and Antarctic waters, with the aim of preventing accidents and pollution, and protecting ships, seafarers and passengers.

MEPC 67 approved the work on Part II of the draft International Code for Ships Operating in Polar Waters (Polar Code) dealing

with pollution prevention measures. The draft Polar Code, consisting of additions to MARPOL Annexes I, II, IV and V and the associated MARPOL amendments to make the relevant parts of the Code mandatory, was also approved. In general, the IMO agreed to extend the stringent requirements in force in the Antarctic area to Arctic waters. Part II of the Polar Code is expected to be adopted at MEPC 68.

Ballast water convention

BIMCO co-sponsored two papers regarding ballast water management for MEPC 67. The first of these raised issues relating to the draft Guidance on stripping operations using eductors and proposed changes to the text in order to ensure effective and pragmatic practical implementation of the Ballast Water Management (BWM) Convention in relation to ballast stripping operations carried out on board ships. The committee agreed that there is no need to develop guidance on stripping operations using eductors as it was not recommended that ballast water sampling be performed during stripping operations.

The second paper regarded measures to be taken to facilitate entry into force of the BWM Convention. The document described serious concerns that the industry has with the implementation of the BWM Convention. The main concerns were: the lack of robustness of the current Guidelines for approval of ballast water management systems (G8), the criteria to be used for sampling and analysis of ballast water during port state control inspections and the subsequent actions that may

be taken should any minor deviation from the strict efficacy standards be indicated. These genuine concerns, which needed to be urgently addressed, had affected the confidence of the shipping industry and had inhibited ratification of the BWM Convention by some governments.

Governments showed significant recognition of shipping industry concerns about the shortcomings of ballast water treatment technology by agreeing to an immediate review of the type approval guideline for ballast water treatment – aimed at making the process more robust.

MEPC also decided that ship owners who have installed treatment systems approved according to the existing guidelines should not be unduly penalised – a decision that needs to be followed by concrete actions by MEPC at the next meeting.

These outcomes followed strong representation from BIMCO and other shipping industry partners to the attending governments on industry concerns that even ballast water treatment systems that are currently type-approved would not meet the standards soon to be required by IMO.

The threshold for bringing the IMO Ballast Water Convention into force is very close. During the meeting, Japan and Turkey ratified the International Convention for the Control and Management of Ships' Ballast Water and Sediments 2004, bringing the number of Contracting States to 43 countries, representing approximately 32.54% of world merchant shipping tonnage, meaning

that only 2.46% remain before the BWM Convention would enter into force.

The following measures were further adopted:

- The Guidelines for Port State Control inspections for compliance with the BWM Convention;
- An MEPC resolution on “Measures to Be Taken to Facilitate Entry into Force of the International Convention for the Control and Management of Ships’ Ballast Water and Sediments, 2004”;
- A work plan for a review of the “Guidelines for Approval of Ballast Water Management Systems (G8)”;
- The setting up of a correspondence group on the review of the G8 was approved. It will report back to MEPC 68. BIMCO will be participating in this correspondence group.

Third IMO GHG Study 2014

The MEPC discussed the final report from the consortia tasked to develop the greenhouse gas (GHG) study update and after some technical discussion, approved the third IMO GHG Study 2014 providing updated estimates for GHG emissions from ships.

The Third IMO GHG Study 2014 estimates that international shipping emitted 796 million tonnes of carbon dioxide (CO₂) in 2012, against 885 million tonnes in 2007. This represented 2.2% of the global emissions of CO₂ in 2012, against 2.8% in 2007. BIMCO is pleased to see a decline in shipping’s share of global CO₂ emissions since 2007.

Energy-efficiency measures for ships

Readers will recall that mandatory measures to address the energy efficiency of international shipping entered into force on 1 January 2013 under Chapter 4 of MARPOL Annex VI. These regulations make mandatory the Energy Efficiency Design Index (EEDI) for new ships, and the Ship Energy Efficiency Management Plan (SEEMP) for all ships.

MEPC considered proposed amendments to the 2013 interim guidelines for determining minimum propulsion power to maintain the manoeuvrability of the ship in adverse weather conditions. In the light of the forthcoming changeover from the two-year phase zero period to phase one,

the guidelines are to ensure that ships will have installed sufficient installed power on-board regardless of the Energy Efficiency Design Index (EEDI) reference level. (The EEDI reference level will be tightened every five years, in 2015, 2020 and 2025 by 10% EEDI value reduction each time).

As ships to be built in phase two (between 2020 and 2025) are about to be commenced, the guidelines had to be amended to cover for phase two ships as well.

Some delegations expressed serious concerns because the installed main engine power of many new ships may be insufficient to fulfil the required minimum power as per the interim guidelines. They therefore suggested the minimum power threshold should be increased by 10%.

BIMCO and other industry associations, as well as the majority of the working group, were not convinced of the necessity for this increase and therefore MEPC 67 is expected to extend Phases 1 and 2 without modification. There are several research projects going which will provide experimental results in 2016 and MEPC will await these results before deciding further on Phase 3.

A correspondence group will review the status of technological developments relevant to implementing Phase 2 of the EEDI regulatory framework. BIMCO will participate in this work.

The MEPC further adopted the 2014 Guidelines on survey and certification of the EEDI, updating the previous version to include, for example, identification of the primary fuel for the calculation of the attained EEDI for ships fitted with dual-fuel engines using LNG and liquid fuel oil.

Data collection system for fuel consumption of ships

A data collection system for fuel consumption of ships was agreed in principle. A correspondence group was established to develop the data collection system further. BIMCO co-sponsored a paper which raised a number of policy questions relating to the development of mandatory operational efficiency standards.

The elements of the data collection system

include: data collection by ships, flag state functions in relation to data collection and establishment of a centralised database by the IMO. A correspondence group will continue this work and report back to MEPC 68.

Fuel oil quality

BIMCO, together with other industry associations, submitted a paper to MEPC 67 expressing concern about fuel oil quality. The document made concrete proposals for means and processes to achieve a more effective quality control of marine fuels prior to delivery to a ship.

Many delegations found fuel oil quality to be a purely commercial issue between the buyer and the supplier of the fuel oil, which should not involve other authorities. Other delegations agreed that the obligation to deliver fuel that meets a certain standard rests with the supplier, who should verify compliance through a quality control mechanism prior to supplying the fuel to ships. MEPC was, however, divided on the question whether guidelines for the control and enforcement of supply of compliant fuel as required by MARPOL Annex VI should be exercised on mandatory or voluntary basis.

A correspondence group, in which BIMCO will participate, was established to develop draft guidance on quality-assurance for fuel oil delivered for use on board ships and to consider the adequacy of the current legal framework in MARPOL Annex VI in relation to fuel oil quality. The group will report to MEPC 68.

Amendments to MARPOL

The MEPC adopted amendments to:

- MARPOL Annex I Regulation 43 concerning special requirements for the use or carriage of oils in the Antarctic area, to prohibit ships from carrying heavy grade oil on board as ballast;
- MARPOL Annex III, concerning the appendix on criteria for the identification of harmful substances in packaged form; and
- MARPOL Annex VI, concerning regulation 2 (Definitions), regulation 13 (Nitrogen Oxides (NOx) and the Supplement to the International Air Pollution Prevention Certificate (IAPP Certificate), in order to include reference to gas as fuel and to gas-fuelled engines.

Maritime Safety Committee

The MSC is the highest technical committee of IMO. It considers any matter concerned with aids to navigation, construction and equipment of vessels, manning from a safety standpoint, rules for the prevention of collisions, handling of dangerous cargoes, maritime security and safety procedures and requirements, marine casualty investigations, salvage and rescue and any other matters directly affecting maritime safety.

The MSC approves and adopts amendments to conventions such as SOLAS.

Polar Code – safety part

MSC 94 adopted the safety part of the Polar Code. A new SOLAS Chapter XIV on “Safety measures for ships operating in Polar Waters” will make the Code mandatory. The content of the Polar Ship Certificate and annexes was the last item to be finalised. The Polar Ship Certificate will be surveyed during the normal mandatory SOLAS surveys.

A few items are still outstanding, one of which being guidance on limitations for operation in ice, which was agreed by adding a text into Part B of Polar Code. IACS had submitted detailed guidance based on the Finnish Swedish Ice Class Rules (FSICRs), IAS – II to ice conditions, setting limits for ice operations dependent on ice class of the ship. This will form the basis of an MSC circular as soon as it has been further developed by a Correspondence Group, in which BIMCO will participate.

The Polar Code will enter into force on 1 July 2016. It will be applicable to all passenger ships and cargo ships above 500 gross tons entering the Polar Areas.

Amendments to SOLAS and other IMO instruments

MSC 94 adopted amendments to a number of conventions and associated instruments, e.g.:

- Chapter VI, Regulation 2 – Cargo information. MSC 94 adopted amendments concerning container weighing, requesting the shipper of a container to ensure that a verified weight is stated in the shipping document. This may be done by weighing the packed container using calibrated and certified equip-



Pilot ladders: MSC decided to issue a circular interpreting SOLAS regulations. Captain Morgan Hoburg, San Francisco Bar Pilots, steps from the pilot boat to the pilot ladder.

ment or by weighing all packages and cargo items, and adding the mass of the empty container to the sum of the single masses.

- Chapter XI-1, new regulation 7. MSC 94 also adopted amendments related to atmosphere testing instrument for enclosed spaces, which now will become mandatory.

Pilot ladders

MSC decided to issue a circular containing an interpretation of SOLAS regulation V/23.3.3.

In order to provide safe and convenient access to and from the ship the circular will address two different and distinct arrangements – when only a pilot ladder is provided, and when a combined “an accommodation ladder used in conjunction with the pilot ladder” is provided.

Pilot ladders have been discussed extensively during a number of MSC sessions and BIMCO is pleased with the agreement

which has been reached. The Secretariat will circulate the Circular as soon as the text is released by IMO.

e-navigation

For BIMCO members, it is expected that e-navigation e.g. will:

- Provide opportunity for new products and solutions based on contemporary technology;
- Provide flexibility with regards to training and rotation, as standardisation will provide more uniform bridge products;
- Simplify reporting and thereby reduce the workload for operations;
- Improve situational awareness for bridge personnel and thereby improve the speed and efficiency of decision making;
- Provide a direction for product development of bridge equipment;

Work has now reached the realisation phase and MSC 94 approved the e-navigation Strategy Implementation Plan (SIP), which is the main result of the work done by the IMO on e-navigation so far.

Together with a number of governments and industry organisations, BIMCO co-sponsored a paper on the future development and implementation of e-navigation. It contained a proposal to ensure that IMO maintains a leading and co-ordinating role for the harmonised implementation and future development of e-navigation over the next five years.

Based on the submission and the following lengthy discussion, there was widespread support for the IMO's ongoing leading role with e-navigation. BIMCO is pleased with this decision and sees it as a sign of the IMO's continued commitment and leadership on e-navigation.

The work of the IMO will continue the work to review the tasks in the SIP and formalise them for the IMO agenda and prepare a prioritized plan and time schedule. A correspondence group will present a report to MSC 95.

Failures in sprinkler systems

Based on a document submitted by the Bahamas regarding failures in sprinkler systems, MSC 94 decided to draft a circular raising awareness of the findings from the Bahamas on automatic sprinkler systems. The issue concerned both passenger and cargo ships.

The MSC Circular will form an interim guidance, based on the Bahamas' testing procedure, of ways to avoid blockage of the internal filters in the sprinkler heads due to mineral deposits as well as corrosion of the internal components of the sprinklers. Such sediments cause seizure when the sprinkler is activated. The BIMCO Secretariat will circulate the MSC Circular as soon as it is released from the IMO Secretariat.

MSC subsequently decided to task the Sub-Committee for Ship Systems and Equipment (SSE) to revise the Guidelines for the maintenance and inspection of fire protection systems and appliances (MSC.1/Circ.1432) during the Sub-Committee on Ship Systems and Equipment (SSE) meeting in the Spring of 2015.

IGF Code

The International Code of Safety for Ships using Gases or Other Low-flashpoint Fuels

(IGF Code) contains, among other things, design instructions for proper placement of fuel tanks, fire safety measures and requirements for extra protection for the engine. The new framework will strengthen safety and many owners will save both time and costs, since individual risk assessments will be easier to prepare.

A working group established by the committee finalised the draft IGF Code with a view for adoption at the next MSC meeting in the Spring of 2015. SOLAS was further amended in order to make the IGF Code mandatory. The committee also adopted training requirements for crew on board ships using fuels with low flash point.

The location criteria for LNG fuel tanks on passenger and cargo ships has been discussed at length, both at MSC level, but also in a number of sub-committees. At this session, MSC had to decide on the key questions related to possible retention of probable tank location alternatives and the tank length limitation in the deterministic criteria. It was decided to retain the probable requirements as an alternative and decouple them from the deterministic requirements by deleting the tank length limitation. The SOLAS amendments and the Code must be adopted at MSC 95 in order to take effect in 2017 and will apply to new ships and new facilities.

Bunker Delivery Note for LNG

MSC discussed the need for developing a bunker delivery note (BDN) for Liquid Natural Gas (LNG), similar to the one used for fuel oil. Although it is widely recognised that LNG has negligible sulphur content there is currently no IMO document or instrument that provides guidance on compliance with MARPOL Annex VI, Regulations 14 and 18. It was agreed to include the new LNG BDN as an annex in the IGF Code together with reference to the sample BDN in the LNG bunkering part of the IGF Code.

This will provide the ship with an easy mechanism to demonstrate compliance with MARPOL Annex VI Regulation 14.

Cyber security

A paper by Canada and the United States suggested that IMO should develop guidelines on cyber security. The guidelines would assist in protecting and enhancing

the resiliency of cyber systems supporting the operations of ports, ships, marine facilities and other elements of the maritime transportation system.

During the long and detailed debate, BIMCO expressed the view that it agreed with the need to have guidance on cyber security. Based on concerns raised by its members, BIMCO has been working on the cyber security issue for some time and is now preparing guidelines, in conjunction with other interested industry partners, in order to address the operational issues that can be used to protect ships and shipping companies.

The committee appreciated and welcomed this industry initiative. BIMCO will continue with the development of industry standards and report back with its findings and suggested guidance to the next MSC meeting.

Maritime security

There was a limited amount of security on the agenda at MSC 94. BIMCO supported the IMO Secretariat submission on Piracy by asking all flag states to recognise the revised guidance on Gulf of Guinea (GoG) provided by the Round Table of international shipping associations and report all incidents of piracy to the Maritime Trade Information Sharing centre (MTISC-GoG) in order to improve reporting statistics.

MSC 94 decided that the correspondence group on Guidance on Implementing National Law in support of the ISPS Code needed further work and at the same time, agreed that in the field of cyber security the shipping industry, after a BIMCO intervention mentioned above, should be allowed to develop its own guidance before any MSC CG is considered.

The discussion on amendments to guidance to Shipping and Flag States on ISO 28007 implementation was very nearly completed and a set of wording was agreed but unfortunately, not before the committee could confirm it in the final report/session. The issue of Floating Armouries was raised by India, who asked for them to be regulated. However, there was no consensus that this was a subject to be addressed by the committee, but one for individual flag states. (AFS) ■

Getting to grips with CSR

Corporate social responsibility (CSR), like it or not, has entered the glossary of maritime industry terminology, with something of a mini-industry growing up around it as companies try and demonstrate their CSR “compliance” to their customers and to the world at large.

One could be cynical about this, except that there is a genuine trend emerging which needs to be practically acknowledged with action rather than mere words.

It is a social trend, visible right across the board, and no sector or industry player can ignore the phenomenon in an era where there is rather more transparency. While shipping might be physically “over the horizon”, its behaviour is increasingly open to examination.

It is not correct to suggest that CSR is entirely new; a sort of all-embracing, warm and cuddly 21st century culture that exudes sustainability from every pore, recognising the pressures upon the planet and publicly demonstrates its concern. If CSR is really a rather more elaborate and all-embracing way of defining ethical behaviour, it is this which has always been practiced by the best shipping companies, which have always done things the right and honest way, although they have maintained these virtues internally and without ceremony and not felt it necessary that they should boast about them.

It might be suggested that the industry needs to celebrate these excellent practitioners rather more, rather than everyone beating themselves up about how “unsustainable” they have been in the past. It is fashionable to proclaim that environmental progress has been solely in response to regulation and the industry has “cleaned itself up”. In reality, the most progress has been made by the most ethically operating companies, who have led the progress against pollution of all kinds and moved swiftly to improve whenever the problem has been recognised. It is the industry, it is worth recalling, that will pay the bills for technical and operational improvement as the demand arises and will continue to do

this in the progress towards more sustainable marine transport.

More than saving the planet

It is a mistake to believe that CSR is mostly about green issues and environmental compliance, something that is often emphasised by the pressure groups which attempt to dictate the agenda. Doing what is right for the planet and in particular the world’s seas and oceans is important, but it is only one dimension of the ethical behaviour to which all should aspire.

It is one of the real concerns among thoughtful industry leaders that while environmental issues have captured the public imagination, are firmly in the forefront of governmental priorities and remain live in the media headlines, other equally important matters are neglected. Activists bemoan the pressures upon our planet with regular forecast of doom not unlike those offered in the past by Malthus and Hobbes, but ignore the capacity of trade and technology to remedy many of these ills.

They ignore the importance of good governance, which is still unavailable to a substantial part of the world’s population, in countries where gross inequalities and corruption are endemic and ambitions of improvement suppressed. Also ignored, (although it might be seen as self-serving to point it out), is the importance of modern and efficient shipping as the most effective vehicle for feeding and fuelling the world; one of the major tools of sustainable growth and progress.

“The public awareness about shipping is being promoted by its increasingly public nature” observed Clay Maitland in London recently. The Marshall Islands Register Managing Partner was chairing Capital Link’s 4th Annual Shipping and Offshore CSR Forum, an event which, by its grow-

ing popularity, would seem to illustrate the need to “see and be seen” as a supporter of social responsibility. CSR, he suggested, was a type of risk management that companies ignored at their peril, some going out of business because of their inability to properly react to an accident.

Corporate behaviour and the importance of employees

An area that is increasingly being seen as important is the loyalty of employees, who need to relate to their employers’ social values. They can be vital in preventing accidents, but also can be devastating as “whistleblowers” if this loyalty is not present. Mr. Maitland spoke of the “politics of resentment” which can fuel disloyalty, exacerbated by problems like the disparity of executive compensation, or the failure of the company to pay what might be described as its social dues. He points out that there are still many companies which fail to support maritime charities and operate as “free riders”, giving entirely the wrong impression to their employees and, when it becomes known, to the wider public. So CSR needs to be more than an outward demonstration of virtue, but requires to be recognised internally.

CSR, it was pointed out, was much more than compliance with regulations. There was a need, said David Peel of Rightship, to be above the level prescribed by the rules. It was doing what was within the bounds of possibility – practical assistance for local fishermen whose activities had been interrupted by the construction of a container terminal, was an illustration. A growth in transparency was enabling shipping’s customers to differentiate between those going that extra mile, and those who would not.

The greater intensity of scrutiny, by port state control or by various auditing processes, ensured that the places to hide were



Left to right: Benoit Loicq of ECSA, John Stawpert of ICS, Gudrun Janssens of OVAM, Dr. Nikos Mikelis of GMS and moderator Michael Grey.

increasingly being limited. But, it was vehemently pointed out, the industry itself needed to be more closely involved in the formulation of regulations, ensuring their practicality, rather than having impractical measures imposed upon them by well-meaning bodies.

Technology and CSR

The role of technology in promoting greater sustainability and the avoidance of waste was a recurrent theme at this forum. The role of the classification society in “bridging the valley of death” between impractical and practical improvements was emphasised by Dr. Abdul Rahim, who outlined a number of innovations designed to design smarter, greener ships in a future “no carbon” world.

The quest for greater fuel efficiency, techniques such as routeing, speed monitoring and the monitoring of emission controls were all areas where technological innovation was helping greater sustainability. The importance of data, which would enable the operators to react quickly to optimise performance was seen as vital by Danaos Corporation’s technical director Dimitris Vastarouchas, while Phil Atkinson of the Graig Group pointed out something of the owner’s dilemma in “testing” the difference between theory and practice of the claims of sustainability and fuel saving, using trials data which remained somewhat primitive. It was difficult for the industry, it was said, to gain confidence in “emergent technology” and to examine properly the claims for fuel saving for technologies and devices now being made available. This is an important point to be made, at a time when there is a demand for efficiency and sustainability alike and no shortage of clever systems, designs and devices promising much from

which operators can make their choice. How many of them really work and might the advantages of one product cancel out those provided by another?

Other dilemmas presented themselves. A short debate on the problems being faced by owners wishing to recycle ships ethically showed the illogicalities of EU directorates effectively punishing sub-continental yards trying hard to improve themselves, maintaining the nonsenses of the Basel Convention and prejudicing the coming into force of the Hong Kong Convention. Dr. Nikos Mikelis (who has written extensively on recycling matters in this journal) issued an invitation to European sceptics to visit these yards and see the improvement for themselves. It is both a serious and an ethical problem, represented by owners who want to recycle ships in a sustainable fashion, but find themselves confused by the political rhetoric of governments, the bullying tactics of activists and the practical realities of recycling yard capacity.

CSR was also about fair treatment for seafarers. Intermanager’s Kuba Szymanski spoke of the tyranny of inspections, the lack of respect shown to seafarers and the emerging skill shortage. There was, it was suggested, too much emphasis on “compliance” in a “tick-box regime” rather than the encouragement of practical seamanship.

But ethical behaviour was good for business in so many different ways. It guided the behaviour of the responsible charterer, differentiating the best performers from the rest – “brand value” it is termed, quantifying and benchmarking sustainability. It is being increasingly recognised as important by all customers in every sector and the shipping industry is no different.



Michael Grey

In a word...

So, what have we learned about CSR? It is primarily about ethical behaviour, towards people and the planet. It is something that employees can relate to, promoting loyalty and encouraging retention. It is about practical engagement and not merely public relations, sincerity rather than pretentious statements and tick-boxes. Despite the scope of our global industry, we are constantly surprised by the relative compactness of our shipping community, in which word travels fast and reputations are all-important. It is about balance, in every respect and usefully – it can be good for business. And it is clearly not something that is going to go away. ■■

Editor’s Note: Michael Grey is BIMCO’s Correspondent in London. He is a former Editor of Lloyd’s List and a regular contributor to many maritime publications.

Building the “Internet of Things” at sea

Today, ship’s systems and maritime operations still rely heavily on manual processes and fragmented data systems. There are some promising new technologies which may be able to improve this state of affairs once implemented and adopted.

The Internet of Things (IoT) and the closely-related Edge Computing may be one of the keys to enable cost-effective e-navigation and sea traffic management solutions for improving safety, preserving the environment and more efficient maritime operations.

The Internet of Things refers to uniquely identifiable objects and their virtual representation in an internet-like structure. More objects are becoming embedded with sensors and gaining the ability to communicate. The resulting information networks promises to create new business models, improve processes and reduce costs and risks.

In the IoT, sensors and actuators embedded in physical objects are linked through wired and wireless networks, often using the same Internet Protocol (IP) that connects the Internet. When objects can both sense the environment and communicate, they become tools for understanding complexity and responding to it swiftly. They can work without human intervention.

The widespread adoption of the IoT will take time but it is speeded up by wireless technologies, open source software, standardisation, data collection, cloud and edge computing. A first step towards the IoT is converting networks on proprietary protocols to IP-based networks. When objects can sense and communicate, it changes how and where decisions are made and who makes them. When an object can represent itself digitally, it can be controlled and/or monitored from anywhere. This connectivity means more data, gathered from more places, with more ways to increase efficiency, improve safety, and situational awareness.

The network plays a critical role as the

connectivity platform for control and operational systems, sensors, devices. It must provide a secure infrastructure with open standards and seamless integrated architecture.

There are two groups of IoT applications currently emerging:

1. Information and Analysis:

- Tracking behaviour
- Enhanced situational awareness
- Sensor-driven decision analytics.

2. Automation and Control:

- Process optimisation
- Optimised resource consumption
- Complex autonomous systems.

Welcome to “Fog” Computing: Extending the Cloud to the Edge

Growing amounts of data pose a challenge for the maritime industry. Big data exchange between ships and shore will need fast and cheap internet connection, which still creates a significant challenge in the maritime sector. This situation calls for a move from centralised to dispersed architectures with distributed computing architecture and numerous nodes, with the IoT as its backbone.

There is a need for applications running closer to the data sources and analysing data in real-time, thus avoiding continuous costly and unreliable data transfer to and from the remote cloud. The latest advancements in the cloud computing area are providing a possible solution. Closely resembling the concepts of cloud computing, the “Fog” aims to take services, workloads, applications and large amounts of data and deliver it all to the edge of the network.

Edge or “Fog” computing is pushing the frontier of computing applications, data, and services away from centralised nodes to the logical extremes (edge) of a network. It enables analytics and knowledge-generation close to the sensors, i.e. close to the source of data, thus making it possible to process data directly on board a ship in real time, without the expensive and slow connection to the external cloud. This means greater security and more control over own, potentially sensitive and competitive, data for ship owners, operators and other maritime stakeholders.

Enabling the Internet of Things at sea in maritime operations on a large scale will require a unified approach to software system architecture, harmonising the collection of smart, sensor-enabled devices and the networks, servers, and services that interact with them in order to form a seamlessly interoperable “maritime ecosystem”. This can be achieved by the application and utilisation of cloud and Edge computing solutions based on an open architecture approach.

An open architecture approach can be viewed here as the confluence of business and technical practices yielding modular and interoperable systems that adhere to open standards with published interfaces. This approach significantly increases opportunities for innovation and competition, enables reuse of components, facilitates rapid technology insertion, and reduces maintenance constraints. A key concept enabling the IoT in the maritime transport domain is to provide a means of data and information exchange between all actors in maritime operations who could benefit from that exchange. Such an innovation platform, utilising the networking tasks and based on an open service-oriented architec-

ture, would be able to provide remote data acquisition and information exchange, such as vessel route data exchange and broadcasting to other parties, as well as many other potential innovative services.

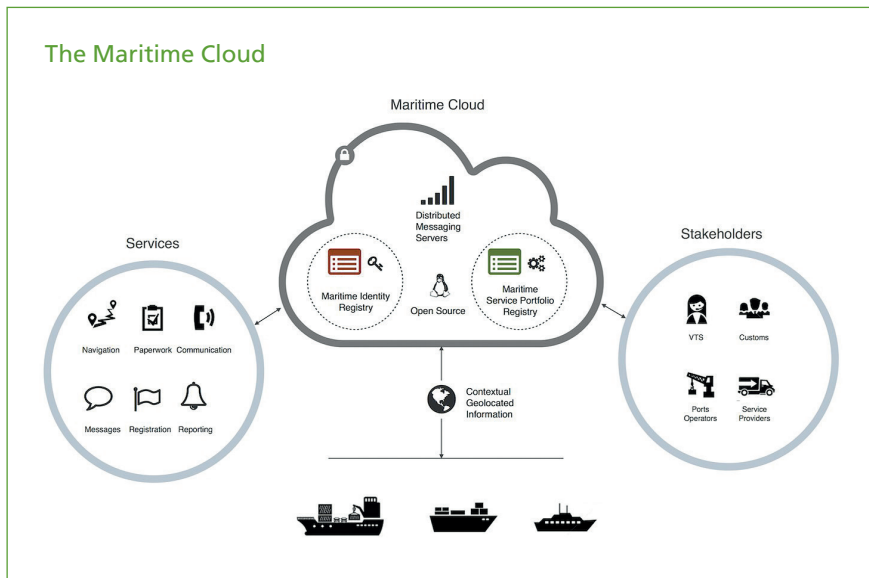
With open source software taking the IoT world by storm, creating the Internet of Things at sea becomes a reality. Today, we are facing a growing need for a System-Wide Information Management (SeaSWIM) enabling information exchange between various stakeholders across the maritime industry and contributing to the optimisation of maritime operations.

With hundreds of sensors and devices already present on board ships there is a low technological barrier for the introduction of the IoT in the maritime industry with an “ocean” of data to be “dived” into and analysed. Currently, a vast majority of the data collected by various on board sensors including, for example, echo-sounders, radars, wind or fuel sensors, is basically “wasted” as it is not analysed in real time to provide valuable information needed to optimise the operations, nor is it shared with other sea space users be it within one fleet or external stakeholders.

Taking advantage of the great potential of the IoT means making the most of systems already in place, adding other intelligent sensors and mobile devices, and connecting them all together into an intelligent system-of-systems. We will then be able to harness this “ocean” of data and share information between vessels, ports, and shore-based sea traffic coordination centres. Providing improved situational awareness for ship crews and land based sea traffic coordination centres such as VTS will contribute to increased safety and efficiency of maritime operations.

Although Fog or Edge computing is a new terminology, this technology already has a place within the world of the modern data centre and the cloud. Edge computing has many advantages:

1. Improved security. With Edge services, we are able to enhance the cloud experience by isolating user data that needs to “live” on the edge, thus improving security. Bringing data and services



close to the end-user further improves security and solves latency concerns as well as data access. Instead of housing information at data centre sites far from the end-point, the Fog aims to place the data close to the end-user.

2. Creating dense geographical distribution. Fog computing extends direct cloud services by creating an edge network which sits at numerous points. This way, big data and analytics can be done faster with better results. These edge systems are created in such a way that real-time data analytics can become a reality on a truly massive scale.
3. Edge application services significantly decrease the data volume that must be moved, the consequent traffic, and the distance the data must go, thereby reducing transmission costs, shrinking latency, and improving quality of service.
4. Edge computing eliminates, or at least de-emphasises, the core computing environment, limiting or removing a major bottleneck and a potential point of failure.
5. Security is also improved as encrypted data moves further in, toward the network core. As it approaches the enterprise, the data is checked as it passes through protected firewalls and other security points, where viruses, compromised data, and active hackers can be caught early on.
6. Finally, the ability to “virtualise” (i.e. logically group CPU capabilities on an as-needed, real-time basis) extends scalability.

IoT@Sea becoming a reality
Route Exchange – an example of Sea

Traffic Management tools based on open standards and open source software

One of the main goals of the MONALISA 2.0 project, co-financed by the European Commission (<http://monalisaproject.eu>), is to achieve a full and seamless inter-operability of Sea Traffic Management systems between ship-to-ship and ship-to-shore, as well as between the various shore-based Sea Traffic Coordination Centres in a multi-vendor environment. A key factor in Sea Traffic Management, as well as in e-Navigation, is the focus on the end user. Therefore, all STM systems shall be designed with the end user (i.e. mariner, ship owner/operator) in mind to create user-friendly and cost effective solutions. Focusing on user-driven innovation is most important in achieving this goal.

A key concept in the MONALISA 2.0 project and Sea Traffic Management is sea Route Exchange (REX). REX will realise improvements in safety, environment and efficiency. Today, only ships’ crew know the details of their individual routes but are unable to share them with other maritime space users in order to communicate their intentions. Being able to communicate these intentions by sharing and exchanging route details will help crews plan ahead, prevent incidents and thus avoid dangerous situations.

Studies have shown (source: SSPA: Vessel traffic in Kattegat – monalisaproject.eu) that sea routes can be shortened by up to 12% in coastal waters. The potential improvements are huge, even if just a fraction of this potential is realised. In the Baltic Sea region alone, a 2% reduction in total routes length means 200,000 tons of bunker oil saved, 600,000 tons of CO₂ emissions, and USD 25 million in fuel cost savings

annually. By multiplying these figures by a factor of 10, we arrive at pan-European scale of this impact. Global figures will therefore speak for themselves, with approx. 100,000 registered commercial vessels and 40 million pleasure craft.

In a strongly cost-driven sector such as the maritime one, achieving interoperability between navigational systems, purposeful usage and unleashing the full potential of Sea Traffic Management (STM) sharing of ships' sensor data can be realised by utilising cost-effective solutions based on open source software and open architecture with the help of open standards. The first pioneering STM REX solutions have been developed based on a route exchange protocol, an open standard as well as on open source software and MARSSA open architecture. REX and other pioneering STM solutions are currently being demonstrated and tested in selected maritime locations, with the Oslo Fjord area setting the course for the maritime industry.

The early demonstration of STM solutions, SeaSWIM, the IoT at Sea and Edge Computing in the Oslo Fjord are based on an innovation platform "Open Bridge Platform" (OBP) utilising open source software. The key concept of OBP is to provide means of information exchange between all those entities (including but not limited to vessels and VTS) that are authorised and who can benefit from that information exchange. OBP's main goal is to be a data/information interchange platform that would also provide means of checking consistency of that data near the on board ship's sensors. In early Sea Traffic Management demonstrations all networking tasks have been delegated to the "Maritime Cloud", another open source project, spearheaded by the Danish Maritime Administration, and concentrate in OBP on remote data acquisition and interchange including such services as ship route data exchange and broadcasting to other sea space users.

The "Maritime Cloud" is defined by the Danish Maritime Administration as: "A communication framework enabling efficient, secure, reliable and seamless electronic information exchange between all authorized maritime stakeholders across available communication systems".

The Maritime Cloud is not a "storage cloud" containing all information about every ship or cargo, nor is it referring to "cloud computing" as such. The Maritime Cloud is the realisation of the defined communication strategy for e-navigation as described in the strategy for e-navigation in the report of the International Maritime Organization IMO MSC85 (MSC 85-26-Add.1): A communication infrastructure providing authorised seamless information transfer on board ships, between ships, between ship and shore and between shore authorities and other parties with many related benefits.

The Maritime Cloud consists of standards, infrastructure and service reference implementations, that together with governance, enable the efficient exchange of information between qualified maritime parties via interoperable information services, utilising highly automated interfaces to different communication options, enhancing general communications related to berth-to-berth navigation and related services for safety and security at sea and protection of the marine environment. A communication infrastructure provides an open source framework that allows for an unlimited number of services to be easily accessible for users, through dynamically updated digital publications. The overall aim of these services is to improve the accessibility and scope of the information available.

A possible OBP scenario involves a "hybrid" cloud computing implementation with an IoT Edge computing paradigm and a private cloud on board a vessel, as well as a secure connection to the remote public/community cloud, whenever desired, using a publish-subscribe model. Data gathered by one OBP instance from its sensors and devices is registered in the Maritime Cloud as services providing certain information. Then this information can be queried for a specific geographical area (based for example on geographical co-ordinates and maximum radius) thus effectively used by all other units connected to the "cloud".

Such an implementation could provide a common standard platform for Sea Traffic Management and e-navigation services. Based on open source software, it is a future-proof solution that can benefit from community improvements on a continu-



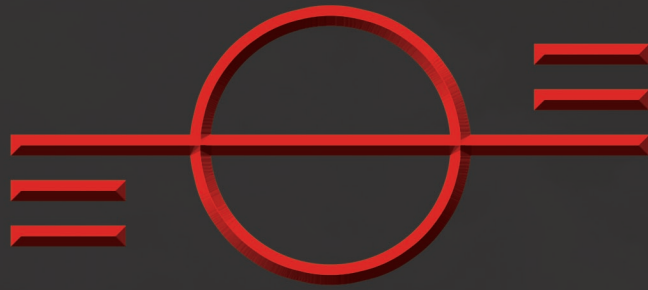
Krystyna Wojnarowicz

ous basis. Open solutions make it also cost effective and thus adoptable.

Given the proven advantages and experiences from other transport related domains such as automotive, aviation, and naval operations, open source systems and technologies could help lead the way to reducing total cost of ownership for maritime communication without jeopardising the proprietary, sensitive or competitive data, and go a long way towards increased safety at sea. ■■

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Krystyna holds a Master's Degree in Information Technologies Management, specialised in Software Process Improvement. She is also a commercial mariner, educated at Chalmers University of Technology, Sweden, specialised in fast vessels handling. Prior to founding MARSEC she worked for the Carnegie Mellon's Software Engineering Institute - Europe.



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e-navigation: what is it, where did it come from, and what does it do?

For over nine years, there have been discussions at the International Maritime Organization (IMO) and in other specialised maritime forums on something called e-navigation. This article explains what e-navigation is, and what it will mean to everyone in the maritime community.

The last few decades have seen huge developments in technology within navigation and communication systems. Sophisticated and advanced technology developed rapidly.

Mariners had never had more technological support systems and therefore there was a need to co-ordinate systems and to make more use of harmonised standards. Although ships carried Global Satellite Navigation Systems (GNSS) and would soon all have reliable Electronic Chart Displays and

Information Systems (ECDIS), their use on board was not fully integrated and harmonised with other existing systems and those of other ships and systems ashore.

At the same time, it was recognised that the human element, including training, competency, language skills, workload and motivation, were essential in today's world. Administrative burdens, information overload and ergonomics are prominent concerns. A clear need was identified for the application of good ergonomic principles in

a well-structured human machine interface as part of the e-navigation strategy.

This resulted in a paper submitted to the IMO Maritime Safety Committee's 81st session in 1985 from Japan, Marshall Islands, The Netherlands, Norway, Singapore, the United Kingdom and the United States. This paper pointed out that there was a clear need to equip the Master of a vessel and those responsible for the safety of shipping ashore, with modern proven tools to make marine navigation and communications more reliable and thereby reduce errors – especially those with a potential for loss of life, injury, environmental damage and undue commercial costs.

The paper also noted that more substantial and widespread benefits for states, ship owners and seafarers could be expected to accrue from the increased safety at sea, which was identified as the core objective of e-navigation.

It was pointed out that accidents related to navigation continue to occur, despite the development and availability of a number of ship- and shore-based technologies that improve situational awareness and decision-making. These included the Automatic Identification System (AIS), Electronic Chart Display and Information System (ECDIS), Integrated Bridge Systems/Integrated Navigation Systems (IBS/INS), Automatic Radar Plotting Aids (ARPA), radio navigation, Long Range Identification and Tracking (LRIT) systems, Vessel Traffic Services (VTS) and the Global Maritime Distress Safety System (GMDSS).





A modern bridge system. (Photo: Kongsberg Maritime)

It was therefore proposed to add a new item on e-navigation to the work programme of the Sub-Committee on Safety of Navigation (NAV) and also to that on Radiocommunications and Search and Rescue (COMSAR).

The aim was to develop a strategic vision for the utilisation of existing and new navigational tools, in particular electronic tools, in a holistic and systematic manner. e-navigation ought thereby to help reduce navigational accidents, errors and failures by developing standards for an accurate and cost-effective system that would make a major contribution to the IMO's agenda of safe, secure and efficient shipping on clean oceans. MSC also included the STW Sub-Committee in the work, so as to ensure that any training issues would be given full attention.

Working groups in three sub-committees (NAV, COMSAR and STW) and an inter-sessional correspondence group, have subsequently developed a Strategy Implementation Plan (SIP). Member states of IMO and a number of inter-governmental and non-governmental organisations have contributed to the work, including the International Hydrographic Organization (IHO), Comité International Radio-Maritime (CIRM) and the International Association

of Lighthouse Authorities (IALA), International Chamber of Shipping (ICS), BIMCO and the International Electrotechnical Commission (IEC).

User needs

The first stage of the e-navigation strategy was to capture fully the "user needs", as it was decided that user needs rather than technology was the correct way forward. The Secretary-General of IMO stated in an article that rather than new equipment being the answer, it should be possible for the existing equipment to be used in a more holistic way. A number of Non-Government Organizations (NGOs), with consultative status to the IMO, made significant contributions to the user need capture.

The "user needs" process soon showed that what users wanted at sea was better and more reliable navigational equipment which gave the mariner confidence, as well as more harmonised controls between manufacturers in order to reduce training requirements and the ability to move from ship to ship without familiarisation training. The user needs also showed that a lot of the equipment on board was not integrated and for example, Maritime Safety Information (MSI) received by communications equipment had to be hand transferred to electronic charts.

Also identified was the need for better reporting of the navigational status between ships, and between ship and shore, and *vice versa*. The need to pass ship information to the port in a harmonised way and to avoid the multiple forms typically used which are different in every country was also pointed out.

Furthermore, it was recognised that there is a need to identify shore-based functions and services. At present, there are many different types of services in most given situations or locations, such as ports, coastal and high seas. Harmonising and standardising these services results in Maritime Service Portfolios (MSPs). The MSP concept shows what portfolio of services a port can offer the ship. These might include VTS services, pilotage services, tug services, telemedical services, ice services, search and rescue services and others. Not all ports will need to, or be able to, deliver all services.

Definitions

At MSC 85, taking into account input from the industry and other relevant organisations (e.g., IALA and IHO), the committee approved the strategy for the development and implementation of e-navigation and developed the following definition of e-navigation:

“E-navigation is the harmonized collection, integration, exchange, presentation and analysis of marine information on board and ashore by electronic means to enhance berth to berth navigation and related services for safety and security at sea and protection of the marine environment.”

Correspondence group

The IMO entrusted Norway and the Norwegian Coastal Administration with the task of co-ordinating the work of developing a proposal for an e-navigation strategy implementation plan.

Three sub-committees within the IMO – NAV, COMSAR and STW – established working groups on e-navigation. Each group was chaired by the Norwegian Coastal Administration. Also, a correspondence group overseen by the Norwegian Coastal Administration had an ongoing role in gathering input from national maritime administrations to proposals and decisions related to the process of establishing an e-navigation Strategy Implementation Plan.

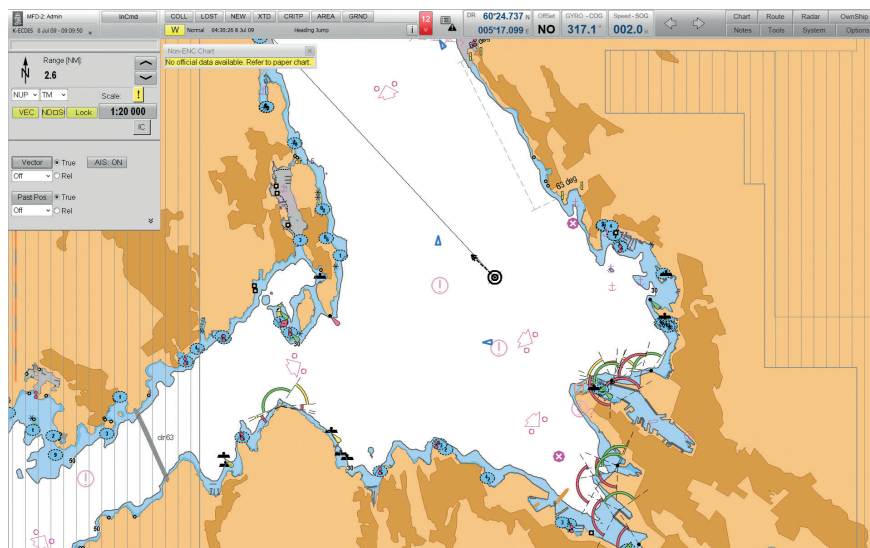
The work on an e-navigation Strategy Implementation Plan was broken down into several distinct phases:

1. Assessing the user needs;
2. Constructing an open, modular and scalable architecture and introducing a common standard on electronic information exchange, IHO S-100 standard; and
3. Completing a series of studies: a gap analysis, cost-benefit analysis and a risk analysis.

These three phases took a number of years to complete. However, it was necessary to fully evaluate the user needs, to ensure they were not just “wishes” but were achievable within the framework of e-navigation, to understand the gaps between the user need and what was available and relate them to current and new technology and systems, as well as completing a cost benefit and risk analysis to ensure that the strategy was on the right track.

Strategy Implementation Plan

With these phases complete, five prioritised and agreed solutions were proposed to provide the basis for a Strategy Implementation Plan. These are:



K-Bridge ECDIS screen dump. (Photo: Kongsberg Maritime)

- S1: Improved, harmonised and user-friendly bridge design;
- S2: Means for standardised and automated reporting;
- S3: Improved reliability, resilience and integrity of bridge equipment and navigation information;
- S4: Integration and presentation of available information in graphical displays received via communications equipment; and
- S9: Improved communication of VTS Service Portfolio.

S1, S3 and S4 address the equipment and its use on the ship, while S2 and S9 address improved communications between ships and ship-to-shore and shore-to-ship.

During the development of the SIP, a number of tasks were identified as necessary to continue the further development and implementation of e-navigation. Some of these tasks may require further consideration and investigation before a final decision is taken on the best way forward and subsequent tasks.

The IMO’s new combined navigation communications and search and rescue sub-committee (NCSR 1) completed the SIP in July 2014 and forwarded it to the MSC in November 2014 for approval.

Core elements of the plan

The final e-Navigation Strategy Implementation Plan contains eight core elements, defined thus:

1. Identification of tasks needed to be completed to satisfy the Solutions;

2. A phasing of the tasks and a high level roadmap;
3. A list of Maritime Service Portfolios that need to be developed;
4. A list of key enablers of e-navigation;
5. The continual assessment of user needs;
6. Proposals for a systematic assessment of how new technology can best meet defined and evolving user needs in the longer term;
7. Proposals on public relations and promotion of the e-navigation concept to key stakeholder groups;
8. Identification of potential sources of funding for development and implementation, particularly for developing regions and countries and of actions to secure that funding.

Guidelines

During the development of the SIP and based on the gap analysis, it became obvious that three new IMO Guidelines were important and should be developed immediately, these being Guidelines on Human Centered Design (HCD) for e-navigation, Guidelines on Usability Testing, Evaluation and Assessment (U-TEA) for e-navigation systems and Guidelines for Software Quality Assurance (SQA) in e-navigation.

The combination of the five e-navigation solutions and the three guidelines proposes an e-navigation implementation that facilitates a holistic approach to the interaction between shipboard and shore-based users. NCSR 1 has proposed to merge these three guidelines into one IMO Guideline.

The way forward

The e-navigation strategy is owned by IMO

and the next stage is implementation as defined in the SIP. This stage will need IMO member states to start work on tasks in the SIP to ensure that a fully harmonised implementation is carried out in order to achieve the five agreed e-navigation solutions.

There are already many local solutions being developed, but without IMO reviewing and monitoring these activities, it is possible that different systems might be developed in different parts of the world.

Benefits for users and stakeholders

On a global level, e-navigation will:

- Standardise bridge design, which globally enhances the opportunity to work cross-border, improves efficiency in training and reduces material cost. Similarities between nations and vessels would also increase efficiency and improve safety;
- Reduce barriers of trade through reduction of local solutions and bureaucracy; and
- Reduce the risk of accidents and incidents.

For coastal states, flag states and port states e-navigation will:

- Improve efficiency in training, certification and supervision;
- Improve situational awareness by providing easy access to standard and reliable information;
- Improve efficiency in supervision, coordination, control, as well as co-ordination and information; and
- Reduce the risk of accidents and incidents through efficient use of VTS services.

For branches, organisations and industry e-navigation would:

- Provide flexibility with regards to training and rotation as standardisation would lead to a more efficient market for standardised bridge products;
- Simplify reporting and thereby reduce the workload for operations;
- Improve safety for own fleet;
- Improve situational awareness for bridge personnel and thereby improve the speed and efficiency of decision making;
- Increase navigational safety in VTS regulated areas;

- Provide a direction for product development to a wide market; and
- Provide opportunity for new products and solutions;

For shipborne users e-navigation would:

- Simplify daily work and training;
- Improve human-machine interface, usability, familiarity and navigational safety;
- Improve time-saving and efficiency on board by providing easier access to information, thereby improving the response time/problem solving abilities of bridge personnel;
- Improve navigational safety by reducing the administrative workload;
- Improve confidence in the use of navigational equipment;
- Enhance the quality, accuracy and reliability of information, thereby improving situational awareness and navigational safety;
- Provide easy access to need-to-know information in a user-friendly single window;
- Improve familiarity with systems through standardisation;
- Improve service and safety in VTS-regulated areas by providing easy access to available services and warnings;
- Reduce bureaucracy and thereby support more efficient use of bridge resources; and
- Reduce the risk of accidents;

Parallel efforts in e-navigation

Along with work taking place under the aegis of the IMO, a number of IMO member states and international organisations such as the EU are working to advance e-navigation and topics related to e-navigation.

Conclusion

e-navigation is a strategy developed by the IMO to bring about increased safety and security of navigation in commercial shipping. It encompasses increased efficiency and better protection of the environment through better organisation and harmonisation of data on ships and on shore, and better data exchange and communication between ships, and between ship and shore. It is also concerned with well-designed, more user-centred and integrated equipment on board ships, with improved software quality. ■■



John Erik Hagen

Editor's Note: John Erik Hagen is Regional Director at the Norwegian Coastal Administration. His career began in the Norwegian Navy, where he attended officer training school and later the Norwegian Defence College.

At this time he also took a University Degree in Law, Social Science, Economics and Business Administration. He served nearly ten years as a naval officer.

Subsequent to his naval career, he spent several years in managerial positions in the offshore industry and transportation services. He has been acting Director General for the Norwegian Coastal Administration on behalf of the Royal Norwegian Ministry of Fisheries and Coastal Affairs.

Today, he serves in many national and international boards and advisory boards. He is Co-ordinator of the IMO Correspondence Group on e-navigation.

Until recently, he was also the Norwegian delegation's Chairman of the Working Group established by the Royal Norwegian Ministry of Fisheries and Coastal Affairs and the Ministry of Transport of the Russian Federation for co-operation between the Russian Federation and Norway on maritime safety in the Barents area.

Should ship owners be looking to the skies?

Aviation and shipping share many features but can either learn any useful lessons from the other?

In 2014 aviation celebrated the 100th anniversary of the first scheduled commercial flight when a flying boat carried the first fare-paying passenger on a 23-minute journey in Florida.

Compared with shipping's much longer history, a hundred years is, of course, a trifle but in that relatively short time aviation has expanded into a global industry which carries more than 3 billion passengers a year on 100,000 flights every day. It employs 2.4 million people at an annual cost of USD 140 billion, according to the trade body, the International Air Transport Association (IATA).

Global networks

Like shipping, aviation is keen to present itself as a vital component of the global economy, "providing connectivity to global networks" that bring local and global economic benefits, IATA claims. But, like its sister industry, aviation is constrained in

how far it can, in fact, go in being a truly global industry and faces similar problems as its sea-going counterpart.

As air travel began to increase (displacing passenger ships on long oceanic routes) in the first few decades after World War Two, the system of regulating international air traffic through a series of bilateral agreements between countries (the Chicago Convention of 1944) came under strain. The result was a gradual process of liberalisation under "open skies" agreements like that between the US and European Union (EU), allowing one country's airlines to carry passengers on internal flights within another.

Low cost carriers

Deregulation, however, also paved the way for low-cost carriers (LCCs) which now account for 30% of the European market. The established or so-called legacy airlines now face the threat of the LCCs making the leap from their bastion of short-haul flights

to long-haul on routes across the Atlantic and Pacific. Two new airlines, one in Iceland, the other in Norway, are trying to make that leap by offering low-cost flights across the Atlantic.

While the threat from LCCs may be overstated (some point to the fact Ryanair has – at least so far – balked at the opportunity), the challenge from the expanding Gulf airlines such as Emirates and Etihad is seen as real and growing.

Intense competition among themselves and from the LCCs and Gulf carriers has seen the legacy carriers adopt a number of defensive measures. Open-skies agreements, for example, have enabled them to form three global alliances – Oneworld, Skyteam and Star – which now account for 60% of global capacity compared with LCCs' 25%.

These alliances, which permit airlines to offer passengers more connections and bigger "frequent flyer" discounts than they could individually, remain, however, under close supervision by regulators alert to any signs of collusion on pricing and capacity, for example.

The anti-trust immunity (ATI) aviation alliances enjoy has also been extended to joint-ventures between airlines on specific routes, mostly across the Atlantic and Pacific. These can only gain approval – at least in the US – if they are "metal-neutral": in other words, each airline must be indifferent to whose aircraft is used to carry passengers. Critics, however, claim alliance and joint ventures, despite the regulatory supervision, are granted too much ATI, allowing them to dominate some routes and charge higher fares,

Alliances and metal-neutral joint-ventures are, the airlines involved argue, their solutions to the problem posed by anti-trust restrictions on full mergers and protection-



Deregulation also paved the way for low-cost carriers. (Photo: Ruthann)

ist bans (in the US and EU, for example) on foreign ownership of airlines.

A patchwork of competition regulations

These will be familiar problems to ship owners, particularly those involved in container shipping, as they too seek greater efficiencies and hence profitability through capacity-sharing. Both aviation and shipping must deal with a patchwork of competition regulations, with no guarantee that regulators in different regions will reach the same decision, as evidenced in the recent rejection by China of the P3 vessel-sharing alliance of three container lines, despite its prior approval by the US.

Both aviation and shipping are also in a seemingly constant battle to control their costs, with labour and fuel the two largest operational expenses in both industries. Prior to the steep decline in the price of crude oil, aviation in 2014 was forecast by IATA to spend USD 212 billion on jet fuel, an amount representing 30% of total operating expenses.

New more fuel-efficient aircraft are being delivered while aviation aims for “carbon-neutral growth” by 2020. (In 2012 it was responsible for 2% of global emissions of carbon dioxide.) Competition from LCCs with non-unionised and cheaper workforces has also forced legacy airlines to cut their own labour costs in moves often strongly resisted by unions representing pilots and cabin crew. This perhaps is the key area where shipping has an advantage over aviation; the ability to source labour from a number of labour-supply countries when the need to reduce crewing costs arises. This advantage may be gradually eroded as new regulations such as the Maritime Labour Convention take effect, but both aviation and shipping are exploring the possibilities of fully automated operations without the need for pilots or seafarers.



The crewless ship concept is also being explored by the EU through its MUNIN project. (Photo: Fraunhofer CML)

In 2013 a successful test flight in the UK of a Jetstream turboprop airliner converted into an Uninhabited Aerial Vehicle (UAV) took place. The flight was believed to be the first to use an autonomous weather avoidance system, as well as “sense and avoid” technology and an autonomous emergency landing system.

Crewless vessels

Engineering firm Rolls Royce, which has a 50% market share of engines for wide-bodied aircraft, meanwhile has publicly called for a debate on crewless ships. The concept is also being explored by the EU through its MUNIN project. While results of a prototype test involving three connected shiphandling simulators in October 2014, showed, the project team said, “a lot of work still lies ahead”, they will be used to develop further the MUNIN concept of an unmanned bulk carrier.

While the technology may be capable in both cases of enabling unmanned vehicles, the two industries will be no doubt keenly watching how the other fares in seeking to resolve the thornier issues of legality and public and political reactions.

Both, of course, will have to argue convincingly that safety will not be compromised by unmanned operations. The expansion of aviation over the 100 years of its existence has been helped by the minimisation of accidents and could claim to have the better safety record of the two, although a direct

comparison is neither possible nor particularly helpful. (The mysterious disappearance of an aeroplane in 2014 with 239 people on board remains the odd exception.)

Safety innovations

Shipping has, however, over the years adapted a number of safety innovations from aviation that have arguably helped the former improve its own record. The “black box” carried by airliners as a recoverable record of operational data and cockpit communications found its way eventually into shipping as the Voyage Data Recorder, while aviation’s method of accident investigation has been adapted by a number of countries for maritime purposes.

Training for ship’s officers also now includes Bridge Resource Management, originally developed for airline pilots as Cockpit Resource Management and focused on inter-pilot communications, leadership and decision-making in an attempt to minimise the role of human error in accidents.

The differences between the two industries may outweigh the similarities, but the common ground may be enough to justify ship owners indulging in some plane-spotting. ■

Editor’s Note: Andrew Guest is a freelance journalist.

Treating ballast water in an in-journey system

From the outset, the Danish company Bawat A/S opted for a ballast water treatment system in which the ballast water management is carried out at sea, exploiting on board waste energy and thereby avoiding disruption to regular cargo and ballast operations. This pioneering system is about to be launched in the marketplace.

Back in 2011, it was obvious that a huge market would open up for ballast water management systems (BWMS) on vessels in the not-so-distant future. The International Maritime Organization (IMO) had adopted a convention for the control of ships' ballast water and in a matter of a few years, a sufficient number of countries representing enough tonnage could be expected to ratify the convention, thus enabling the new regulation to enter into force.

In order to help meet this immense future demand, a group of professionals in Denmark joined forces in trying to configure a smarter BWMS which was not depending

on water quality or the vessel's operating routines. They brought different skills and experiences to the table. Spearheading the group was Jan S. Hummer, a chemical engineer and entrepreneur.

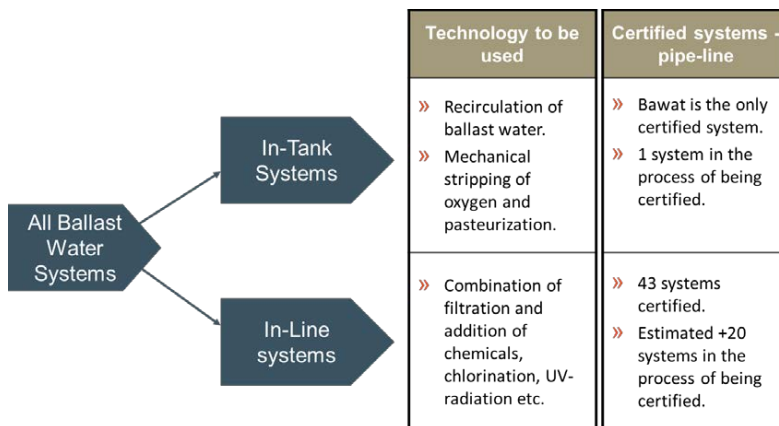
Drawing on his background in the oil industry, Mr. Hummer had previously and successfully designed an automated cleaning system for "difficult-to-clean" crude oil tanks, which he later modified into a rotary jet mixer for use in different kinds of bioreactors for the chemical, food and pharmaceutical industries.

The group also included Ole Lütchke Christensen, M.Sc., Ph.D., with more than 20 years of industrial experience, having

served as Technical Manager, Vice President for Sales, and CEO, followed by many years in private equity. Jan Hummer and Ole Lütchke Christensen also brought Klaus Nyborg on board. Klaus is currently interim CEO and Vice Chairman of the shipping company Dampskibsselskabet Norden A/S. He has held a similar top position at Pacific Basin Shipping Ltd. in Hong Kong.

At the time, a number of so-called in-line systems were marketed worldwide. In these systems, ballast water is treated alongside while the vessel is conducting ballast and cargo operations. Why not find a smarter, more efficient way to treat the ballast water? Why not do it at sea, aiming for the very best? Such was the thinking.

Alternative technology



The Bawat solution is based upon an "in-tank and in-voyage" concept – contrary to "in-line" systems



A list of requirements

Pretty soon the group settled on certain requirements: The treatment of ballast water should not impede the normal operations of the ship. From this, the concept of developing a BWMS that was in-tank and in-voyage arose. This is the feature which, more than any other, sets what came to be our technology apart from the rest. It was also a must that the system would be easy to maintain and independent of water qualities, such as salinity, temperature and turbidity. We would base our system on known maritime components, eliminating the need for introduction of new components built for the purpose. Furthermore, it should be environmentally friendly, which excluded the use of chemicals in the treatment process, a preferred method used in numerous in-line systems. After all, protecting the environment was the whole point of the IMO convention! And last, but not least, the ballast water management system should have a price tag that was competitive.

In February 2013, when I was brought in as CEO of Bawat A/S – the name of the company established – Jan Hummer became Technology Advisor, Ole Lütchke Christensen was named CTO, and Klaus Nyborg became Chairman of the Board.

A new combination of tools

The treatment of ballast water is primarily directed at preventing the spread of non-native marine species in lakes, rivers and coastal waters. Unlike other forms of marine pollution, the impacts of invasive marine species are most often irreversible. Conventional in-line treatment methods are generally based on electrochlorination, UV radiation, ozone, and a number of combinations of technologies such as cavitation, ultrasonic, filtration, and addition of various biocides.

Our group tapped into know-how from the process industry. This led to the conclusion that filtration should be avoided, as filters – despite flushing – would clog sooner or later, which in turn would reduce the treatment capacity and prolong the process. We briefly evaluated UV radiation and dropped this option, as it would not work appropriately in conjunction with the other methods we had in mind. And, as using chemicals



The Bawat system was tested on board the gas carrier M/S Henrietta Kosan.

was a no-go, we had excluded two conventional tools at this point.

It became clear to us that we had to come up with a new combination of interventions. Finally, we opted for two distinct process principles in a recirculation loop, namely deoxygenation and pasteurisation. The deoxygenation process effectively eradicates the zooplankton, and the pasteurisation process reduces the phytoplankton and the bacteria concentrations to well below the threshold set by the IMO.

How it's configured and operated

The technology itself is very simple. Ballast water is circulated in a circuit from just below the water surface in the ballast water tank, then treated and reintroduced into the ballast tank through jet nozzles close to the

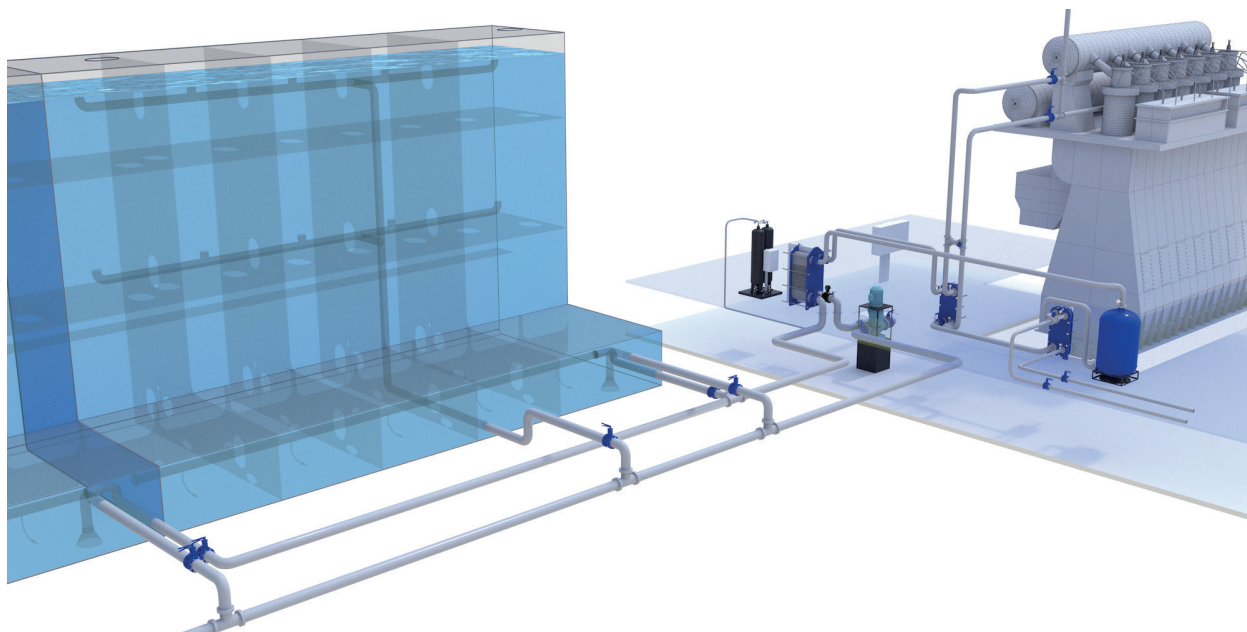
tank bottom. As an added benefit, the deoxygenation of the ballast water leads to a virtual elimination in tank corrosion.

Is that all? That is the initial reaction I often get when I present the configuration of the Bawat system. The system consists of a Control and Monitoring Unit (CMU), a circulation pump, heat exchangers that can draw on any available excess heat from the ship's main engine and a small nitrogen plant.

Once in voyage, the ballast water is circulated from the top of the ballast water tank. The water is pasteurised by heating it up to 72 degrees Celsius and holding it at this temperature for a certain time. Before being returned to the bottom of the ballast tank, nitrogen is injected into the ballast water. On average, 5-7 runs through the



The land-based biological efficacy tests were delayed due to harsh Winter weather.



On many vessels, waste or excess energy is available, and these excess heat sources are utilised in Bawat's BWMS.

system are needed depending on a number of variables, including the type of vessel, the design of the tanks, and the size of the pump.

A rigorous testing regime

Even if our BWMS might appear simple, our development of the system has been a three year journey, passing through three phases of tests in order to verify treatment efficiency and, later on, meet the requirements for approval in line with the IMO convention. The first stage was a feasibility study performed in late 2011 and early 2012. The biological tests were carried out on a 1:10 scale model located at The Danish Technical University. We were primarily focusing on the deoxygenation. The tests confirmed that our concept did indeed work, and that it could serve as a scale-up to maritime dimensions. We acquired a deep understanding of process parameters, for instance the temperature requirements during the pasteurisation process, the holding time, and the variables related to the deoxygenation using injection of nitrogen. In this phase, we also worked on the mathematical modelling tools that were of use to us later on.

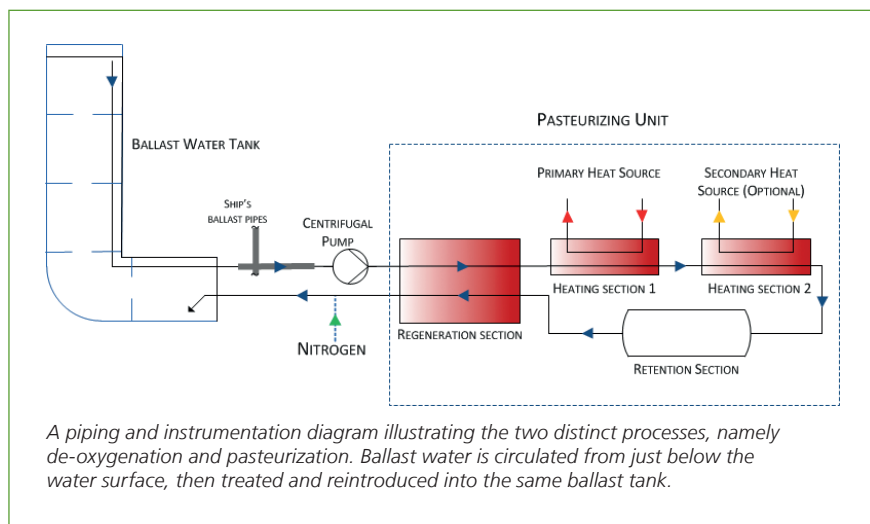
Then came the initial shipboard tests which we carried out on a 6,844 DWT oil and chemical tanker, *Bro Gothenburg*, courtesy of Maersk Tankers, using one of the vessel's ballast water tanks with a capacity of 270 cubic metres. We analysed the flow

regime and the deoxygenation parameters. These tests were successfully completed in June 2012.

The third phase was the most comprehensive and time consuming, consisting of parallel land-based biological efficacy tests and shipboard tests in accordance with the IMO guidelines and procedures. We carried out our land-based tests from March 2013 onward at The Danish Hydraulic Institute's facility in Hundested, Denmark. According to IMO G8 Guidelines, a successful treatment of ballast water must be shown in at least two salinities, with five tests in each salinity, in order for the system to be type approved.

The shipboard tests took place on *M/S Henrietta Kosan*, a 7,465 DWT gas tanker from Lauritzen Kosan lines. The system was installed in April 2013 while the vessel was docked in Shanghai. Three consecutive approved tests must be conducted – with a span of six months between the first and the last test – and this we did. This third phase was completed in March 2014.

The development of the system and the extensive testing would not have been possible without the kind financial assistance from a number of institutions. The Danish Maritime Fund believed in our ideas from the very start and provided support for the feasibility study and for land-based biological



A piping and instrumentation diagram illustrating the two distinct processes, namely de-oxygenation and pasteurization. Ballast water is circulated from just below the water surface, then treated and reintroduced into the same ballast tank.



Bawat

Ballast Water Treatment

cal efficacy tests. The Market Development Fund, a Danish Business Authority affiliate, supported the shipboard tests. The Nature Agency, a Danish Ministry of Environment organization, offered grants at different stages, including the 1:10 scale model tests and later in tank tests.

Challenges? Oh yes!

Even though the testing procedure went smoothly in the main, there were challenges along the way in the adaptation of methods. During the initial tank tests we had to move from facilities in Ishøj, southwest of Copenhagen, to the Danish Technical University. That was a minor nuisance.

Slightly more worrisome were the problems we encountered during the land-based biological efficacy tests. First of all, we had to rebuild the tank configuration, as the tank at the Danish Hydraulic Institute was designed for in-line systems only. And then, during tests, we were forced to put everything on hold for more than four months in the Winter of 2013-2014 due to harsh weather conditions. The pipes and tanks froze.

Furthermore, in the Spring of 2013, a few of the biological efficacy tests failed marginally by exceeding the set criteria. As it turned out, the deviation could not be ascribed to a defect in the management system. The deviation was a result of a leaking bypass valve; an experience I believe we share with a number of colleagues in the industry.

The first of a kind

We always believed in our technology, and on 31 October 2014, the viability of our idea was officially confirmed. On this date, the certificate for the IMO type approval of the Bawat BWMS was issued by The Danish Maritime Authority and The Nature Agency of the Danish Ministry of Environment, based on verification of all required tests by the classification society DNV-GL. We are proud to say that the Bawat BWMS is the first in-tank and in-voyage ballast

water treatment system to obtain IMO type approval based on the strictest criteria.

The introduction of our BWMS to the marketplace is very timely indeed. The new technology is made available as the commercial fleet worldwide is faced with the mandatory installation and commissioning of ballast water treatment equipment. The IMO convention, adopted in 2004, is about to enter into force. More than the 30 countries have ratified the convention nationally, and with the recent national parliamentary approval by Japan and Turkey, countries comprising 32.5% of the world's tonnage, against the 35% required, have ratified the convention.

At the same time, the US Coast Guard has introduced similar requirements concerning ballast water treatment for vessels entering US ports. We are currently filing for the US Coast Guard's so-called Alternate Management System registration, and we are planning for US Coast Guard Type Approval as well. The US regulation became effective as of December 2013.

A dawning market

Our expectation is that ballast water management is a market that will explode in the years to come. The change has just begun. Until now, only 2,000-2,500 ships have had ballast water management systems installed. It is estimated that 60,000 current vessels will have to have a BWMS installed by 2023. The Bawat BWMS can easily be scaled up and it is well suited to most vessels, including the tankers and bulk carriers comprising more than a third of the world's current fleet. Add to this ships planned for construction.

We think the Bawat BWMS is competitive on many fronts. First and foremost, given that it is an in-tank and in-voyage system, there is no interference with normal ship routines during cargo and ballasting operations. Our system is tested in temperatures ranging from 3-40 degrees Celsius, a rather unusually wide span. It incorporates stan-



Kim Diederichsen

dard marine pumps, heat exchangers and other known components used on ships for more than 50 years. There are no risks of bottlenecks in production and delivery, and installation costs are small. The management of the system is cost-effective as it is exploiting on board waste energy, fully or partially. The carbon footprint is limited. Furthermore, the operation of the system is easy. There is hardly any maintenance. The system protects against corrosion on the tanks holding ballast water, prolonging their durability.

We see a lot of positive value propositions for ship owners and managers in our system. We feel ready to enter the market with the Bawat BWMS. Already, a number of potential customers have expressed an interest in our technology. ■■

Editor's note: Kim Diederichsen joined the Danish company Bawat AIS as its CEO in February 2013, further bolstering the shipping experience of the team.

Kim is a Master Mariner and holds a diploma in management. He spent a number of years in the Danish commercial fleet, succeeded by a stint with Semco Maritime AIS, a Danish project engineering company in the energy sector. From 2007 and until he moved to his present position with Bawat AIS, Kim was Vice President and, eventually, Senior Vice President with the Norwegian company Remora, specializing in offshore loading technologies and services. He was based in Houston, Texas.

The Panamanian flag registry – worldwide leader

This is the latest in a series of articles focusing on worldwide flag states with representation at the International Maritime Organization.

The new Administration of the Panamanian Ship Registry has recognised the need to maintain its position as a flag of excellence. Therefore, technical services, as well as its economically attractive benefits, have been reinforced, based on the understanding that quality and the timely provision of services are the best business cards possible.

Since 1917, Panama has registered vessels in a publicly open registry and for the last ten years has been the leader in ship registration, with 8,469 vessels representing 19% of the global fleet in terms of tonnage (source: Clarkson, Research Services, World Fleet Monitor, October 2014). The Panamanian Registry has the largest bulk carrier fleet, both in numerical and tonnage terms, with 118.1 million GT of bulk carrier tonnage, equivalent to 32.76% of the global bulker fleet. This situation primarily reflects the fact that Panama represents a third of the bulker fleet in terms of GT. (See Figure 1)

Most of Panama’s success is due to the

robust regulatory protection for ship owners and mortgagors, along with competitive offers of low tax registrations for offshore jurisdictions, 24/7 technical services provided by the headquarters in Panama and supporting SEGUMAR offices operating in Piraeus, Tokyo, Seoul, New York, Busan, Singapore and ones soon to open in Imabari and Istanbul.

The Administration

The Panamanian Merchant Marine Administration is organised entirely under the Directorate General of Merchant Marine (DGMM). The Directorate is one of four operational Directorates of the Panama Maritime Authority (AMP). The mission of the AMP is to:

“Provide services and manage maritime and logistics activities of added value to the cargo with efficiency and effectiveness, covered by a policy of State and a legal framework that promotes and guarantees free trade, legal safety, a competitive market structure, growth and sustainable development, through the synergy of the maritime and

logistics competences favouring the permanent development with a maximum socio-economic benefit for Panamanians.”

Since Panama is a public registry, the government has concentrated all maritime affairs through this entity. In this way, the national maritime strategy is efficiently structured and this includes the registration of any vessel dedicated to navigation in international or internal waters and any subject related to seafarers.

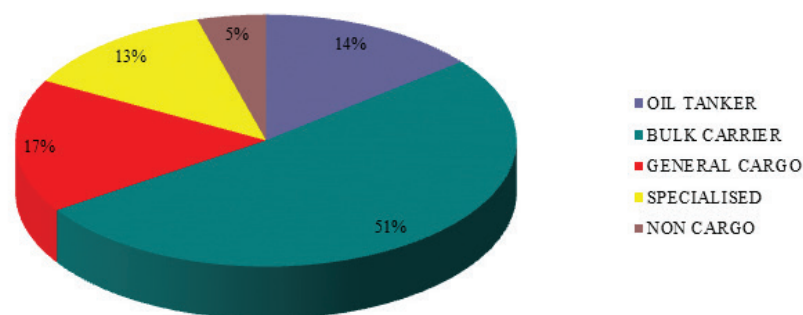
The DGMM is well known as the Panama Ship Registry and it is in charge of the receipt of all documents, requests and queries related to the Panamanian merchant marine fleet.

Vessel registration process

The process for registering a vessel under the Panamanian flag is simple and fast. The legal requirements for the enrolment of any kind of international merchant vessel can basically be divided into two phases. The first involves the issuance of a provisional Certificate of Registry (i.e. Provisional Navigation Patente) with a validity of six months. This is issued on the submission of a copy of the Safety Management Certificate issued by the vessel’s previous flag (in the case of a newbuilding, this requirement does not apply) and the payment of the appropriate governmental fee, which is based on the type of vessel and its tonnage.

During this six month period, the interested parties must meet other mandatory requirements, such as filing the title of ownership, the Safety Management Certificate and the International Tonnage Certificate 1969, both issued by a Recognized Organization on behalf of the Panamanian Government. A Deletion Certificate from the previous flag should be duly legalised as well. Once the parties have provided all

Figure 1: Panama Current Fleet (m GT) (October 2014)



Source: Clarkson Research Services, World Fleet Monitor.

the required documentation through a Panamanian lawyer, the registry will issue the Permanent Certificate of Registry (i.e. Statutory Navigation Patente) which is valid for five years, and this is the second phase of the process.

It is important to mention that the first phase of the enrolment can be done through any of the 64 Panamanian Consulates duly authorised by the Merchant Marine using the electronic platform entitled Public Key Infrastructure (PKI). These consulates are situated in the most convenient countries.

Incentives for the Panamanian merchant marine fleet

Panama likes to distinguish itself through constant innovation in the services it provides. To this end, the first step of the Head of the Registry was to grant new incentives aiming at increasing the tonnage of the fleet, and attracting newbuildings in order to decrease the age of the fleet.

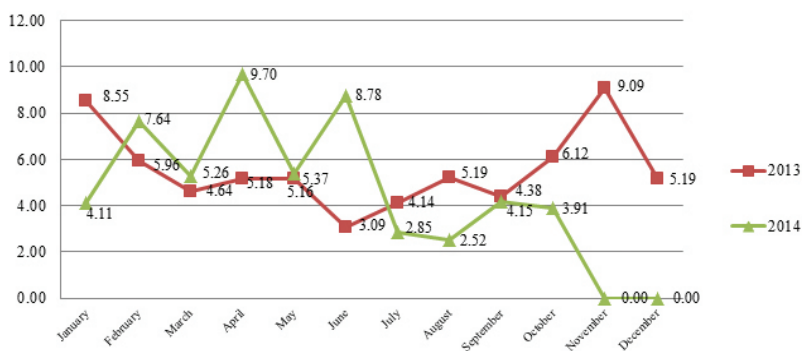
To help in this aim, Panama has kept the discounts policy of the previous Administration (i.e. loyalty discounts, non-detention for consecutive 24 months in Port State Control Inspection) and has granted a new Resolution which offers 100% discounts on almost all governmental fees (except the Annual Tonnage Taxes) for those vessels and Mobile Offshore Drilling Units (MODUs) with more than 10,000 RGT that have left the registry and now want to return. For more information on this, see Merchant Marine Circular No. 298, providing charts and details, which can be found at www.segumar.com

With more than 90 years' experience in the registration field, Panama understands the needs of the private sector. In this respect, the registry accommodates special registrations for cases of lay-up and bareboat charterer in/out. The first case was created taking into account the economic crisis that the maritime sector faced from 2008 and onwards; the second takes into consideration that the maritime sector responds to a commercial strategy in the same way as any others sector.

The performance of the flag

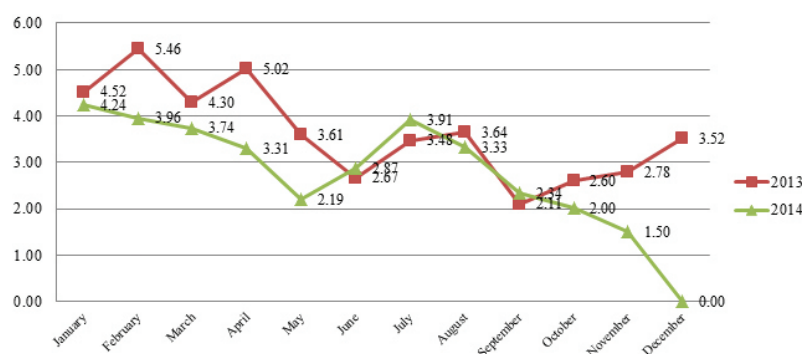
Panama is on the White List of both the Paris and Tokyo MoUs on Port State Con-

Figure 2: Percentage of Panamanian vessels detained by the Paris MoU (November 2014)



Source: Records of the Department of Navigation and Maritime Safety of the Directorate General of Merchant Marine of the Panama Maritime Authority.

Figure 3: Percentage of Panamanian vessels detained by the Tokyo MoU (November 2014)



Source: Records of the Department of Navigation and Maritime Safety of the Directorate General of Merchant Marine of the Panama Maritime Authority.

trol. This has contributed to showing the registry as a suitable option in which to enrol newbuildings. Thus, there is no doubt that Panama is improving its technical quality and reducing detentions and sub-standard vessels (see Figures 2 and 3).

It is important to mention that since 1979, Panama has been part of the Council of the International Maritime Organization (IMO). Later in 2003, with the entry into force of 1993 Amendments of the Constitutive Convention of the organisation, Panama was elected a Category A member of the council. Every two years, Panama occupies this important place in the world among the selected group of states with a considerable interest in providing maritime services internationally.

Moreover, the registry has been recently re-certified with ISO 9001: 2008 by Lloyd's Register Quality Assurance and during

2015, Panama expects to be subjected to the IMO's voluntary audit. This is evidence, if any was needed, that the administration is focused on continuous improvement in order to provide the best service for its users.

Implementation of Maritime Labour Convention, 2006

Panama has been a member of the Maritime Labour Organization since 1919, taking up the challenge to ratify and enforce the different conventions that regulate labour activities on board ships.

On 6 January 2009, the Panamanian Registry became the fourth country to ratify the Maritime Labour Convention (MLC), 2006, which offers seafarers decent working and living conditions on board ships flying the Panamanian flag.

With the ratification of Panama, which back then counted for 21.7% of the world's

gross tonnage, one of the three conditions was met for the aforementioned convention to enter into force. From that moment, the Panamanian Maritime Authority began consultation and information activities focusing on training the technical personnel responsible to carry out surveys of Flag and Port State Control.

By now, the majority of international shipping companies have chosen to register their ships in Panama.

International challenges facing Panama

Some of the challenges that the Panama Registry is facing are: (i) maintaining its position as the leading shipping registry, (ii) increasing the number of ships and tonnage by 10% according to the total number of ships in the world, (iii) capturing “young” vessels within their first five years of construction in order to maintain the fleet, with a tendency to decrease the number of ships older than 20 years and raise levels of security, both of human life and in terms of pollution.

In general and for the better and efficient functioning of the merchant fleet, the following steps are recommended: checking the legal basis by which the register is established as well as its other auxiliary branches; looking at the structural performance (pyramidal and/or vertical?). Also, continuous improvements should be made in technological support as the set of tools that supports the Registration of Ships (including IT tools, the system for automation of ship registration and the issuance of seafarers’ licenses, among others).

Furthermore, Panama is open to reviewing the possibility of approving equivalences for equipment or alternative designs based on the SOLAS and MARPOL Convention exemptions, as appropriate. This aims at providing support to all vessels bringing innovation to the industry such as ecoships, for example.

The best advertising that Panama has is provided by satisfied users who trust the registry’s commitment to them, not only in the global perspective, but also regarding confidence and reciprocity. ■■



Editor's Note: Jorge Barakat Pitty is Panama Maritime Authority Administrator with the rank of Maritime Affairs Minister. He holds a degree in Law and Political Science from the University of Panama. As well as possessing a Masters in Negotiation, Mediation and Arbitration in the Latin American University of Science and Technology and a Postgraduate Diploma in Alternative Dispute Resolution Methods, he is currently pursuing a Masters in Maritime Litigation, with the emphasis on International Maritime Law.

He is a Professor at the International Maritime University of Panama and the Universidad del Istmo, teaching International Maritime Conventions and International Maritime Law. Within the public sector, he has worked in the Maritime Court of Panama from 1999-2003 and was Deputy Administrator of the Panama Maritime Authority from 2009-2011.

In the private sector he has held various positions, such as Legal Assistant in the Litigation Maritime Area, Advisor ad honorem on Legal and Consular Affairs at the Consulate of Panama in Ottawa, Canada, and is a founder member of the law firm Barakat - Pitti & Associates.

Among the associations to which Barakat Pitty belongs are the Panamanian Maritime Law Association, where he served as Commissioner on the Amendments to the Maritime Code 2006-2008, and the National Bar Association, acting as Delegate of the Commission on Maritime Law. He is also member of the Iberoamerican Institute of Maritime Law.

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Anticipating accidents waiting to happen

The UK Club's new self-assessment scheme is designed to control the risk of accidents.

When experienced seafarers walk around a ship, how good are they at spotting hazards? These are the “threats” which could cause an incident and which ultimately could lead to an insurance claim. If they are seen, and recognised, and something done about them, this represents more than a saving in money and time – the fact that this incident has been anticipated and headed off before it could happen, could have saved lives and limbs and the environment. That is truly a worthwhile saving.

Could seafarers be rather better at this important “pre-emptive” role? What if they were given some assistance in recognising threats and hazards in the shape of a “prompt”, which would make them rather better at assessing risk? Some assistance, moreover, that is based on the reality of previous claims, which show precisely where these have been encountered over the years and can be used to inform those operating ships today.

The bowtie approach

Since 2011, the UK P&I Club has been using a claims-based, risk-based system that has used the accumulated statistical data held within the club to help members reduce their claims, by targeting those areas which experience has shown has given rise to these claims.

The methodology, which is proven and practical, uses the “bowtie” approach where a threat – something that if not controlled could cause a P&I incident – a hazard, is controlled by suitable precautions which reduce the possibility of that threat causing an incident, leading to a claim – the consequence. Thus the controls are in two categories – those that prevent the incident and those which mitigate the consequences, should it take place.

An example might be the threat of wet damage to cargo, which is an area that can generate very heavy claims. Controls preventing this might be the close inspection of cargo equipment and maintenance of hatches etc., along with pre-loading checks to tanktops, manholes, bilge wells, and seals. But should there be an incident, the consequences might be mitigated by having in place a good incident reporting and communication procedure, along with physical evidence relating to the incident.

Working collaboratively makes a difference

Risk-based inspection has a number of advantages in that it involves everyone from those “at the sharp end” aboard the vessels; the claims handlers who investigate and manage problems and claims, the underwriters who assess and rate the financial risks, the loss prevention team who try and reduce the risks and the risk assessors, who are the link between the ship and shore. All of these people working collaboratively, it has been found, really makes a difference.

The system provides a practical structure, with its own disciplined approach, learning from the past data and benchmarking, which rates individual ships or members against a club average for the particular risks. It also enables efforts to be focused on those claims which cost the most money, drilling down on the real causes of claims and using resources in a sensible and targeted fashion. It is proactive in that it uses the lessons from the past – something in the region of 12,000 major claims provide the data – to identify hazards before they manifest themselves, and identify areas for improvement. Since it was introduced, it has been shown a most effective system and has been popular both aboard ship and ashore, with positive results.

The Club has been employing a risk-based inspection system, in which the club's own team of inspectors have been assessing ships, employing the wealth of statistical claims data which has guided them to potential hazards aboard the vessels. The next phase makes it possible for members to undertake self-assessment, without the attendance of a Club inspector, with all the necessary data being provided to assist in the process.



Simple procedure

Under the new system, the assessor, who may be a superintendent, or appointed crew member, will be guided through a simple procedure to identify the threats in the various categories and which could cause a P&I incident and measure the effectiveness of the controls that are in place aboard a ship. A simple scoring system is used with booklets providing a practical guide to the process. Altogether, the toolkit identifies 75 threats which have the potential to develop into an incident, broken down into 450 areas of risk and control.

The Personal Injury booklet, which applies to all types of ships and offers a simple example, considers under “Threats” mooring, enclosed space entry, rotating machinery, slips, trips and falls, working with portable power tools, working with chemicals/paints/cargo(liquid), working overside or at heights, working with electrical systems, hot work in general, galley activities, steam and hot liquid systems, hot and cold surfaces, lifting/moving/handling heavy equipment, heavy weather working, fire on board, lifeboat launching, security of port, vessel security plan, trading area and attacks on crew.

In each of these categories of personal injury threat, the list of controls serves as a useful prompt to enable the assessor to complete the score for each category. Taking, for instance, the “Hot Work” threat from the Personal Injury booklet, the assessor, after examining the controls in place aboard the ship, is asked to score the effectiveness of screened areas, the procedures for inspection and planned maintenance, approval system, checks on adjacent areas, the fire watch, trade competency of personnel, permit to work and whether toolbox talks are undertaken. The scores rank the controls on a scale of one to five, to identify areas that should be addressed.

The scores from all the appropriate booklets

THREAT: HOT WORK - GENERAL

CONTROLS:

Screened areas provided inside engine room workshop

- Yes/No

Inspection and planned maintenance

- Machinery and equipment in all areas is logged into an inspection and planned maintenance system on board
- Flashback arrestors fitted to O₂/Acetylene cylinders as appropriate and in workshop outlets
- Adequate for the task

Hot work outside engine room subject to specific approval

- Procedure in place for authorisation of burning, cutting and welding outside the engine room workshop area of the vessel

All adjacent areas checked for combustible materials and found safe

- Item should be contained in the checklist and permit to work system
- Checks must be physically made

Fire watch in place for all hot work

- Item should be contained in the checklist and permit to work system

Trade competency of personnel to perform required duties

- Do all personnel have required certification for the jobs they do, are these certificates valid
- Training checks, HR and ship follow up on joining, full familiarisation and training on board the vessel as required for tasks to be performed

Permit to work including appropriate checklist completion prior to job commencement

- Permits to work including lock-out/tag-out procedures in place for maintenance
- Checklists completed as appropriate
- Job safety analysis or hazard analysis carried out as required
- Risk assessment made as required

Toolbox talks and work planning meetings

- Are these pre-work meetings held on board

- They should include, as far as practical to do so, the following:
 - Risk assessment of operation to include the plan to be discussed and evaluated with the team members
 - Safety matters, to include:
 - Discuss the job plan overall
 - What is the job, and procedure to follow
 - Who will do what
 - Discuss the safety rules for the area of work to be done
 - What could go wrong
 - What are the main hazards
 - Assess the risks and how do you eliminate them
 - Get all to participate to create ownership of safety in the job to be done and full safety awareness
 - Ensure as far as possible all personnel understand the safety rules for the job to be done
 - Remind all of the STOP procedure if the job changes (ie weather hazards, additional ropes required, winch problems, minor and major accidents should occur)

SCORE

Threat: Hot work - general

Screened areas provided	
Inspection and planned maintenance	
Hot work outside engine room subject to approval	
Adjacent areas checked for combustible materials	
Fire watch in place	
Trade competency of personnel	
Permit to work	
Toolbox talks	
COMMENTS	

Hot work can present a whole range of hazards – the range of controls cover most eventualities.

are then submitted to the Club, which will analyse the results and provide a risk assessment report. This will include an overall risk percentage which will provide a benchmark that will give the member a clear indication of where his ship sits against the Club average. The Club will then provide detailed and tailored claims prevention guidance and will advise the owner on how to address the assessment findings.

Honesty and frankness

Clearly, the whole exercise will depend upon honesty and frankness among those conducting the assessment, there being no benefit whatsoever in pretending that the ship is better than it really is! Any marked differences between the assessed scores and the claims record of the ship will of course become apparent. Owners, moreover, who provide regular and accurate self-assessments may find that they require fewer mandatory surveys, provided there is little difference between assessed scores and those of the Club.

Initially the Club will provide self-assessment facilities for up to 20 members, although it is expected that more will be

added as the system beds in. The scheme provides self-assessment kits for cargo, pollution, personal injury, collision and third party property claims.

Self-assessment is designed not to be an unduly burdensome procedure, but will hopefully educate ships crews on how they can identify and mitigate developing risks in the same way that a loss prevention expert would. The trials in which the self-assessment system has been employed have shown very positive results, with ships crews showing enthusiasm for the procedure. Loss Prevention Director Karl Lumbers suggests that the practical and simple system will encourage crew members to take more pride in their professionalism and their ships. ■■

Editor's Note: Michael Grey is BIMCO's Correspondent in London. He is a former Editor of Lloyd's List and a regular contributor to many maritime publications.

Powerline Communications: the maritime network solution

Over the past 100 years, world trade has grown in scale and scope, putting a burden of responsibility in servicing that demand onto the shipping industry. The evolution of novel cargo handling methods and the lack of any credible alternative has only served to increase the reliance.

Combine this with a growing market, not least from the ever expanding global population, and it's easy to see why the shipping industry has had to come up with ways and means of servicing demand. To that end newer, more efficient and capable fleets have been designed and built that are quicker, safer and more eco-friendly. These vessels are revolutionising sea-borne cargo transportation.

With increased demand comes a need to ensure all aspects of operations run smoothly, efficiently and correctly. This has resulted in a greater dependency on Information Technology and maritime network infrastructure.

Historically and by its own admission, the shipping industry has lagged behind other industries in embracing technology, Indus-

try analysts suggest that the Global shipping container market alone spends over USD 100 billion on operations, with 20% of that being spent on managing empty cargo, you can see how inefficiencies can affect the bottom line. If you combine that with the avalanche of new International Maritime Organization (IMO) and Maritime Labour Convention rules with which the industry are having to comply, then suddenly the requirement for accurate information in terms of Ship Management becomes a need rather than a desire, not just in terms of emissions and environmental impact, but also in terms of security and welfare of employees and crew.

This challenge is one that is faced not only by newbuild vessels but also the enormous pre-existent global fleet that will require some degree of retrofitting to keep up.

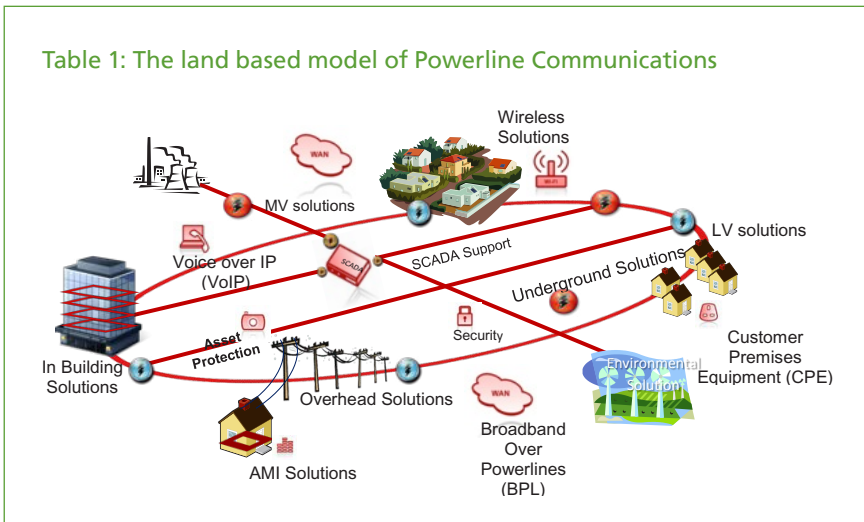
In order to succeed, the shipping indus-

try requires simple and cost-efficient solutions to plot a smooth course through the changing global commercial environment that are, at the same time, agile and flexible enough to navigate the choppy waters of an increasingly complex and demanding regulatory environment. This is, of course, whilst ensuring companies apply the necessary levels of cyber security with regards to their and their clients' digital information.

The challenge

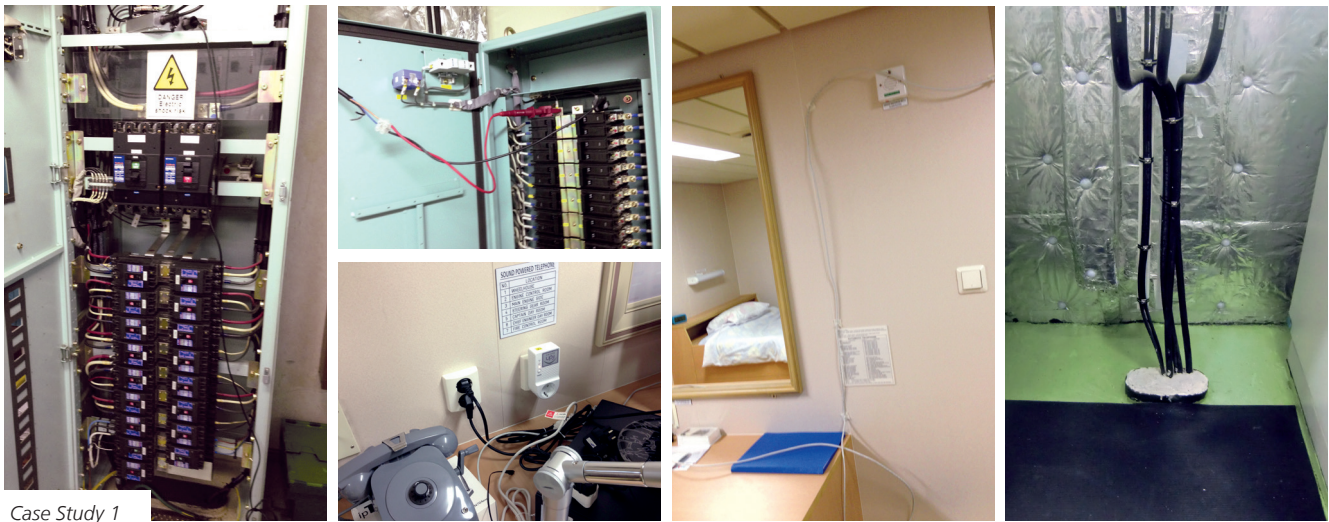
As previously pointed out, the challenge here is to give high levels of connectivity to vessels at sea whilst understanding the changing environment. IT requirements are constantly evolving and satellite communications continue to develop. Modern day vessel operations demand the best internal and external connectivity. By removing the need for cabling we are able to provide substantial cost savings, avoid interruptions to operations and deliver "vessel wide networks".

Table 1: The land based model of Powerline Communications



Setel Ltd, the UK's leading provider of communications solutions to the global maritime industry, have formed a strategic partnership with FDN Marine. FDN Marine are providing the revolutionary Powerline Communication Solution (PLC) for IT Networking provision at sea, based on their suite of industrial grade PLC products.

The Marine-Accredited PLC solution is designed to overcome the typical network connectivity issues, encountered on marine vessels and offshore platforms. By injecting a digital signal directly onto the electrical wiring, the need for any major works, such as re-cabling, drilling into bulkheads or dry-docking, is removed. This can be done



Case Study 1

invisibly in a matter of hours with no down-time in vessel operations.

Case Study 1

This vessel was on her maiden voyage. The key issue was that in the time between the ship being commissioned and its launch, the IT requirements had changed. This resulted in cabling being done *ad hoc*, resulting in fire doors being propped open, thus presenting a serious security risk and a threat to the integrity of the vessel, not to mention the cat's cradle of wires in the ward rooms. When the vessel arrived in Singapore, a pre-positioned engineer was able to fit the solution in the space of one hour.

The solution

The PLC equipment fitted ensures full vessel coverage. It can be retrofitted in a matter of hours by a single engineer deployed to the ves-



sel location. Installation is achieved with no drilling, re-cabling or operational downtime. The hardware incorporates 200 Mbps high capacity technology with fully scalable and

optimisable networks. With Electromagnetic Compatibility (EMC) accreditation for vessel use, secure transmission and comprehensive Quality of Service (QoS) Architecture; PLC Solutions feature a Triple Play network with voice, video and data governed by powerful management and control platform.

This solution is **not** based on the common power line Home-Plug variant of the technology. It is designed to provide faster, more flexible networks in the extreme conditions found in the marine environment. The standard off-the-shelf Headend Unit alone has the ability to work between -40° and +85° with an 11.4 year mean failure rate.

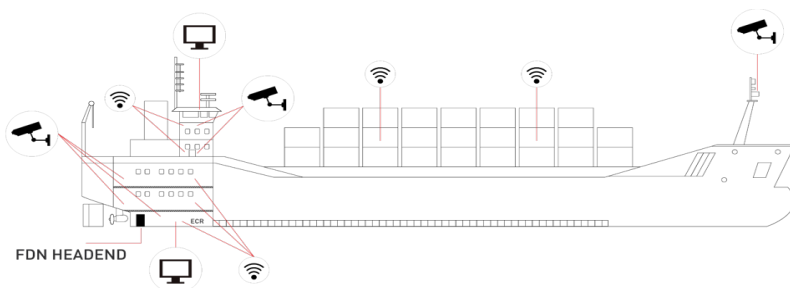
The hardware

The PLC solution comes in 3 parts:

The Headend Unit

The extremely rugged FDN HE unit is used to inject a digital signal onto the electrical infrastructure of the vessel to provide a full coverage IP network. This is normally done by connecting it to the main distribution board in the Engine Control Room.

Typical vessel installation



- PLC Network connected to satellite feed allowing for access to CCTV images and all vessel data remotely.
- Add as many cameras, Wi-Fi units and LAN points as required.
- The engine control room becomes a citadel, with full situational awareness with access to feed from all cameras. Access also available for external security personnel.
- Full coverage Wi-Fi for deployment of many other applications such as telemedicine & Intranet access.



The WAP-CPE Unit



Case Study 2

A high degree of network planning flexibility can be obtained along with remote configuration. SNMP-based management, enables rapid provisioning, diagnosis and testing.

This allows for networks to be designed and optimised around specific applications.

WMEU-CPE plug In

The compact FDN CPE is used to communicate with the HE to provide local connectivity to items such as wireless access points, PCs, monitoring equipment or CCTV cameras.

Simply plug and play as desired to create permanent or temporary networks. Once the HE is installed, these units can be used to provide connectivity to any on-board location with power or lighting.

The CPE can also be removed from its housing to create bespoke in-line units. Spare CPE units can be kept on board to instantly add new connectivity wherever and whenever required.

The WAP-CPE unit

The WAP CPE is the perfect unit to deliver

a Wi-Fi network without the need to run any new cables. It combines the technology from the standard CPE along with a high speed wireless access point.

The WAP creates a low-cost, scalable, secure network that provides high-speed connectivity and can work in places traditional Wi-Fi won't, such as, concrete buildings, steel vessels and areas with strong RF interference. Simply connect the unit to a wall socket to provide power and communications, it immediately joins the PLC network, providing a high speed connection that can overcome any obstacle. The unit supports a wide range of services including voice and video.

These units can be fitted permanently at strategic locations to provide full coverage or used "plug and play" to flood certain areas only when required.

The WAP Unit:

- Supports triple play applications such as VoIP, live streaming & IPTV.
- High performance with speeds up to 200Mbps.
- Wireless auto channel select.

- No cabling required, just plug straight into the electrical socket.
- Form a permanent network or simply plug and play where and when desired.

Case Study 2

This vessel was receiving complaints from on board guests regarding the limited provision of Wi-Fi services. There was a stated two-fold requirement of, firstly, additional connectivity to allow for the provision of further guest "internet cafes" and secondly, the facility to allow staff to perform day to day tasks more efficiently.

Our engineers visited the vessel during a scheduled stop in Rome and were able to provide the required connectivity inside two hours without any downtime or disruption to guests.

The Applications

These 3 pieces of equipment plus the technical expertise in our Engineers combine to create the SMART Ships of the Future. PLC Solutions are only limited by the imagination but key applications can include:

- Internet Access
- Equipment Monitoring



Case Study 3





- Satellite Distribution
- Telemedicine
- Wi-Fi For Crew Welfare
- Anti-Piracy Solution
- CCTV Security
- Container Monitoring
- Condition Based Maintenance
- Crew & Passenger Tracking
- VoIP Telephony
- Internal LAN Expansion
- RFID Tracking

...Delivered at the same time over the same network, and retrofitted invisibly in a matter of hours!

Case Study 3

Piracy is the single biggest threat to the world of shipping, with over 2,000 attacks having taken place over the past few years.

Our solution, combined with our CCTV providers, will ensure a full coverage matrix of covert internal and external CCTV and communications, deployed vessel-wide in a matter of hours, with no need to run any cable or perform any works on the vessel.

The vessel-wide, real time imagery, not only gives early warning of threats and helps improve the decision making of the crew safe in their citadel, but can be made available via satellite to home base HQ for situational awareness and possibly more importantly to external agencies who might want to effect a response.

This solution has been successfully adopted on a large number of tankers across the globe for leading blue-chip fleets. Installation will take a few hours and can be carried out either by FDN engineers or fleet personnel whom have undertaken an FDN training course and gained certification.

Integration Risks

Cyber Security

One of the risks associated with giving

access to your on-board LAN is the very real danger of either the extraction of sensitive content (data etc.) or the introduction of malicious content (viruses etc.).

Our systems are designed to mitigate this risk by being customisable.

Accountability

It is possible to register computers and devices via their IP address onto the Head-end Unit thus preventing external unregistered "Guest" devices access to the network.

Flexibility

Our systems also have the capability to be optimised to suit your requirements using VLANs to create multiple distinct broadcast domains. For example you could have an "Ops" domain for the vessel's technical management, and "Admin" domain for the vessel's internal management, as well as a "Public" domain that could be used to create controlled Wi-Fi access for crew "out of hours" usage.

Agility

Another benefit of customisation is that the system can be tuned to the optimal bandwidth to remove interference by other electrical items on the circuit i.e. Phone Chargers, transformers and other such pieces of equipment. By being able to "notch" out any frequencies that may interfere with vessel operations the Industrial grade PLC solution has achieved a higher level of compliance allowing it to work seamlessly with bridge and navigation systems.

Reliability

Bandwidth optimisation allows the injection of the most robust signal onto the electrical cabling with no need for re-broadcast. In sub-sea installations on tidal turbines, the signal is so reliable that it can travel from sea bed to surface (often up to 2000m) with no need for boosting and no loss of strength.

Conclusion

Industrial grade PLC solutions are designed to be simple, effective and cost efficient. It is a tried and trusted method of networking your vessel, proven on land and currently being rolled out at sea. It is a method of future-proofing your fleet to prepare for the demands of an ever increasing reliance on technology combined with the need for regulatory compliance in a newly digitised maritime environment.

In order for owners to make an informed decision Setel are offering a free (subject to Terms & Conditions) 2 month evaluation trial of the PLC Solution to interested parties.

The interest in Powerline Communication Solutions is growing and is already being deployed with numerous shipping clients. Setel and FDN Marine would be happy to invite potential clients to come on board the HQS *Wellington* on the Embankment in London, where we have the solution fully installed and used by the business centre tenants for their network provision, Wi-Fi and local CCTV security. For more information and Technical Data sheets, please e-mail Melliott-Square@Setel.co.uk ■

Editor's Note: Former Army Officer, Marcus Elliot-Square is currently Special Projects Manager for Setel, the UK's leading maritime communications provider and is part of the Powerline Communications Team. He previously worked for the London-based global emergency response company, Northcott Global Solutions Ltd, where he specialised in security advice both physical and cyber, tracking, crisis management and provision of evacuation solutions both on and off-shore.

Keep on training... until roboships sail

Shipping may need to train 40,000 officers a year for the next 15 years even as plans for unmanned ships continue to be developed.

World trade is forecast to more than double over the next 15 years, creating a boom in demand for shipping but a potential headache for ship owners as they contemplate their crewing dilemma.

If projected growth by the year 2030 is as high as 70%, the increase in the number of ships needed to meet demand could mean 600,000 extra officers to man them, according to Koji Sekimizu, the Secretary-General of the International Maritime Organization (IMO).

Speaking at the Danish Maritime Forum conference in Copenhagen in October 2014, Mr. Sekimizu said he had based his figure for the increase in recruitment and training – the equivalent of 40,000 a year – on the assumption that half of the existing 500,000 officers are expected to retire in the 15 years until 2030.

“This is a real challenge,” Mr. Sekimizu told the conference, “and further effort must be made to bring new generations into seafar-

ing as a profession. The seafarer’s life must be made more attractive. Simply improving the image will not work unless the younger generations see some actual benefits from serving the shipping industry.”

Shortage of skills or seafarers?

Few might argue that the industry does not need to do more to improve recruitment and retention figures and some might claim there is a current shortage, although this may be in skills rather than in actual seafarers. Speaking at an event in London in November 2014, the CEO of the British Chamber of Shipping said, “There is a global shortage of seafarers and that shortage will deepen as trade increases dramatically over the forthcoming decades.”

The picture might become clearer when the latest five-yearly update of the manpower survey undertaken jointly by BIMCO and the International Chamber of Shipping (ICS) is completed in 2015. This will be the fifth update since the first was undertaken in 1990. The last update in 2010 estimated the supply of officers at 624,000, two per



IMO Secretary-General Koji Sekimizu.

cent short of estimated demand. Forecasting is, of course, notoriously vulnerable to unforeseen events.

Two notable examples wrong-footing the manpower survey in its 25-year history were the opening-up of labour markets in Eastern Europe in the early 1990s and the financial crisis of 2008, the former increasing supply by more than had been expected and the latter drastically cutting anticipated demand.

Over the horizon?

Even so, those involved in recruitment, training and crewing – from employers to training institutions – like to have some idea of likely trends in supply and demand so they can plan accordingly. For some, however, looking as far ahead as 2030 might be taking long-term planning beyond their horizons.

In 15 years’ time when officers recruited as cadets now might be expected to be in senior positions on board, there exists,



Oskar Levander of Rolls Royce called for a debate on unmanned ships in 2014.

however, the possibility that some ships might be operated without any crew on board at all. The idea of unmanned ships received fresh impetus in 2014 when it was suggested that the time was right for a debate on the issue.

The call for a debate on what are sometimes known as drone ships or “roboships” was made in remarks by the engineering company Rolls Royce in an interview with the Financial Times published in January 2014.

“The idea of a remote-controlled ship is not new,” Oskar Levander, head of marine engineering innovation at the company, told the newspaper. “It has been around for decades but the difference is the technology now exists.”

Unmanned vehicles a reality in other sectors

While accepting that it might take more than a decade before global regulations could be in place to allow unmanned ocean-going vessels to operate, the Rolls Royce employee argued that a “local administration” (he suggested the US or the European Union) may be prepared to act earlier. He also believed container ships and bulk carriers would be the first types to sail unmanned, with public perception of the risks involved delaying any move to include oil tankers, gas carriers and others engaged in the transport of hazardous cargoes.

As Mr. Levander pointed out, the concept of unmanned vehicles is becoming a reality in other sectors, with driverless cars being tested on roads and an online retailer planning to use drones to deliver goods. Aviation is also exploring the use of pilotless aircraft: a turboprop Jetstream aircraft controlled from the ground but with back-up crew board has already been successfully flown in the UK on a 500-mile flight.

Trials involving unmanned surface craft in both the commercial and military sectors are also taking place. The US Office of Naval Research said in October 2014 it



Simulators of the EU MUNIN roboship project. (Photo: Fraunhofer CML)

had successfully tested a system involving 13 boats operating either autonomously or under remote control to escort and defend a “high value” navy vessel.

The European Union (EU) is also exploring the roboship concept through its Maritime Unmanned Navigation through Intelligence in Networks (MUNIN) research project which aims to develop a system for managing crewless ships from shore. “Conventional” crews would still be required to manoeuvre ships in and out of ports, while deep-sea autonomous operations would be monitored by seafarers ashore. In October 2014, a first simulation test revealed that more work was needed for the project to achieve its objective of conceptualising an autonomous bulk carrier.

Lukewarm response

The idea, however, of unmanned ships has received a lukewarm response from the industry, despite the fact crew costs form a large portion of operating costs. Ship owner representatives have pointed to the regulatory challenge, while the president of a leading ship management firm which recruits and trains thousands of seafarers told Lloyd’s List in November 2014 unmanned ships would only happen “in the distant future”.

The body representing seafarers’ and dockers’ unions was, perhaps unsurprisingly, more dismissive. David Heindel, chair of the seafarers’ section of the International Transport Workers Federation (ITF), said, “The human element is one of the first lines of defence in the event of machinery failure and the kind of unexpected and sudden changes of conditions in which the world’s seas specialise”.

The IMO Secretary-General, in his address to the Danish Maritime Forum, made no

mention of unmanned ships, while the IMO Secretariat had earlier said it was unaware of any proposals from member states that the UN agency should consider the need to amend existing legislation that would enable to ships to operate without crew on board.

Affecting labour suppliers

This, of course, does not mean that roboships will not happen, rather that no-one is sure when, within the next couple of decades perhaps, they will become reality. In the short term, ship owners seeking operational efficiencies have other, more pressing, issues to address. Seafarers now have to be both proficient in both use of computer systems such as electronic navigation and traditional seamanship, while crewing levels have to meet stricter regulations covering hours of work and rest.

As the likelihood of roboships increases, however, the anticipation may start to affect both recruiters and potential recruits. Widespread use of crewless ships is also likely to affect major labour-supply countries like The Philippines whose seafarers were expected to remit USD 5.5 billion in 2014.

Whether the next generation of seafarers that the IMO’s Mr. Sekimizu believes needs to be convinced of the benefits of serving the industry will see only a future of crewless roboships and be deterred remains to be seen. ■■

Editor’s Note: Andrew Guest is a freelance journalist.

New books

The way we were

Maritime history comes in many forms, ranging from the academic works of the professional historians to the memoirs of mariners and other industry folk. Neither tends to adequately capture the reality of an era; how ships were worked and how shipping people lived afloat and ashore and conducted their business.

An exception might be *The Prowess of Charlie Fielder* by David Wood and Richard Walsh, which paints a detailed picture of coasting and short sea life in the little ships which were effectively the hauliers of bulk trade in the first half of the 20th century.

It is based on a remarkable archive found in the estate on Captain Charles Fielder, who spent his whole working life in Thames barges under sail and small power driven ships, many of them owned by FT Everard & Sons. Charlie Fielder, as he was known, died in 1993.

Hand-written log

Within this archive was a hand-written log of his time in these small vessels, detailing the voyages, the cargo, the crew and the way the ships were operated. He undertook this part diary, part record, from the 1920s, when he was the Mate on a small steamship, but we learn much about his family with both father and grandfather Barge Masters under sail and his own apprenticeship on sailing barges in the Thames Estuary and East Coast. He joined FT Everard in 1919, sailing as the Mate of one of the company's sailing barges, staying with the company and progressing from sail to steam and eventually to command one of the Everard motor ships. The *Prowess* was an Everard motor tanker, where he sailed as Mate from her commissioning.

BIMCO Past President Michael Everard, who has written the foreword to this book,

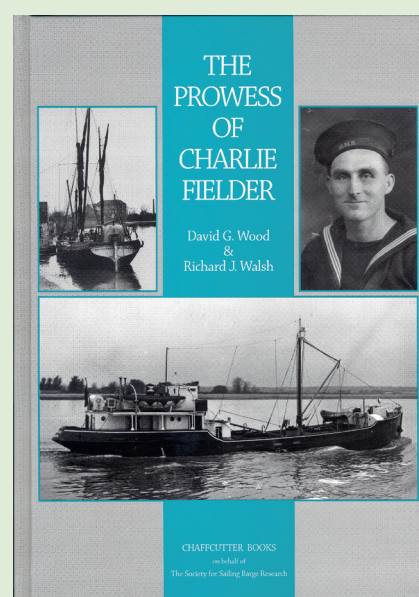
suggests that the reader gains a "unique picture of an era already beyond the memory and imagination of today's seafarers". From Charlie Fielder's logs and letters, written with considerable detail in little exercise books, we can learn so much of the operations of these busy little ships, their schedules, the way they were worked and the cargoes they carried.

The minutiae of shipping

We read about cargoes and the ports they worked, from the upriver berths and malting where are to be found high-rise apartments today, to the little East Anglian creeks where small ships would swim, with inches under their keels on the top of the tide. We read about cargo work and old fashioned seamanship, engine-breakdowns, the way in which operations were so very much controlled by the weather, with fogs or gales causing chaos.

We learn about tank cleaning with cloths and painting red lead when the tide sits the ship high and dry on the mud. We learn about the curious co-existence in a single company of sail and powered ships, with the latter often giving the latter a helping hand when the wind or tide was against them.

The personal records have been supplemented by the authors, who have undertaken useful research into the community that worked in the barges and those who owned them. The Fielder family history is interesting, as is the accounts of the industries which supported these ships in the maltings, cement, bricks, seed and grain



enterprises that ranged up and down the estuary and filled the coastal ports. As a record of small tanker operations, switching from seed oil to molasses, spirit and luboil, it is a fascinating chronicle.

Here is coastal navigating among the East Coast sandbanks in the pre-radar days, ship operation with no communication other than shore-side telephones to keep in touch with the office. It is a well-illustrated volume, with large numbers of black and white photographs providing a composite picture of a vanished age.

The Prowess of Charlie Fielder by David Wood and Richard Walsh ISBN 978-0-9560596-2-8 is published by Chaffcutter Books, Ware, UK. Price USD 13.50. Website: www.chaffcutter.com ■■

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The first two years of the academic period prepare the midshipmen for sea-phase training giving them the necessary knowledge and skills required on board as cadets. The third year is the sea-phase training. At the end of the training, the midshipmen should have fulfilled the

requirements for Regulations II/4 and III/4 of the STCW Convention.

The last academic period is the professional stage. It is at this stage where the graduating midshipmen are being equipped with additional knowledge and skills required on them as Third Mates and Fourth Marine Engineers. Likewise, they are also being developed to acquire a sense of responsibility that an officer and a gentleman should possess.

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Macro Economics

Will the plunging oil prices facilitate stronger economic performance?

Global economy

The world economy will gradually improve over the next two years, according to the latest Economic Outlook report from the Organisation for Economic Co-operation and Development (OECD). It is estimated to grow by 3.3% this year and 3.8% in 2015 (IMF). We have heard this before – hopefully, this time it will prove to be true. However, the different stages of recovery between countries – in terms of growth, fiscal, and monetary policy – remain a risk factor.

The Euro Area is the weak spot in the global economy. The OECD implies that the Euro Area is not only a major risk to the rest of the world, but also very vulnerable to changes in the global economy. This highlights the interconnectedness across the world that has developed because of globalisation and increased world trade.

The fall in global oil prices, in itself an indication of both poor oil demand but also over-supply from producers, is very good news, as lower energy costs to the consumer should free up more money to spend on other goods. This phenomenon could actually prove to be a significant stimulant of growth, as Winter in the northern hemisphere usually racks up the biggest energy cost in any given year

US

The US economy continues on the road to full recovery, with yet another strong quarterly GDP growth figure. Data from the US Commerce Department shows that GDP grew by an annualised rate of 3.9%, upwardly revised from the flash-estimate of 3.5%. Consumer spending, which accounts for more than two-thirds of the economy, increased by an annualised rate of 2.2% compared to the previously estimated 1.8%. This spending was one of the main factors for increased GDP growth, and is a vital component for a sustainable recovery.

The increase in consumer spending rests on the fact that the current job market is stronger than it has been for some time. At the end of November, jobless claims have been below 300,000 for ten weeks in a row, something not seen since the year 2000, indicating new job creation is firm. Furthermore, falling oil prices have lowered the cost of gasoline to USD 2.81 per gallon, the lowest it has been since November 2010.

The Federal Reserve (FED) has announced that it will end its bond buying strategy, as quantitative easing is no longer needed. Getting to this point is excellent news. Now the US (and global) economy needs to prove it can fly without the push from the FED.

Asia

In Japan, the economy has slipped into recession, marking another defeat for Prime Minister Shinzo Abe's "Abenomics". This follows in the wake of the April sales tax hike, which saw an increase from 5% to 8%. Because of the slip into recession, the next sales tax increase – up to 10% – scheduled for October 2015 has now been postponed.

The OECD has same poor growth forecast for Japan as it does for the Euro Area, setting its target at 0.8% for 2014, but emphasises that the weak Yen will benefit exports, and since corporate profits remain high, there is still hope for recovery.

In China, the Central Bank cut its one-year lending rate from 6% to 5.6% and its one-year deposit rate from 3% to 2.75%, the first cut since 2012. This is a result of a third quarter growth estimate, which at 7.3% lies dangerously close to 7.2% that is arguably the estimated minimum needed to keep unemployment stable. Behind the headline figures, the GDP growth rate may actually already be somewhat lower than the official data tells us.

EU

The Euro Area is expected to grow by 0.8% in 2014, but the risk of deflation is still very much a threat. The OECD estimates inflation to be 0.6% next year, far below the European Central Bank's (ECB) target of 2.0%. The Euro Area "may have fallen into a stagnation trap" said the OECD and once again urged the ECB to begin a quantitative easing strategy.

At the end of November, Euro Area inflation slowed down to just 0.3% to match a five-year low, partly due to lower oil prices, but it keeps the heat on the ECB to stop this slide from continuing. The ECB has stated that it wants to raise inflation "as fast as possible" and they may just get a little bit of help from the oil price plunge.



Source: Wulfmorgenthaler



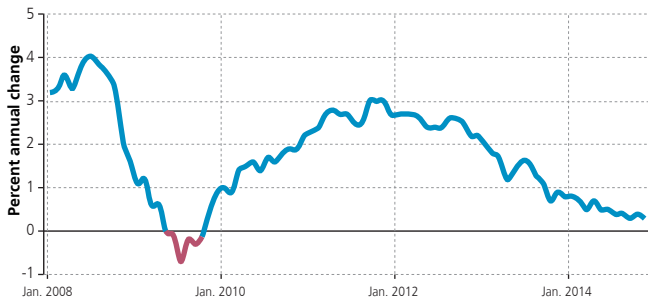
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PETER SAND
 BIMCO Chief Shipping Analyst

The core problem for the ECB remains the German reluctance to start printing money. That strategy has worked well in the US and the UK and it is now the strategy in Japan too. Nothing the ECB does seems good enough for the financial market, which boosts the negative sentiment.

Euro Area Inflation Rate
 Consumer price index, 2008-2014



Source: BIMCO, www.tradingeconomics.com, Eurostat

Outlook

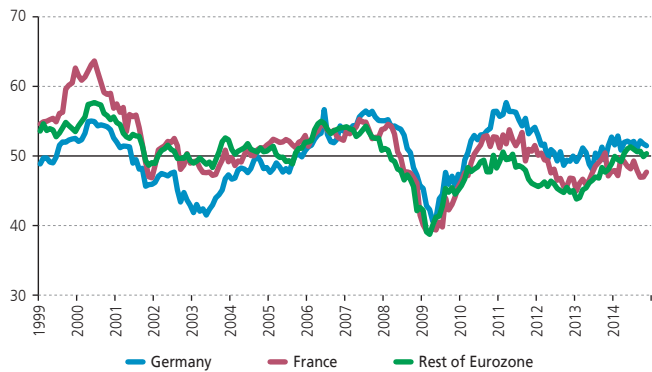
Like all the other central banks of the world, the FED will now focus on its target for inflation, lying currently at 1.7%. Quantitative Easing did not create inflation, despite some economic theories suggesting otherwise. What would then bring about inflation on a global scale? Higher labour costs and bigger pay-checks to the global workforce should. Nevertheless, as labour is abundant in so many places in the world, perhaps with the exception of the US, higher inflation is not waiting around the next corner. The challenge is to avoid deflation across the globe, as that would be toxic for the market-driven global economy.

The lack of confidence in the immediate future within the Euro Area also restrains hiring and that leaves unemployment at a continued high level – nowhere near the point where wages could rise due to labour market pressure.

France and Italy remain the key concerns in Europe, with demand for goods and service falling at a faster pace than last month. Meanwhile, in Germany they are finding it difficult to keep it together too, as a lack of new orders is cooling down economic activity.

In Asia, Prime Minister Abe may have a renewed mandate to keep his economic turnaround on course, despite being somewhat off track as regards to the third arrow (structural reforms), as well as sales tax hikes.

Core v. Periphery PMI Employment Indices
 Composite Employment sa, 50 = no change on previous month

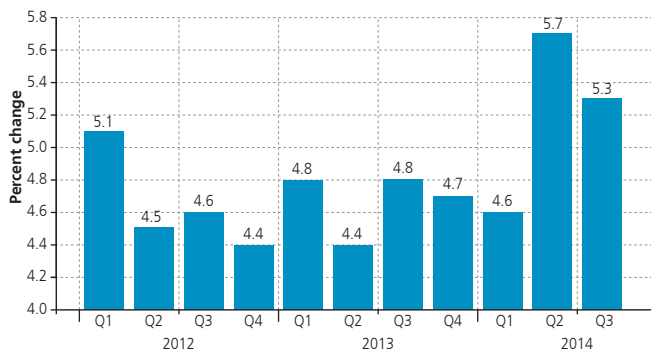


Source: BIMCO, Markit

Indian GDP grew by 5.3% in Q3, but the general sentiment is that the economy has now bottomed out and the Modi Government should be able to build on this to deliver on their election promises. Half a year on from now we will know whether this optimism had a more solid foundation than just the “Modi effect”.

In the meantime, the US and UK are pulling away in the right direction, with stronger and stronger GDP growth.

India GDP Annual Growth Rate
 2012-2014



Will the plunging oil prices facilitate stronger economic performance? It surely holds the potential to do so, on a national level as well as on the individual shipping company level. ■■

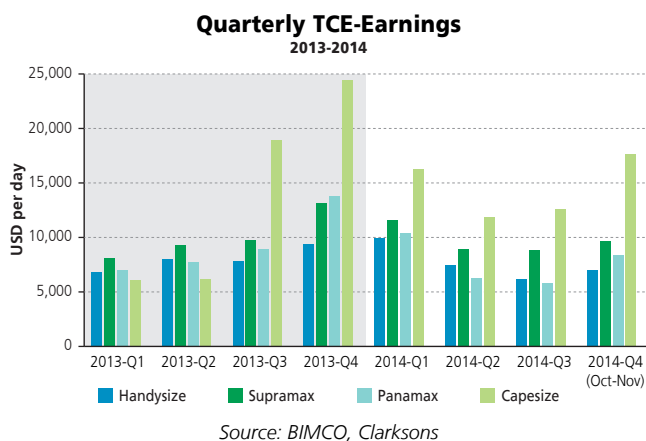
Global seaborne trade is dependent on global growth, thus it is vital if general shipping demand is to go forward that a smooth transition from a sustained recovery to normalized demand become successful. The article was finalised on 5 December 2014. Read about the impact on shipping on the following pages...

Dry Bulk Shipping

A reduced orderbook is improving slightly on a difficult situation

Demand

Rates have struggled all year to beat last years' performance, and failed miserably to do so beyond Q1, with the exception of Capesizes that managed to deliver stronger freight rates in Q2 also. The optimism in the market was high going into 2014, but it is likely that we will end the year on a negative note, as the December market is unlikely to turn that upside down. The upbeat ending to 2013 provided high earnings in an extraordinarily strong market to an extent that proved to be unreachable in 2014's prevailing conditions.



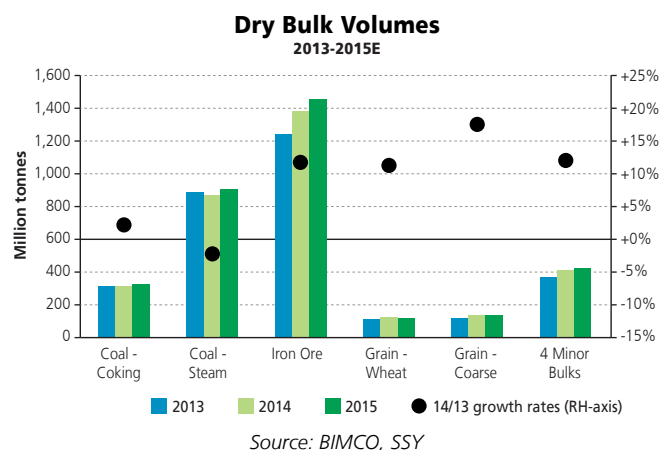
By mid-October, Capesize freight rates were rising following a month-long slide from USD 17,496 per day to USD 7,932 per day. Month-long slides are unusual in Q4. Usually, this time of year presents a completely different picture due to strong seasonal demand pushing rates up. The BIMCO freight rate forecast estimated earnings for mid-October to mid-December to be volatile in the interval from USD 8,000 to USD 23,000 and we got it – almost. Freight rates started low, and then went all the way up to USD 26,381 per day, exceeding our expectations. Since then, fortunes have reversed again.

The highly anticipated iron ore cargoes out of Brazil finally showed up and proved to be strong. Nevertheless, as they arrived late, the market quickly supplied enough ships to cater for the upswing, leaving only little room for a peak, and an elevated market that did not last long.

As regards the smaller ship sizes, they are left out as the demand situation is currently very biased towards iron ore and therefore favours Capesizes more or less exclusively. This was one reason for them not to follow suit. Rates were volatile and erratic within

BIMCO's forecast freight rate interval for the duration of October and November.

Q4 remains on target to become the strongest quarter ever in term of volumes transported – but not in terms of industry earnings. Even without the support of Chinese thermal coal imports, seasonal strength is intact.



The hugely negative surprise in 2014 – thermal coal imports into China – continues to disappoint, worsening in the most recent months. Most recently, the Free Trade Agreement (FTA) between China and Australia failed to include thermal coal. It did include coking coal in the agreement though – probably because Australia provides 60% of global coking coal exports and China depends on Australian coking coal to keep its enormous steel industry running.

Supply

The order book is currently low, a sign of poor freight market conditions, leaving only few in the market to invest in the future. China is set to build 62% of the dry bulk order book as it currently stands, with Japan in a distant second place, with 27% being placed at Japanese shipyards. Contracting activity in August was weak, but October/November has been even lower and that has reversed the rising trend of a growing order book. Eighteen months ago, it stood at “just” 135 million DWT, reaching 184 million DWT in July and accounting for 170 million DWT at the end of November.

Whereas ordering activity in 2013 was exorbitant at 103 million DWT, 2014 has seen 55 million DWT ordered so far. Getting



QUICK FACTS

5 December

Total fleet size (change since 1 January)

DWT million: 755.95 (+4.4%)

Rate indices (change since 10 October)

BDI: 982 (+2%)

BCI: 1,282 (-17%) • BPI: 1088 (+26%)

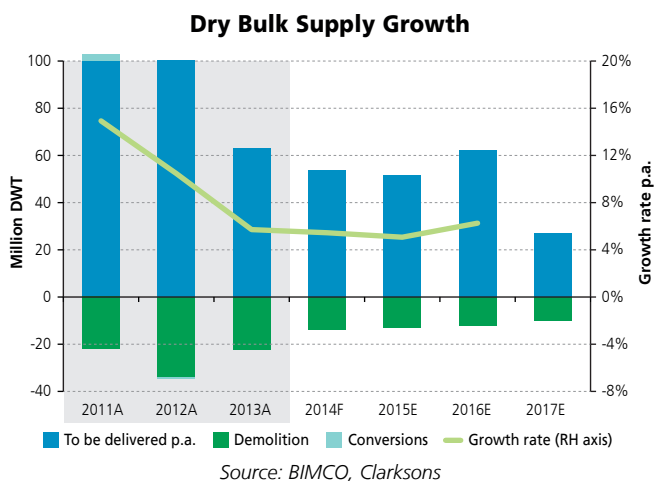
BSI: 971 (0%) • BHSI: 499 (-3%)

Latest update on Baltic Indices available at www.bimco.org

financing for newbuildings is more difficult than it has been, but as proved so many times before, it is not difficult or expensive enough to act as a restraint. Not only new players are investing; also the “established” household names of the industry are ordering.

The fleet is growing steadily, with demolition in a significant supporting role. Since the last report went out in mid-September, the pace of demolition has been rock steady: 2.75 million DWT has left the active fleet at a monthly average of 136,000 DWT. BIMCO’s full year estimate of 14 million DWT scrapped this year will thus be just a little shy of the final amount when the year closes.

It is peculiar that Handymax is the segment with the lower level of demolition activity, as that segment in particular will see a strong influx of new ships in 2015. For owners and operators that may seem like the distant future, as they are simply trying to make the best of a bad market. Freight rates for Supramaxes climbing beyond USD 10,000 per day does not inspire many to sell the ships for demolition. 2012 and 2013 saw an average scrapping age of 28 years – in 2014, it is down to 27 years.



A is actual. F is forecast. E is estimate which will change if new orders are placed. The supply growth for 2014-2017 contains existing orders only and is estimated under the assumptions that the scheduled deliveries fall short by 10% due to various reasons and 30% of the remaining vessels on order are delayed/postponed.

Outlook

As 2014 draws to a close, the status for the year that is almost behind us is this: owners and operators did not enjoy the full upside in the freight market from the strong lift in demand volumes, as sailing distances did not “bring it home”. Most significantly, the evaporating exports of bauxite and nickel ore from Indonesia to China were only swapped for Philippines exports to a certain extent. This was painful, especially for the Handymax and Supramax market. For Capesizes, the strong iron ore volumes predominantly sailed from Australia and not Brazil, South Africa or Canada, which would have been much longer distances and thus a higher tonne-miles demand for Capesizes.

Currently, 2015 looks a bit dull on the demand side, whereas the supply side seems to provide the same amount of new capacity as in 2014. Such a development will not improve the fundamental market balance and Supramaxes in particular seem to be challenged by a high inflow of new tonnage.

The current discussion about lower bunker prices and the speculative case for limiting slow steaming ought to be premature in dry bulk, as the proportion of the oversupply is still massive. For crude oil tankers at the current high rates, on selected/isolated trades and only in theory, you may be able to build a case that might support higher speeds on the ballast legs to improve earnings, as 2015 holds little supply side pressure in hand. BIMCO believes the current positive market is fragile and any “playing with fire” in terms of increasing speed and thereby actual supply may turn the tables quickly. For container shipping, and to some extent also product tankers, the case is not clear, as the market is so competitive and operators and owners have different fleets, cost profiles, and customers. However, keeping slow steaming in the back of one’s mind is a solitary first-best option for raising shipping industry profitability.

To sum up, our forecast for December/January: BIMCO assesses that the Capesize TC average rates will be in the interval of USD 5,000-15,000 per day. Panamax TC average rates will stay around USD 6,000-10,000 per day. For the Supramax segment, BIMCO forecasts freight rates in the USD 7,000-11,500 per day, whereas Handysize freight rates are expected around USD 5,500-7,500 per day. ■■

More shipping market analysis on www.bimco.org

Tanker Shipping

Demand is outstripping supply for the first time since 2008

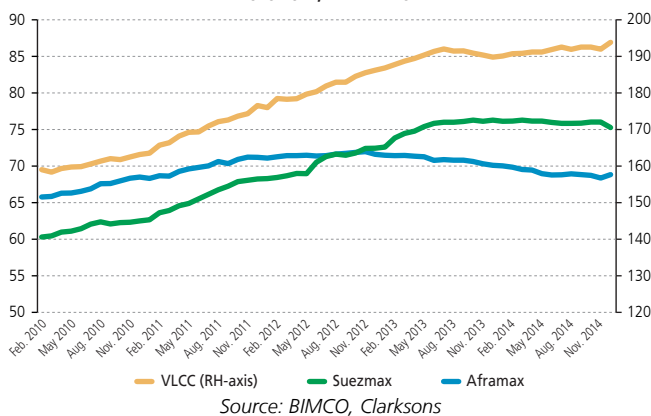
Demand

Freight rates are always difficult to predict. This time around, the sudden tightness took us by surprise in a positive way. Beyond that crazy third week of November, we almost nailed it for crude oil tankers. Does the market hold more of that for us? During December, most certainly; going into January, the uncertainty is greater. The demand side is seasonally strong now, but as touched upon in the macroeconomics section, the world has revealed limits to its thirst when it comes to oil.

So what is providing the stronger freight market? It is being delivered by the supply side! However, only the newbuilding side of it, because the crude oil tanker demolition segment has contributed very little, both in line with the all-year BIMCO forecast.

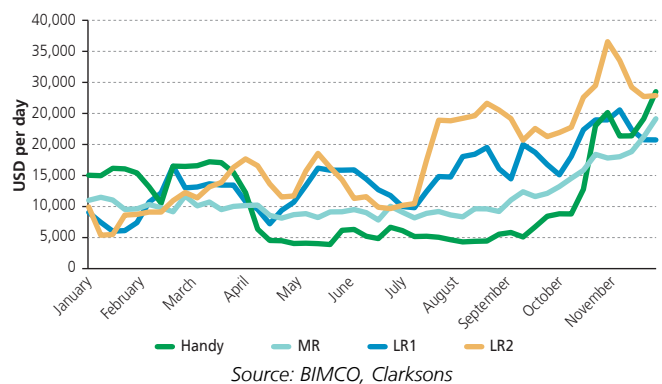
Respectively, the fleets of the three segments of VLCC, Suezmax and Aframax have grown by 1.1%, -0.5% and -1.7%, building on a development that started in 2013. Demand is outstripping supply for the first time since 2010, bringing about stronger freight rates.

Crude Oil Tanker Fleet Development 2010-2014, DWT million



In the product tanker segments, the drop in oil prices may have stimulated demand for LR1s and LR2s right away, with the first and second half of the year being worlds apart. Handysizes and MRs caught up in Q4 on the back of more trading activity in a market where prices suddenly moved as compared to the rather flat and steady oil prices seen during the first six months of the year. The freight rate at end-November was a six-year-high for all product tanker segments.

Product Tanker Earnings 2014



A large oversupply of oil from non-OPEC as well as OPEC-nations makes it a mutual “blame game” as to who should reduce output to keep the market in balance and prices high. Neither side is able to take co-ordinated action, making the fight for market share a focal matter as prices keep tumbling.

Supply

As crude oil tankers are literally the only ships making very good money in the market today and potentially also tomorrow, it's no surprise at all that investors are putting their money into crude oil shipping. The game may be changing, though, because of China's stated interest in bringing more crude home on national tonnage. As crude oil imports into China are affected by slower economic growth, there remains less room for independent operators to serve the world's biggest crude oil importer.

During September and October, 6 VLCCs, 10 Suezmaxes and no Aframaxes were ordered. This activity brings the total number of VLCCs on order up to 91, up from 61, eighteen months ago.

With 22 VLCCs delivered in 2014, of which six in the past two months, the segment is on to something good and vital for the market balance. In the past six years (2008-2013), 48 new VLCCs have been delivered on an annual average. 2014 will see a maximum of 25 delivered. 2015 has just 27 VLCCs scheduled for delivery, 2016 has 49. A window of opportunity is certainly opening up here for the fundamental balance to improve in 2015, assuming that demand remains decent.

QUICK FACTS

5 December

Fleet sizes (change since 1 January)

Crude (DWT million): 375.36 (+0.6%)

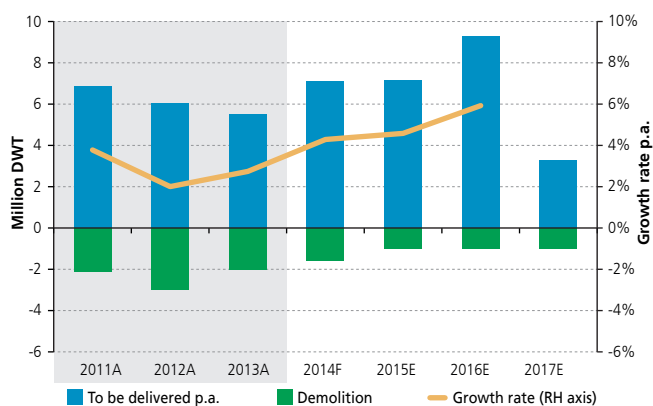
Product (DWT million): 132.70 (+3.3%)

Rate indices (change since 10 October)

BDTI: 818 (+21%) • BCTI: 777 (+35%)

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Product Tanker Supply Growth



Source: BIMCO, Clarksons

A is actual. F is forecast. E is estimate which will change if new orders are placed. The supply growth for 2014-2017 contains existing orders only and is estimated under the assumptions that the scheduled deliveries fall short by 10% due to various reasons and 20% of the remaining vessels on order are delayed/postponed.

Meanwhile, interest in new product tanker orders has dried up. Only 20 new orders have surfaced since 1 July. The preference of product tanker investors is clear: 16 out of the 20 new orders landed in South Korea. During first half of 2014, 57 new ships were ordered.

2014 was set to be another big delivery year for MRs. With 75 being delivered so far and 15 potentially still to come, 2014 is already topping the full year of 2013 that saw 72 new MRs. Since the start of 2014, the MR fleet has grown by 7.4% year-to-date.

The dire market conditions in the first half of the year have resulted in an elevated level of postponements taking place. Annual supply growth is still strong, though.

Outlook

Can the higher freight rates be sustained now that crude oil tanker supply side growth for 2015 is expected to stay as low as that in 2014? It depends on all the individual owners and operators' continued focus on slow steaming, on cutting fuel costs and realising the only thing higher speed may bring about is a transference of profits from the owners and operators to their customers.

If lower oil prices can continue to generate higher demand for product tankers, Q1 could have some positive trends lined up. This will happen in the case of normal, seasonally lower oil demand and an unchanged level of oil supply, as producers need more time and certainty before adjusting output to a new normal level. Maybe cancellations and postponements of investment in the oil industry will follow, which in the end may reduce production and add supply side pressure to the low oil price.

Just before the curtain fell on the product tanker segment, where supply is more than available before the long-awaited demand boost arrives, freight rates increased sharply. Not since 2008, have we seen Handysizes at USD 28,000 per day and MRs at USD 24,000 per day. This bodes well for the future; rates are responding to changes in demand by spiking and not just wobbling. With a supply-side that picked up from last year – and is set to go even higher in 2015 – the efforts made by individual owners and operators to alleviate the pressure from oversupply appear to be bearing fruit. Going forward, it is important for product tankers to keep slow steaming around in order not to depress freight rates.

For December/January, BIMCO expects earnings for the VLCCs at USD 30,000-55,000 per day, Suezmax crude oil tankers at around USD 20,000-45,000 per day and Aframax are expected in the region of USD 20,000-40,000 per day.

In the product tanker segment, BIMCO expects earnings on the benchmark routes from AG to Japan for LR1s to stay around USD 15,000-25,000 per day. LR2 ships are too enjoying the stronger market, BIMCO expect earnings around USD 20,000-35,000 per day. Handysize rates are seen strong in the USD 18,000-30,000 per day, with MR average rates in the interval of USD 12,500-25,000 per day. ■■

More shipping market analysis on www.bimco.org

Container Shipping

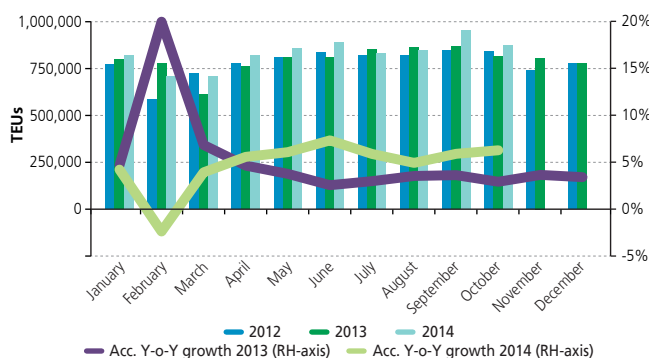
A strong demand side has erased the idle fleet, as bunker costs have come down too

Demand

The peak season of the year also saw the greatest volatility of the year. Following the steady freight rate development on the Far East to Europe route up until September, BIMCO was blind-sided when trying to forecast a continuance of that trend. We believed the industry was not going to imitate the freight rate development of last year, as it was following such a tight line until then, matching supply with demand. At the same time, almost all of the fleet that was standing idle was re-activated, which was quite an achievement. However, the fairy tale has paused for a while at least. Since September, rates have gone down an all too familiar road.

Demand from Europe appears to be more of a restocking issue than a 100% consumer-driven revival. Regardless of its origin, volume growth has been impressive. According to CTS, European box imports were up by 8% y-o-y in the first nine months of 2014. Since Asian imports from Europe went up by just 0.2% in the same period, the imbalance between front haul and backhaul has widened again, reversing the recent trend of stronger backhaul growth. Asian exports to all US destinations have grown by 5.6% in total (CTS). BIMCO data shows a 4.4% import growth on the US West Coast for the first ten months whereas exports fell by 1.75% during the same period.

US West Coast, Inbound Loaded Containers
2012-2014



Source: BIMCO, Ports of: Los Angeles, Long Beach, Oakland, Portland, Seattle and Tacoma

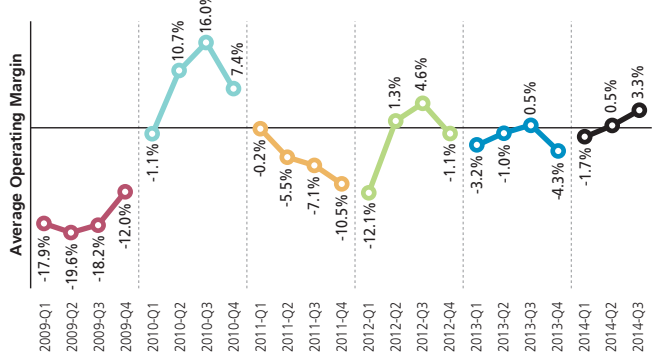
These two quite different demand situations reflect the macroeconomic realities as highlighted so many times in our economic analysis. The US is firing on three out of four cylinders now, whereas Europe is running only on one, it seems. Intra-Asian trade is still running high, as out-of-Asia exports keep up and growing prosperity in the region grows volumes organically.

Supply

Now that we have got the idling of ships down to almost nothing, the big question on the supply side of container shipping is what next? Will some liner companies begin to speed up? Fuel costs have come down, but remain at a high level. Consider this: earnings are still poor, the charter market is horrific. Idling was a sign of a deeply troubled industry and the disappearance of it now is not a sign of an industry with disappeared troubles.

If higher speeds were reintroduced, less tonnage would be needed in current trades. From this, cascading would intensify, fuel consumption and costs would go up and we have just seen how tight the market balance is. The demand side is not all-conquering, and why reverse all the cost-cutting initiatives that have brought a certain level of profitability back to the industry? According to Alphaliner, average operating margins in Q3 were 3.3%, building on a rising trend from -1.7% in Q1.

Main Carriers Average Operating Margin by Quarter
2009-2014



Average of APL, CMA CGM (fr 2010), CSAV, CSCL, EMC, Hanjin, Hapag-Lloyd, HMM, KL, Maersk, MOL, NYK, WHL, YML, Zim

Source: BIMCO, Alphaliner

In isolation, a rollback of slow steaming for an individual company is a trade-off between the reduced costs of taking a ship out of a loop against the extra cost of higher bunker consumption for the remaining ships in the loop when they speed up. Falling bunker prices bring the latter down and may therefore in some cases, all other things being equal, result in marginal costs that favour higher speed. A fight for market share naturally also plays a part in this.

The demolition of container ships has stalled completely, following a hectic first half of 2014. This led BIMCO in June to make an upward revision in of our initial estimate of 290,000 TEU to 500,000 TEU for the full year. In contrast, the monthly average for the first half



QUICK FACTS

5 December

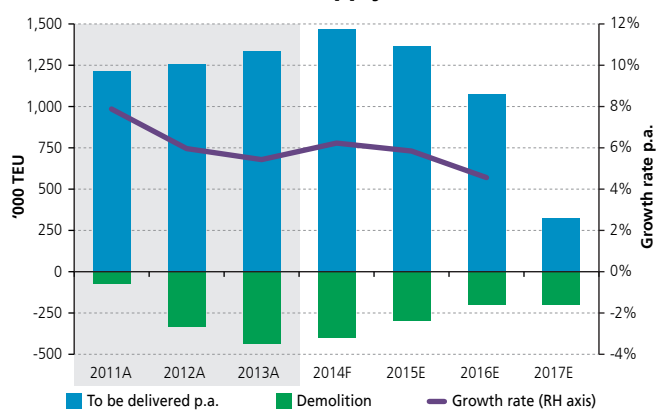
Total fleet size (change since 1 January)

TEU million: 18,115.35 (+5.8%)

Rate Index (change since 10 October)

CCFI: 1,030.07 (-3%) • SCFI: 919.00 (+1%)

Container Supply Growth



Source: BIMCO, Clarksons

A is actual. F is forecast. E is estimate which will change if new orders are placed. The supply growth for 2014-2017 contains existing orders only and is estimated under the assumptions that the scheduled deliveries fall short by 10% due to various reasons and 15% of the remaining vessels on order are delayed/postponed.

of the year was 46,700 TEU; the average in second half has been just 16,400 TEU.

This, in turn, now leads to an increase in the overall supply growth estimate, as the demolition amount is unlikely to exceed 400,000 TEU, thus bringing the net change to the fleet stock to a three-year high at 6.2%.

One hundred and eighty six new ships have been delivered, giving us the second largest delivery year on record in 2014; second only to the bumper year of 2008, that saw 1.5 million TEU introduced

New contracting for the year to date is now at 853,000 TEU, the aggressive new ordering of 29 ships in September is now behind us, with only five ships of 1,800-1,900 TEU being ordered during October and November.

The total fleet size passed the 18 million TEU-mark in November and is now heading for a 19 million TEU-mark in approximately eleven months' time.

Outlook

Following the return of great volatility in freight rates, it is bound to take some time for market conditions to re-establish a more stable market. This is especially true in a declining market, where absolute volumes are reduced in Q1 and particularly around the Chinese New Year in early February, before building up to the next peak at the end of Summer in the Northern hemisphere. When adjusting supply, being "caught out" just behind the curve may lead only to falling rates, despite an attempt to strike the balance.

In conjunction with the 0.1% sulphur implementation in Emission Control Areas (ECAs) on 1 January 2015, BIMCO is calling on the governments of countries bordering ECAs to exercise a robust enforcement of applicable sulphur limits to ensure a continued level playing field for all ships.

"Failure to do so would seriously expose compliant ship owners and operators who are bearing the high cost of ultra-low sulphur diesel oil", BIMCO President John Denholm states.

What have owners done to meet this challenge? Only a few have a trading pattern for the individual vessels that makes them choose to invest in a scrubber. They simply do not spend enough time inside the ECA zone to see a payback time short enough to make the investment pay off. Most owners and operators have chosen to comply with the regulation by using ultra-low sulphur diesel oil. However, the fact that ultra-low sulphur diesel oil is 50% more expensive than Heavy Fuel Oil may be an incentive to stick with slow steaming schedules inside the ECA zones at least.

Ro-Ro shipping is currently one of few sectors with scrubbers on board several ships. Surcharges to shippers have already been widely announced on selected Far East to Northern Europe trades, all trans-Atlantic and all trans-Pacific trades in and out of the North American ECA. ■■

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The outlook for multi-purpose and heavy-lift fleets

Even though 2014 is not panning out as well as was expected at the beginning of the year, Drewry remains cautiously optimistic for the multipurpose sector.

The growth in demand for this sector continues to be eaten away by competition from Handy bulkers and containerships investing in new ways to carry project cargo.

However, the demand for the sector is still strong and growing at a faster rate than the fleet, which is still in the manageable position of having an orderbook at just 8% of the current operating fleet. The only cloud on that particular horizon is that the majority of investment is going into project carriers with heavy-lift capability, which will therefore compete with the container lines for project cargo.

Demand outlook

The IMF has continued to shave percentage points from its initial predictions for global economic growth in 2014, with latest estimates at 3.3%. Although that is up

slightly from the 3.0% predicted for 2013, we do not expect much real improvement until well into 2015. That said, we estimate that dry cargo volumes grew by just 2.5% over 2013 and are expected to average around 4% growth per year through to 2017 (see Figure. 1).

It is our belief that, although 2014 has not fulfilled its promise in terms of cargo volumes, levels will start to climb back again for both the minor bulks and general cargo. Dry cargo demand is steady for the medium term and growth should be positive. Our analysis suggests that the competition from Handy bulkers, which has been significant over the past few years, will very gradually start to retreat as growth in that sector of the dry bulk fleet starts to slow. Equally it is clear that the container lines are not giving up on project cargo and the expectation is that this competition intensify, although we

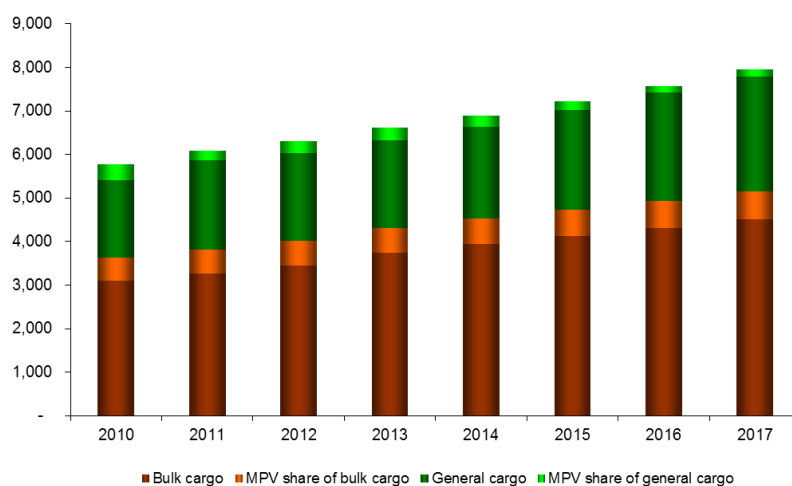
believe there is some ceiling to be reached – and fairly quickly – in this sector over the longer term.

One of the principal factors in the demand recovery for this sector is the strength of the projects market. Project cargo is a significant portion of the breakbulk market, although its definition makes analysis difficult. Over the course of the year, Drewry has followed the major news stories for new projects being developed globally and we continue to be optimistic for this sector.

Equally, crude steel production is a key driver for the market. The World Steel Association released its latest Short Range Outlook for 2014 and 2015 in August, with the forecast for global apparent steel use in 2014 up by 3.1% over 2013 and the expectation that 2015 would see demand grow further. An unexpectedly strong in the developed world in 2013 led to a much higher total than anticipated. In particular, recovery in the US gained strength, while the downturn in the EU bottomed out. The expectation from Worldsteel is for positive growth in steel demand in the latter for 2014.

There is also an expectation of a return to growth for apparent steel use in the US over 2014-15, after a decrease of 0.6% in 2013. The forecast is for steel demand to grow by some 4.0% in 2014 and 3.7% in 2015. That said, there are concerns that any further actions by the Federal Reserve Bank could jeopardise this growth. Conversely, growth in Chinese apparent steel use is forecast to slow over the period from 6% in 2013 to 2.7% in 2015, which goes some way towards explaining the forecast by another steel analyst (MEPS) that China would export some 73% of its increased steel output over 2014. All of which can only be good news for MPV fleet demand.

Figure 1: Development of MPV market share (million tonnes)



Source: Drewry Maritime Research

Fleet outlook

At the beginning of September, the multi-purpose (MPV) fleet numbered 3,282 vessels with a combined total deadweight of 29.7 million tonnes and an average age of 15 years. The vast majority of these vessels are classed as simply MPV, but almost 40% of the fleet (in DWT terms) have enhanced lift capacity and are classed as project carriers.

Over 70% of vessels are below 10,000 DWT but the average DWT is rising: in 1990 it was “just” 6,400 DWT, in 2000 it was 8,000 DWT, in 2010 13,400 DWT and the vessels delivered so far in 2014 have an average tonnage of 15,680 DWT. Within each deadweight sector there are some clear preferences for vessel type. In the smallest sector of the fleet (below 10,000 DWT), just 16% (in DWT terms) are classed as project carriers, while in vessels over 10,000 DWT, some 58% are classed in this way.

More interestingly is how the newbuildings being delivered are moving towards the PC design. Over the last ten years over 50% of the vessels delivered each year have had enhanced lift, with 68% of 2013 deliveries falling into this bracket. The orderbook at the start of September amounted to 130 vessels totalling 2.38 million DWT, representing just 8% of the current fleet. The 10-15,000 DWT sector is the most popular in terms of number of vessels being built, comprising 37% of the orderbook, and it is here that the most activity has been seen so far this year. While the vessels on the orderbook have few details, it is possible to see that over half of this sector has enhanced lift capacity.

Interestingly, while vessels over 20,000 DWT are still popular for new investment, the trend is not towards larger cranes in these sizes, with most of the vessels over 35,000 DWT having lift capability of less than 100 tonnes. However, the main point about the MPV orderbook is that it remains subdued. Although ordering has been steady over the past few months, it is at vastly reduced levels, meaning that fleet growth will remain subdued.

Newbuilding orders and deliveries have continued to be lacklustre over the year (apart from a large deal from Nordana for four 12,100 DWT premium project carriers, i.e. with an on-board lift of 500 tonnes) and

we expect that both will barely hit the 1 million DWT level this year. On the other side of the coin, demolition levels have been similarly low and in deadweight terms almost match delivery levels. They too will struggle to match the one million DWT predicted at the start of this year.

When we look at fleet development, we not only calculate projected demolition numbers but also look at the slippage rates for newbuildings, to ascertain a more realistic delivery schedule, and also gauge future newbuilding ordering. We calculated that some 25% of the 2013 orderbook was not delivered with its original dates; however we expect that figure to fall over the coming year as new orders remain subdued.

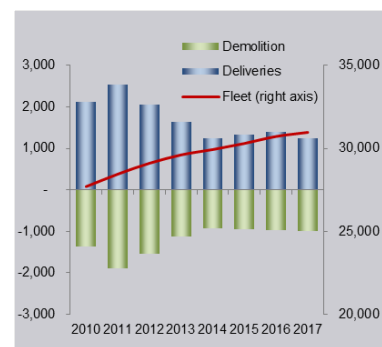
If we take all our assumptions for slippage, newbuilding and demolitions, we arrive at a fleet development as shown in Figure 2. This is for the total fleet and shows a growth level of just 1% per year over the period shown. However, if we split the fleet into simple MPV carriers and project carriers, we get a much clearer idea as to where the growth and investment really is with this fleet. Over the forecast period Drewry expects the so-called “simple” MPV fleet to decline by about 1% per year, as most of the new investment is made in project carriers. This section of the fleet is expected to grow by over 3.5% over the forecast period.

Market outlook

Looking at the supply-demand balance for this sector and the growth in the fleet versus the growth in demand, it is worth noting that the effective fleet takes into account the expected productivity gains from the newbuildings delivered each year. The presumption is that each newbuilding deadweight tonne is 6.6% more productive than each scrapped tonne. The expectation is that fleet growth will average a small but steady growth of just 1% per annum to 2017, with a slight uplift towards the end of the period shown.

Meanwhile, the positive scenario for demand for this sector is also apparent. The declining volumes seen over recent years are expected to bottom out in 2014, with positive increases thereafter. Over the forecast period, the effective demand for this fleet is showing a very healthy growth rate of around 2.5% a year.

Figure 2: Suggested MPV Fleet development to 2017 ('000 DWT)



Source: Drewry Maritime Research

It is still our belief that improvements in rates is still some way off, and unlikely to show significant movement until the Handy market returns to a more even keel.

There are still a number of challenges facing both owners and EPCs in 2014 and beyond.

- 1) Overcapacity in the bulk and container sectors is a challenge for the profitability of those sectors and the main reason for them seeking market share elsewhere.
- 2) The majority of the fleet improvement is in the project carrier sector, which is highly dependent on project cargo and steel demand.
- 3) The IMF has downgraded its forecast specifically for Brazil for 2014. The suggestion is that the growth in Latin America that should be led by Brazil, on paper may not be the case for the short term.
- 4) A number of carriers have announced plans for joint ventures or pool creation. Consolidation has long been mooted as the one way this sector will survive the worst of the market forces, and Drewry will be watching these new developments with interest. ■■

Editor's Note: The above article is taken from the latest Drewry Multi-purpose Shipping Market Review and Forecast. A year's subscription is priced at GBP 2,295, which includes the annual market review and quarterly forecast reports, published 9 December. Subscribers will also have a series of webinars and presentations from Susan Oatway, the editor of the report, throughout the year. All enquiries to oatway@drewry.co.uk

China: The new silk road, oil transparency, free trade agreements and pollution

China's "21st-Century Maritime Silk Road"

Beijing has announced plans to build roads, pipelines, railways and ports in a bid to transform the sleepy frontier crossing into an international railway, energy and logistics hub for a "Silk Road Economic Belt", which includes an Asian-Pacific free-trade deal, a USD 50 billion Asian Infrastructure Investment Bank and a USD 40 billion Silk Road Fund.

It is understood that the fund, overseen by Chinese policy banks, will primarily be used to revive intercontinental land routes and develop maritime links to expand commerce. More policies will be rolled out soon to encourage Chinese lenders to finance infrastructure in countries along the route connecting China to Europe.

Mr. Xi Jinping, the Chinese President, called for the building of a maritime trade corridor (see map) connecting the Pacific Ocean to the Baltic Sea and linking East Asia to South Asia and the Middle East to serve a combined market of some three billion people, which includes Sri Lanka, Kenya and Greece, along with a goal of expanding bilateral trade with Southeast Asia to USD 1 trillion by 2020—more than double its level last year.

Firms such as China Merchants Holdings, China Railway Construction Corp, COSCO Pacific and China Communications Construction Company have built or manage about 10 ports and have offered investment in at least five rail projects in Kyrgyzstan, Kenya and elsewhere. China's Exim Bank financed 85% of the cost of the USD 361 million first phase of Sri Lanka's Hambantota Port, which was constructed by China Harbour Engineering. A Chinese-Turkish consortium led by China Railway Construction built the USD 4 billion Ankara-Istanbul high-speed rail line in Turkey.



The new silk road

Promoting the shipping industry

China's Ministry of Transport (MOT) is working on various policies to modernise the shipping sector in an effort to increase the market share for Chinese shipping companies. MOT recently set out plans to implement further guidance to promote what it describes as the healthy development of the shipping industry, as well as announcing plans to try and boost foreign investment in the Shanghai Free Trade Zone. The nation is to encourage foreign companies to set up sole proprietorship shipmanagement companies, joint venture shipping companies and crew agencies, and will also support Chinese shipping companies to participate in foreign investment and multinational operation. Middle, small-sized and private shipping companies' co-operation and development will also be supported.

Efforts will be made to allow the Shanghai Pilot Free Trade Zone to lead the way in institutional innovation. As per the plan, the ministry will evaluate and improve the policy to eliminate old transport ships and single

hull tankers and encourage the development of energy-saving, environment-friendly and high-efficiency ships. In addition, the market pricing system at ports will be promulgated in the near future. Apart from that, China also encourage mergers and private investment as well as developing its cruise industry. Finance and insurance institutions would be asked to increase support for the shipping industry to help promote the development of the country's ship leasing and insurance sectors, with the aim of achieving results by 2015.

Transparency on oil reserves

China is lifting some of the secrecy around its stockpiling of oil reserves, as it disclosed for the first time that the first phase of its strategic petroleum reserves contains about 91 million barrels. The disclosure in early November follows a pledge to provide regular updates on the size of its emergency stockpile. It is believed that greater transparency on the reserves of a major oil consumer like China is necessary for traders as well as for market stability.



China's National Bureau of Statistics said that phase one of its strategic petroleum reserves contained 12.43 million metric tons of oil, or about 91 million barrels, across four sites. The statement didn't disclose the size of its second or third phases of reserves. China intends to construct facilities that can hold up to 500 million barrels of oil by 2020. In addition to strategic government stockpiles, Chinese companies have also been building commercial stockpiles to hedge against price swings.

Free trade with South Korea and Australia

China and Korea have signed a "substantial conclusion" to a free trade agreement. The two countries plan to set up a free trade zone to promote bilateral trade, and an official agreement is expected to be signed before the end of this year. China is South Korea's largest trading partner and their bilateral trade grew to USD 228.9 billion in 2013.

Meanwhile, negotiations on the China-Australia FTA are also underway. The negotiations have been comprehensive and aim for a good balance of interests. The agreement will allow the two countries to fully utilise their respective economic advantages, boost win-win co-operation, bring mutual benefits and promote the in-depth development of bilateral economic and trade ties. The agreement will cover more than 10 areas, including trade in goods and services, investment and trade rules, as well as such subjects as e-commerce and government procurement. The agreement notably suggests that coking coal imports into China from Australia are due to be exempted from the newly imposed import tariffs. However, the vital thermal coal trade from Australia into China was left out of the agreement, so is feeling the full force of the regulation.

China's coal policy and its possible impact It is a fact that China gets about 70% of its

energy from this fossil fuel. In 1988, China's annual coal consumption exceeded 1 billion short tons, which rocketed to about 4 billion tons last year. Amid its political plan of economic transformation, China recently issued a string of regulations which were unfortunately designed to protect its struggling domestic coal industry.

However, some experts believe that the policy changes will not mean a decline in coal use. According to the China Resources Quarterly Report published by the Bureau of Resources and Energy Economics (BREE) and Westpac, China imported 13.4 million tonnes of metallurgical coal during the third quarter, down 26% on the previous quarter and down by 31% on the previous corresponding period. Weaker steel prices and tighter access to credit have prompted several metallurgical coal producers to shift their focus to other markets, as Chinese steel mills reduced their reliance on imported coal.

In terms of thermal coal, China has made several policy announcements that may affect the import of coal for power generation. This September's announcement of restrictions on the consumption of thermal coal with high ash and sulphur content from 1 January 2015, was expected to have a limited effect on that country's imports and was more likely to affect domestic coal. In mid-October, China also implemented a tariff of 6% on thermal coal imports to support the domestic industry. China's imports of thermal coal (including lignite) declined by 18% year-on-year during the third quarter, to 49.7 million tonnes.

Hong Kong to get tough on port pollution

China's busy ports have failed to regulate emissions of sulphur oxide and other pollutants mostly from cargo ships, although

they're the biggest source of air pollution in port cities such as Hong Kong, according to a new report issued by the US-based Natural Resources Defense Council, who concluded that maritime activity accounts for half of all sulphur oxide emitted in Hong Kong and about a third of all nitrogen oxide.

Similarly, such activity makes up about two-thirds of sulphur oxide emitted in the neighbouring port of Shenzhen. Despite their environmental toll, only a few Chinese cities such as Hong Kong and Shenzhen have moved to reduce port emissions, mainly through financial incentives. The national government is not enforcing emission standards. Seven of the world's 10 busiest container ports are in China. Chinese officials have pledged to crack down on the pollution plaguing many of the country's cities, but so far have not looked closely at port emissions.

Hong Kong, however, is contemplating imposing tougher controls that would require ocean-going ships to switch to cleaner fuels while berthed in the city's port. Ocean-going ships are allowed to burn fuel with sulphur levels 100 to 3,500 times higher than that permitted in diesel-powered road vehicles. As a result, a single container ship plying the coast of China emits as much diesel pollution as a half-million new Chinese trucks. The cleaner fuels, however, can cost 48% more than dirtier bunker fuels. Switching fuels could also require additional training for ship crews. (ZW) ■

Editor's Note: This report has been produced in co-operation with Reuters and WSJ.



Fuel dramas: present and future

This year's Autumnal foliage in many parts of the world coincided with the season of abundant news relating to ship fuel emanating from Asia, some encouraging and some, frankly speaking, shocking.

Asia and Europe: Harmonised future LNG bunkering standards

One might consider this a “days of future past” situation. In mid-October, representatives from the Maritime and Port Authority of Singapore (MPA), the Antwerp Port Authority, the Port of Rotterdam and the Port of Zeebrugge participated in a Liquefied Natural Gas (LNG) bunkering focus group discussion.

The four port authorities discussed harmonising the technical standards and procedures, and examined risk management, emergency procedures and crew competency standards for international shipping.

Mr. Andrew Tan, Chief Executive of MPA, stated, “As an alternative fuel, the shipping industry is looking to LNG as a cleaner marine fuel to meet international regulations. Given the international nature of shipping, we are excited to work with the Antwerp Port Authority, Port of Rotterdam and Port of Zeebrugge, to harmonise the global LNG bunkering standards. We have made good progress in our discussions and will continue with our efforts to prepare the Port of Singapore to be ready for LNG bunkering in the near future.”

Mr. Eddy Bruyninckx, CEO of the Port of Antwerp, said, “Antwerp has the ambition to be the most sustainable port in the Hamburg-Le Havre range. Being sustainable is not a trend for the port of Antwerp, it has become a way of managing our port. Our steps towards the creation of the possibility for ships to bunker LNG in our port form part of this sustainable management.

Already in 2011 we expressed our strong belief in LNG as a fuel for the future. In the past years we developed and published procedures for the safe bunkering of LNG as a shipping fuel, we looked into the possibility to build a LNG bunker ship and we are currently in the process of tendering a candidate to build and operate a LNG bunker station for barges. The European Union is supporting us, but of course the co-operation with other ports with an outstanding knowledge and expertise in LNG, like Rotterdam, Singapore and Zeebrugge are of great importance to successfully complete the pioneering work we are doing within the bunkering of LNG as a fuel for ships.”

Mr. Ronald Paul, COO Port of Rotterdam Authorities, added, “As the most important bunker port of Europe we strongly believe in the transition from heavy fuel oil to LNG as fuel for the shipping industry. Together with other ports like Amsterdam, Zeebrugge and Antwerp we work on the conditions to realise that. The European Union supports us with financial aid for general facilities. It is good to look further than the European border and harmonise also global LNG bunkering standards. The ports of Rotterdam and Singapore have a long tradition of partnership when it goes about environmental shipping issues.”

Mr. Joachim Coens, CEO of the Port of Zeebrugge, pointed out that the “Port of Zeebrugge has 27 years of LNG experience, the Fluxys LNG terminal being one of the major European LNG hubs. LNG is without any doubt one of the best possible options to cope with the forthcom-

ing IMO emission limits. Zeebrugge aims to play a lead role in the evolution of LNG fuelling. At this moment we are adjusting the port regulations, an important step in establishing LNG bunkering operations in Zeebrugge. Apart from this theoretical framework, we have already worked together with several parties who are part of the elaboration of different kinds of small scale LNG projects connected to Zeebrugge in one way or another.”

Over the years, MPA has been collaborating with industry partners and stakeholders on joint industry projects on LNG bunkering in Singapore. In 2010, MPA embarked on a joint industry project led by DNV Technology Centre to assess the commercial viability for LNG. In 2013, MPA signed a Memorandum of Understanding with the Antwerp Port Authority and the Port of Zeebrugge to harmonise LNG bunkering standards. In 2014, MPA and its appointed consultant, Lloyd's Register, completed its study on the Technical Standards and Procedures for LNG bunkering in the Port of Singapore. Following the study, MPA is working closely with the industry and stakeholders to develop a Technical Reference for LNG bunkering in Singapore.

The Port of Singapore recorded bunker sales volume of 42.5 million tonnes in 2013, retaining its position as the world's top bunkering port. Singapore's strong performance in bunker sales can be attributed to its strategic location at the crossroads of international trade and the industry structure that results in competitive bunker prices and assured quality and safety standards.



Image by Craig Mayhew and Robert Simmon, NASA GSFC

Whilst BIMCO welcomes these efforts, the reality of the situation is that the LNG bunker market will be limited for some time, as today there are fewer than 200 merchant ships either in service or on order which are LNG-ready.

Minimising bunker supply disruption

With regard to the recent announcements made by OW Bunker A/S, the MPA has assessed that there will be minimal disruption to bunker supply in the Port of Singapore. There are currently more than 60 bunker suppliers in Singapore, and OW Bunker Far East (Singapore) Pte Ltd accounted for less than 3% of the 42.6 million metric tonnes supplied in Singapore in 2013.

MPA is working with the industry and the industry associations to mitigate any potential impact on bunkering operations in Singapore.

To address any concerns from the industry, MPA is working with the Singapore Shipping Association (SSA) and the International Bunker Industry Association (IBIA) to conduct dialogue sessions. MPA will also work closely with the various stakeholders to ensure that bunkering operations in Singapore continue as smoothly and normally as possible.

At a related industry dialogue held on 13 November 2014 with close to 50 companies from the Singapore Shipping Association (SSA), it was established that there had been no report of disruption to bunker supply and bunkering operations in Singapore so far.

Co-organised by the Maritime and Port Authority of Singapore (MPA) and SSA, the

participants gathered for updates and discussed ways to minimise any impact on the local bunkering scene following the recent announcements made by OW Bunker A/S.

The attendees were advised to carefully inspect their contractual obligations, and to work closely with their stakeholders to avoid or minimise disruption in their operations.

“The bunkering industry here is a well-regulated one. While I urge my members to seek professional and legal advice as necessary, I also hope that those affected by this event would remain calm and not resort to knee-jerk reactions which may rock the stability and reputation of Singapore’s bunkering industry. My Association will be working closely with MPA to ensure that there would not be any unnecessary disruption in bunker supply and operations here,” said SSA President Mr. Patrick Phoon.

MPA Chief Executive Mr. Andrew Tan, added “This has been a useful session for the shipping and bunkering community to come together to understand the current situation and to discuss practical steps forward. MPA will continue to work closely with SSA to manage the situation. We will also work with our licensed bunker suppliers to minimise any disruption to bunkering operations in Singapore.”

To further minimise risk, buyers should refer to the list of MPA licensed bunker suppliers that can be found on the MPA website. This and other related links can also be found on the BIMCO website.

BIMCO in Manila

BIMCO’s Asia Liaison Officer, Thomas

Timlen, appeared on two panels during the Asia Pacific Manning and Training conference in Manila on 26 and 27 November. The initial keynote panel included Peter Hinchliffe, Secretary General of ICS, Kuba Szymanski, Intermanager Secretary General and Intertanko’s Tim Wilkins, Regional Manager Asia-Pacific, Senior Manager, Environment, all addressing the ways in which industry associations work on behalf of their members to manage new regulations.

The related BIMCO presentation highlighted the BIMCO MLC clauses, illustrating how use of the clauses in the CREWMAN, SHIPMAN and SUPPLY-TIME contracts serves well to distribute MLC responsibilities, to enhance compliance and to maintain favourable living and working conditions for seafarers.

The final panel of the conference focused on eLearning. Panellists included Capt. Pradeep Chawla of Anglo Eastern, Adrien Luntao of Teekay Shipping, and Roger Ringstad of Seagull. The related BIMCO presentation illustrated how BIMCO’s BeDP programme promotes the concept of a maritime career spanning the time at sea and future opportunities ashore, as the BeDP is an opportunity for seafarers to hone their skills and knowledge of the commercial side of the business.

The Asia Pacific Manning and Training conference, produced by Informa, has grown over the years with over 500 delegates attending in 2014 and an impressive number of exhibitors. (TT) ■■

EU: MRV legislation, sanctions, sustainable shipping, ship recycling, piracy and port policy

EU MRV Legislation proposal

EU co-legislators reached an informal agreement on 18 November 2014 on the Commission proposal for a Regulation on the monitoring, Reporting and Verification (MRV) of CO₂ emissions from maritime transport. The agreement paves the way for a European MRV system that will become operational as of 2018, applying to ships above 5,000 GT arriving and departing from EU ports, regardless of their flag and ownership.

The Regulation is meant to be a stepping stone towards a global MRV instrument, which is currently being discussed at the International Maritime Organization (IMO).

Apart from data on CO₂ emissions and distance sailed, the negotiators agreed that the Regulation will also require ships to report cargo-related information. Whilst the inclusion of cargo-related information allows the measurement of energy efficiency of vessels, there are concerns regarding data reliability and confidentiality as well as reporting responsibilities and obligations. Notably, provisions on international alignment were further strengthened.

The trilogue agreement on the EU MRV Regulation still needs formal endorsement from the European Parliament and Council of Ministers. This process will not entail further changes to the specifics of the agreement and is expected to be finalised by early 2015.

BIMCO believes this proposal will have no genuine environmental impact, will create a lot of red tape, and risks having a negative bearing on the negotiations in IMO.

EU sanctions against Russia

On 12 September, the sanctions against

Russia entered into force, directly linked to the illegal annexation of the Crimea and destabilisation of Ukraine. They include strengthened restrictions on Russia's access to EU capital markets, a ban on EU nationals and companies providing loans to five major Russian state-owned banks, new restrictions on the trade in bonds, equity or similar financial instruments, issued by the same banks, with restrictions extended to some major Russian defence and energy companies. Twenty-four persons have been added to the list of those subject to a travel ban and an asset freeze, bringing the total to 119, as well as 23 entities.

So far, the implementation of the sanctions has caused problems to European operators, as the provisions of the legal texts are unclear and lead to uncertainty. To remedy this situation, the European Commission has announced that it will issue guidelines that would clarify certain aspects of the sanctions.

European Sustainable Shipping Forum (ESSF)

The ESSF was established in September 2013 with the aim of assessing the compliance requirements of the MARPOL Annex VI 0.1% sulphur content in marine fuel (as translated into EU law through the Sulphur Directive), which is due to enter into force as from 1 January 2015 in the Sulphur Emission Control Areas (SECAs). The Forum is chaired by the European Commission and operates with a plenary session and six non-permanent Technical Subgroups.

The various ESSF Technical Subgroups are already on their third round of meetings. The next ESSF Plenary will take place on 4 December. The meetings essentially focus on specific recommendations by the various Technical Subgroups to the Plenary. Whilst the ESSF has identified the needs

and ways forward for solving the issues in order to enable smoother compliance/implementation with the requirements of the EU Sulphur Directive for both ship owners and member states, it has become clear that on 1 January 2015, the majority of issues will still be pending. This should also be related to the various levels of implementation and transposition of the Sulphur Directive requirements in member states' national laws.

Ship recycling

The EU Ship Recycling Regulation entered in force on 30 December 2013. However, the actual application of the flag-neutral obligation to have an Inventory of Hazardous Materials (IHM) on board ships visiting European ports and the requirement for EU Flag vessels to be recycled in EU-approved recycling facilities will apply at different stages as from 2016.

The objective of the Regulation is to reduce the negative impacts linked to the recycling of EU-flagged ships, especially in South Asia, without creating unnecessary economic burdens. It brings into force the requirements of the 2009 Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, therefore contributing to its global entry into force.

The European Commission (DG Environment) is currently completing work on FAQs on requirements and procedures for listing of facilities located in third countries on the EU list of ship recycling facilities. This FAQ document aims at facilitating and initiating applications of recycling facilities for inclusion in the EU list. However, the shipping industry has repeatedly voiced its concerns regarding these FAQs, since it will rather dis-incentivise any dismantling facilities situated in third countries



to upgrade their standards in the upcoming years. This could lead to the creation of a two-tier market and impede the ratification and entry into force of the Hong Kong Convention by causing confusion and mistrust amongst stakeholders and States. The formal application procedure is due to start by the end of February 2015 towards adoption of a first version of the EU list by the end of 2015.

In addition, the European Commission has recently undertaken a study “on the feasibility of a financial instrument to facilitate safe and sound ship recycling” as required by the EU Ship Recycling Regulation.

EU NAVFOR Atalanta

EU Member States have decided to extend the duration of EU NAVFOR Atalanta, the EU mission in the Gulf of Aden to combat piracy, until 12 December 2016, which is highly appreciated by BIMCO.

The mission’s mandate has also been extended to include the following tasks: contributing to the EU’s integrated approach to Somalia and the relevant activities of the international community, thereby helping to address the root causes of piracy and its networks; collecting data on pirates and fishing activities to be circulated via INTERPOL and EUROPOL; monitoring fishing activities off the coast of Somalia and finally assisting, when possible, EUCAP NESTOR, EUTM Somalia, the EU Special Representative for the Horn of Africa, and the EU Mission in Somalia.

EU ports policy

On 23 May 2013, the European Commission adopted a proposal for a Regulation on market access to port services and financial transparency of ports.

After lengthy discussions in the European

Parliament on the text, Mr. Fleckenstein, the Member of the European Parliament responsible for the file, decided in March 2014 to postpone discussions until after the European elections of May, as the issue was politically too sensitive to vote on. Mr. Fleckenstein was re-elected and is expected to take up the file again early 2015.

In the meantime, over the Summer, the member states of the EU have discussed the proposal. The European Council adopted a General Approach on 8 October 2014, which weakens the provisions of the original proposal and agreed to change the text in such a way as to leave much more discretionary powers to EU member states.

With the debate expected to re-open in the EP in early 2015, we are again entering an important phase. Ultimately, the EP and member states will have to agree on a common text.

Even though the proposal has been watered down a lot it can still add value regarding some specific elements and for some specific member states or sectors, and must be seen as an element of a broader ports policy.

Transatlantic Trade and Investment Partnership (TTIP)

The 7th round of negotiations took place in the US at the end of September. Maritime transport was only briefly touched upon.

ECSA provided the European Commission with more concrete information regarding the European shipping industry’s position as input for the negotiations. The next round will be in January 2015.

On 16 November, the United States and the attending European leaders at the G20 Summit adopted a joint statement on the TTIP negotiations with the view to

providing a new political impetus to the talks, which have somewhat slowed, in part due to the transition to a new European Commission.

US Trade Representative Michael Froman will meet with EU Trade Commissioner Cecilia Malmstrom in Washington in December for a more in-depth discussion about the future of TTIP, where they will carry out a proper “stock-taking exercise” that was originally planned to take place last October with former Commissioner De Gucht.

Canada-EU Free Trade Agreement (CETA)

The Free Trade Agreement between the EU and Canada was finalised in August 2014. For the first time in an FTA the EU managed to get a – conditional – opening of the feeder market. Also, the markets for dredging and the movement of empty containers were opened up.

It took several weeks of negotiations at the highest level to agree on this element. While the text must still pass the legal review and the ratification process, it was already published on the EC website.

Provided both the Council and European Parliament approve the agreement in 2015, it could enter into force in 2016. This also depends on Canadian law makers approving the text. (CH) ■■

Editor’s Note: This report has been produced in co-operation with the European Community Shipowners’ Associations (ECSA).



US: Elections, sulphur limits, fuel compliance and ballast water

Impact of the US election on maritime issues

As expected, the Republicans won control of the US House of Representatives and the US Senate. Generally speaking, the Republican agenda is far more pro-business and is more aligned with business interests in reducing the ever growing number of statutes (and implementing regulations) that impact business.

However, it must be noted that President Obama (who is a Democrat) has veto power over any legislation which is passed in the House and Senate and sent to him for signature and thus any bills must have sufficient votes to overcome a Presidential veto to be enacted. Also, taking into account a number of issues seen as more pressing by the Congress (immigration, budget, global terrorism), it is not expected that any maritime-related legislation currently pending in the Congress will be enacted in the few remaining days of this Congressional session.

One final fact worth noting is that with the shift of the Senate to a Republican majority, the Chairs of all Senate Committees and Sub-committees will shift from Democrat to Republican. This may be very relevant for the two key Senate Committees that deal with maritime issues: The Commerce Committee and the Environmental and Public Works Committee.

It is as yet unknown who will take the Chair of either committee although generally, the ranking minority members from the current Congress are normally in the queue. What is known is that Senator Boxer will most likely take on the position of Ranking Minority in the Environment and Public Works Committee and the previously ranking minority member, Senator Vitter from Louisiana, may be at the top of the list to take over the Chair of this very impor-

tant Commerce Committee. Time will show if this will create more momentum on important shipping-related issues such as the ratification of the Rotterdam Rules and a proposals to change the ballast water rules in the US (more on this below).

Enforcement of 0.1% sulphur limit 1 January 2015

Since the implementation of the North American Emissions Control Area (ECA), the US Coast Guard (USCG) and the US Environmental Protection Agency (EPA) have been operating under a Memorandum of Understanding (MoU) where USCG inspects for MARPOL Annex VI/ECA compliance as part of its comprehensive Port State Control programme. With the implementation date of 1 January 2015 at which time 0.1% sulphur fuel is required in the ECAs, USCG and EPA have again reiterated their collaborative agreement as contained in the MoU as regards ECA enforcement inspections and enforcement policies. A copy of their inspection and enforcement protocol may be viewed at <http://www2.epa.gov/enforcement/epa-coast-guard-protocol>.

While this protocol itself represents no significant changes in the inspection and enforcement processes which have been in place over the past several years, recent discussions with USCG and EPA suggest that EPA will be playing a more active role in the ship inspection process including accompanying USCG Port State Control boarding parties on a random basis. This increased activity level is a result of the EPA's fundamental belief that the low sulphur fuel requirements must be robustly enforced to avoid the situation where non-compliant vessels would receive a significant competitive advantage if they had not purchased compliant fuel.

All this will be especially true with the 1

January 2015 requirement for the use of 0.1% sulphur fuel where the price differential between compliant fuel and higher sulphur fuel will be even more significant than is the case with the current 1% sulphur fuel requirement. BIMCO and CSA are very supportive of this concept and have conveyed this message to both USCG and EPA.

As noted above, there are no changes in the enforcement protocol or the reporting processes for ships inbound with non-compliant fuel but with the increased involvement of EPA at the ship level, it is expected that non-compliance events will be even more closely scrutinized than is currently the case. Below is included information on this.

Distillate fuel for North American ECA Compliance

The EPA has published a response to a question that has been forwarded to them numerous times in the past several months relative to the definition of "available" fuels, essentially mandating the use of ultra-low sulphur fuels (even lower than the 0.1% sulphur requirement) if 0.1% sulphur fuel is not available. The question and response are as follows.

Question: Does the US Government require the use of lower sulphur distillate (such as 15 ppm distillate fuel) for compliance with the 0.10% m/m ECA fuel sulphur standard, which begins 1 January 2015, if no other compliant fuel is available?

Answer: Yes. Beginning 1 January 2015, under Annex VI, the North American and United States Caribbean Sea ECAs require that the sulphur content of the fuel oil used on board ships operating in these areas may not exceed 0.10% m/m. The United States expects that a ship will use any compliant fuel that is available containing no more than 0.10% m/m sulphur content, includ-



ing using distillate fuel or marine gas oil with a much lower sulphur content, even at or below 15 ppm sulphur. In the instance that engine operating requirements, or fuel parameters such as flashpoint or viscosity, are a concern with the use of a lower sulphur marine distillate, please see EPA's Fuel Oil Non-Availability Report guidance. Fuel oil that complies with the 0.10% m/m sulphur standard is expected to be available for ships that plan to operate in the North American and United States Caribbean Sea ECAs.

EPA filing problems for ships with non-compliant fuel

The US Environmental Agency (EPA) has recently expressed continuing concerns about the inconsistencies of filings for ships inbound to the US with non-compliant fuel regarding sulphur (0.1% in 2015). It appears that there continues to be confusion surrounding what should be included in these reports and how the reports should be filed. To avoid problems in relation to Port State Controls it is important to do this the correct way. There are two very different scenarios which we believe are causing the confusion.

Scenario 1: Ship attempted to purchase compliant fuel but was unable to do so

In this scenario, the ship owner made attempts to purchase ECA compliant fuel prior to entry into US waters. The ship received a bunker delivery note (BDN) that clearly notes the fuel does not meet the sulphur cap. In this case, the ship must file a fuel oil non-availability disclosure (FOND) via EPA's Central Data Exchange. Instructions for filing a FOND can be found at <http://www2.epa.gov/enforcement/marpol-annex-vi> under the section entitled "Low Sulfur Fuel Non-availability".

Scenario 2: Ship purchased ECA compliant

fuel but post load testing indicates that the sulphur level exceeds 0.1%

In this scenario, the ship should not file a FOND but should file a Notice of Protest with the bunker supplier. Although not required by statute or regulations, EPA is requesting that these situations be brought to their attention via an e-mail to marine-eca@epa.gov which includes a copy of the BDN, a copy of the Notice of Protest and all relevant information relating to the bunker supplier, the ship and the specifics of the bunker load in question. It is expected that EPA will work with the jurisdiction in which the fuel was purchased where chronic and repeated problems are occurring.

Uncertainty over proposed US ballast water regulation

As noted in previous reports under, the Chairman of the House Coast Guard and Maritime Transportation Sub-committee introduced a proposal for a bill on changing the US ballast water rules back in September (HR 5609 - Vessel Incidental Discharge Acts).

The bill is substantively identical to a bill (S 2094) that was introduced in the Senate in March 2014. Both bills are still technically "active" with the Senate bill awaiting a floor vote and the House bill awaiting committee action. The US Chamber of Shipping, BIMCO and other associations will keep pressing for enactment, which will require another run at this issue in the next Congress.

Faced with the problems of different rules on ballast water being applied by two US Government Agencies in the US, better rules would be a great step forward. This requires the US Congress to work together and solve a range of issues which would facilitate US trade and shipping, serving

US ports via a more consistent and nationwide set of ballast water rules in one of the most important countries to call for international shipping.

Procedure for filing VGP Annual Reports due 28 February 2015

The EPA Office of Water has recently distributed widely a reminder about the annual report which is required under Part 4.4.1 of the VGP.

The reminder notes that the electronic annual reporting feature of the Electronic Notice of Intent (eNOI) system is now operational and must be used in preparing and submitting the required annual report unless a waiver is requested and granted to submit the annual report in hard copy format. The annual report for operating year 2014 is due by 28 February 2015.

The Annual Reporting feature is a component of the existing eNOI system and uses the same login and similar technologies and practices. Users will be able to prepare and submit annual reports either one at a time for individual vessels or in a batch for multiple vessels (e.g., a combined annual report).

Any users required to monitor their gray water, bilge water, ballast water, or exhaust gas scrubber wash water and report the results of that monitoring as part of their annual report will be able to do so using the new "Batch Annual Report Spreadsheet with Discharge Monitoring Reports (DMRs)" feature of the system. (MLU) ■■

Editor's Note: This report has been produced in co-operation with the Chamber of Shipping of America (CSA).

T/C – Failure to pay hire

Charter party – NYPE form – Owners suspending performance of time charter for unpaid hire – Whether vessel off-hire – Whether owners required to serve anti-technicality notice – Whether owners entitled to suspend performance – Whether owners entitled to exercise lien on cargo.

The vessel was chartered on an amended NYPE form for a trip from the United States to China with a cargo of coal. The charter party provided:

*“11. Hire Payment
(a) Payment*

... Failing the punctual and regular payment of the hire, or on any fundamental breach whatsoever of this Charter Party, the Owners shall be at liberty to withdraw the Vessel from the service of the Charterers without prejudice to any claims they (the Owners) may otherwise have on the Charterers.

At any time after the expiry of the grace period provided in Sub-clause 11(b) hereunder and while the hire is outstanding, the Owners shall, without prejudice to the liberty to withdraw, be entitled to withhold the performance of any and all of their obligations hereunder and shall have no responsibility whatsoever for any consequences thereof, in respect of which the Charterers hereby indemnify the Owners, and hire shall continue to accrue and any extra expenses resulting from such withholding shall be for the Charterers' account.

[Lines 139 to 158.]

(b) Grace Period

Where there is failure to make punctual and regular payment of hire due to oversight, negligence, errors or omissions on the part of the Charterers or their bankers, the Charterers shall be given by the Owners three (3) clear banking days (as recognized at the agreed place of payment) written notice to rectify the fail-

ure, and when so rectified within those three (3) days following the Owners' notice, the payment shall stand as regular and punctual.

[Lines 159 to 164.]

Failure by the Charterers to pay the hire within ... days of their receiving the Owners' notice as provided herein, shall entitle the Owners to withdraw as set forth in Sub-clause 11 (a) above. [These words, which appeared as lines 165 to 166 in the standard form of the NYPE 1993 charter party, had been deleted in the present case.] ...

23. Liens

The Owners shall have a lien upon all cargoes and all sub-freights and/or sub-hire for any amounts due under this Charter Party, including general average contributions, and the Charterers shall have a lien on the Vessel for all monies paid in advance and not earned, and any overpaid hire or excess deposit to be returned at once ...”

The vessel was delivered into charterers' service on 20 May. Towards the end of the voyage an instalment of hire became payable on 19 July. The charterers made no payment on that date as they were seeking to finalise the overall hire statement with the owners.

On 30 July the charterers gave notice of redelivery for 14 August. On 31 July the owners sent the charterers a Provisional Final Hire Statement, based on an estimated date of redelivery of 14 August, which showed an amount of USD 1,914,875.80 as due to owners. The owners said in their accompanying message:

“Please do note that hire is already due so until hire payment is paid LOI cannot be issued neither will cargo be allowed to be discharged”.

The owners sent a further reminder on 2 August, repeating that, until they heard from the charterers, no LOI would be entertained and discharge of the cargo would not be allowed.

On 2 August the charterers replied saying:

“Sorry for chtrs delay payment. pls kindly be advised that chtrs have been tendered the payment application to finance dept already, but their manager was on business trip last two days, and expect to back to office tomorrow, believe the payment will be arranged once he come back, bank slip will be submitted once available.”

On 6 August the owners responded, saying that they could not accept such reasons and that the charterers needed to arrange remittance until redelivery dates immediately as the hire was long due. The owners' message concluded:

“Without remittance please note vessel will be instructed to remain outside Chinese Territorial waters till such time hire is received covering owners till redelivery dates.”

Later that day the owners sent a further message saying:

“Charterers are herewith placed on notice for Hire Payment Default and till such time owners received full hire until redelivery dates vessel will be instructed remain outside Chinese Territorial waters and all time, risk expenses and delays will be on charterers' account”.

The owners sent a further reminder on 7 August and later that day ordered the Master “to remain/anchored outside Port Limit until further instructions” from the owners.

On 8 August the charterers paid further hire of USD 1,319,936.75, satisfying the hire due up to 11 August. That was based on their own revised provisional hire statement showing redelivery on 12 August. On 9 August the charterers paid further hire of USD 86,999.45. But on 10 August the owners issued a revised Provisional Final Hire Statement showing an amount due to them of USD 619,422.61. That was based on a revised redelivery date of 16 August, an increase in terms of hire of USD 75,614.58.

The charterers remained reluctant to pay, on the basis that they had a substantial claim against the owners in respect of the vessel’s failure to meet her speed and performance warranties.

Following an agreement that the charterers would pay into escrow “an agreed amount in respect of those sums which Owners contended were due and owing”, the owners ordered the vessel into berth and on 14 August she proceeded into the port of Longkou to discharge.

The charterers brought arbitration proceedings against the owners claiming that the vessel was off-hire during the entire period she spent at the anchorage; alternatively, that the owners were liable in damages in the like amount on the grounds that the owners had wrongfully deprived the charterers of the services of the vessel.

The charterers submitted that the owners were not entitled to suspend performance. The owners’ right of suspension (as opposed to withdrawal) arose only where the charterers’ failure to pay was “due to oversight, negligence, errors or omissions on the part of the charterers or their bankers”, and an anti-technicality notice had been given in accordance with clause 11(b) of the charter party.

The charterers’ failure to pay was not due to “oversight, negligence, errors or omissions”; it was deliberate in that they had withheld from hire an estimated sum as security for

their performance claim. Moreover, none of the owners’ messages constituted valid anti-technicality notices.

The owners denied the claim and counter-claimed a balance of hire of USD 375,610.85 in accordance with their Final Hire Statement, according to which the vessel was finally redelivered on 18 August. They said that they were entitled to suspend performance whenever hire was outstanding, without having to give an anti-technicality notice. The deletion of lines 165 to 166 of the charter party had the effect of removing the need for an anti-technicality notice before the exercise of the right either to withdraw the vessel or suspend her performance. Moreover, the owners were entitled to exercise the clause 23 lien by keeping the vessel outside the discharge port, pending payment of the sums due.

The charterers said that the owners were not entitled to exercise any right of lien. Its exercise was contingent upon the owners giving clear notice that a lien was being exercised, which did not happen in the present case.

Held, that there was some ambiguity in the deleted lines 165 to 166 having regard to the remainder of the provisions in clause 11, particularly the words “At any time after the expiry of the grace period provided in Sub-clause 11(b) hereunder and while the hire is still outstanding, the Owners shall, without prejudice to the liberty to withdraw, be entitled to withhold the performance of any and all of the obligations hereunder ...” in the second part of sub-clause 11(a). The tribunal considered that it was entitled to have regard to the deleted lines in its approach to the construction of clause 11 in general (*Mopani Copper Mines plc v Millenium Underwriting Ltd.* [2009] Lloyd’s Rep IR 158 referred to).

The owners had submitted that the deletion of lines 165 to 166 meant that they could withdraw the vessel or suspend performance whenever hire was outstanding, and without having to give any anti-technicality notice under clause 11(b). That submission would be rejected given that the provisions of clause 11(b) requiring owners to give a three-day anti-technicality notice where the

failure to make punctual and regular payment of hire was due to oversight, negligence, errors or omissions on the part of the charterers or their bankers, still stood. Whilst the tribunal could not accept the effect of the deletion for which the owners argued, it had difficulty in finding any effect that was relevant to the dispute. In the tribunal’s view, the meaning of the provisions of clause 11 remained unchanged by the deletion.

The key issue, then, was whether – in a case where it was common ground that the charterers’ failure to pay hire punctually and regularly was the result of a deliberate policy on their part – the right to suspend performance in accordance with the second part of sub-clause 11(a) was still available to owners.

The charterers had argued that the right to suspend performance arose only after the expiry of the grace period, as the opening words of line 153 – “At any time after the expiry of the grace period provided in Sub-clause 11(b) ...” – provided. The existence of the grace period was an indispensable requirement for the existence of the right to suspend. Since the grace period provision did not apply in the circumstances of the present case (because the withholding of hire was deliberate) the owners had no right to suspend.

The owners had argued that in a case where the grace period provided by clause 11(b) did not apply because the withholding of hire was deliberate, then the reference to the expiry of the grace period in the second part of sub-clause 11(a) was otiose in the sense that owners had the right to suspend performance at any time, provided always that hire was still outstanding. The nature of the charterers’ conduct relieved the owners of the obligation to give the three days’ notice for which sub-clause 11(b) provided.

The owners’ construction would be preferred. It was uncommercial – and therefore in the absence of clear words – unlikely that, in the case of charterers’ deliberate failure to pay hire in accordance with their charter party obligations, the parties should have agreed that owners would be deprived of the option to suspend performance and be left only with the right to withdraw the vessel from the charterers’ service. That was often

not a practical option where the ship had cargo on board and all the more so where she was arrived at or off her discharge port. Accordingly, the second part of sub-clause 11(a) was to be interpreted as if it read: "At any time after the expiry of the grace period, if any, provided in Sub-clause 11(b) ...".

Accordingly, on the facts of the present case, it was not a pre-condition of the owners' right to suspend performance under sub-clause 11(a) that they should have served an anti-technicality notice in accordance with sub-clause 11(b).

If, contrary to the tribunal's view, the giving of an anti-technicality notice was a pre-condition to the owners' right to suspend performance, the owners had not given the requisite notice. Given the requirements for an anti-technicality notice to be essentially in the form of an ultimatum, none of the

owners' communications of 31 July and 2 and 6 August 2012 met those stringent conditions. They were couched in general terms and made no specific reference to the grace period for which clause 11(b) provided.

Given the tribunal's conclusion that the owners were entitled to suspend performance pursuant to clause 11 it was not strictly necessary to address the issues that had arisen regarding the owners' exercise (or not) of a lien upon cargo under the terms of clause 23. However, in the tribunal's view it did not matter that, at the time in question, the owners did not expressly identify the legal remedy they were exercising, provided that their actions could be later characterised as an exercise of that remedy. In the tribunal's view, the owners' refusal to proceed into port and there discharge the cargo during the period 8 to 14 August amounted in effect to the exercise of a lien on the cargo. Whilst it was true

that the owners' communications of 31 July, 2 and 6 August did not use the word "lien" the importance lay in what the owners were doing, rather than in the words they used to describe their actions. They were withholding discharge and delivery of the cargo. That was sufficient notice that they were exercising a lien upon it.

Accordingly, the charterers' claim failed and the owners' counterclaim succeeded. ■■

Editor's Note: The above is a summary of a London Arbitration Award (No. 17/14) which appeared in Lloyd's Maritime Law Newsletter No. 909 of 10 October 2014 and which is reproduced by the kind permission of the publishers, Informa Law.

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FIO – Cargo damage – Owners’ liability

The M/V *Akili*: The Second Circuit rules that a Clause Paramount supersedes the “Public or Private Carriage” Distinction, and exposes a “Free-In-And-Out” trap for the unwary.

A decision in December 2012 by the United States Court of Appeals for the Second Circuit in New York reflects a change in the Court’s standard of reviewing US Law governing charter parties and bills of lading. Though relatively unnoticed so far, the Court’s decision constitutes controlling precedent for cases in the Second Circuit and thus deserves the attention of those who charter vessels or insure the related risks.

Can a ship owner and charterer agree that the charterer will bear the risk and cost of loading and stowing the cargo, adopting “free-in-and-out” (“FIO”) terms? Don’t they have the commercial freedom to do so? The Second Circuit’s decision in *Man Ferrostaal, Inc. v. M/V Akili, et al.*, 704 F.3d 77, 2013 A.M.C. 113 (2d Cir. 2012), demonstrates that, if they intend to do so, they must choose the words for their charter carefully. The Second Circuit’s opinion (1) casts serious doubt on the future validity of the public-private carriage analysis in determining if such FIO terms could be agreed as a matter of private carriage, and (2) highlights the importance of choosing a clause paramount with care.

The M/V *Akili* was a bulk cargo carrier whose head owner, Akela Navigation Co., time chartered the *Akili* to Seyang Shipping. Seyang in turn sub-chartered the vessel to

S.M. China for the voyage at issue. Finally, S.M. China entered into a part-cargo charter with a steel trader, Man Ferrostaal, Inc., for the carriage of 9,960 thin-walled steel pipes from Shanghai to New Orleans (the “Voyage Charter Party”). Upon arrival, damage was noted to part of the cargo which had been stowed beneath heavier pipes. Ferrostaal paid USD 286,078.32 to repair the damaged cargo. In July 2007, Ferrostaal filed suit in the District Court for the Southern District of New York, bringing *in rem* claims against the M/V *Akili* and *in personam* claims against Akela Navigation Co., the vessel’s manager, Almi Marine Management, and S.M. China. After a bench trial before Judge Denise Cote in January 2011, the District Court held the vessel liable *in rem* but dismissed the *in personam* claims against the head owner and the vessel manager¹. An appeal and cross-appeal followed.

Writing for a unanimous panel of the Second Circuit, Judge Winter first addressed, and rejected, the vessel defendants’ novel argument that an *in rem* proceeding against the vessel was unavailable since the vessel was not a “carrier” under COGSA. The Court reasoned that “COGSA assumes the existence of the *in rem* proceeding rather than creates it,”² and noted that, by setting sail with the cargo on board, the *Akili* ratified the Voyage Charter Party. The Court stated: “[W]hile COGSA, if applicable, may affect or alter a carrier’s obligations and

thereby determine the outcome of an *in rem* proceeding against a carrier’s vessel, the *in rem* remedy is a creature of maritime law, not COGSA.”³

The Court then addressed the issue of whether a “free-in-and-out” provision in the Voyage Charter Party relieved the vessel of liability for improper stowage. The relevant provision read: “The cargo to be loaded, stowed, lashed, secured and dunnaged *free of risk* and expenses to the vessel in accordance with local regulations for steel cargoes, under deck only.”⁴ The vessel defendants argued that this provision absolved the vessel of liability for improper stowage of the pipes. If COGSA applied to the contract of carriage, however, it would prohibit the carrier from contracting out of the duty to stow cargo properly, thus rendering the free-in-and-out provision unenforceable. To determine whether COGSA applied by its own force to the contract of carriage, the Court looked to the so-called “Applicability Provision” shared by both COGSA and the Hague-Visby Convention:

“[C]ontract of carriage” applies only to contracts of carriage covered by a bill of lading or any similar document of title, in so far as such document relates to the carriage of goods by sea, including any bill of lading or any similar document as aforesaid issued under or pursuant to a charter party from the moment at which such bill of lading or similar document

*of title regulates the relations between a carrier and a holder of the same.*⁵

The Court noted that, while the Applicability Provision does not mention any distinction between public and private carriage, “most American courts ... treat the Applicability Provision as calling for a determination of whether the vessel was engaged in public – roughly speaking, multiple cargos and shippers – or private – again, roughly speaking, a single cargo and shipper – carriage.”⁶ Many courts had generally held that, if the vessel were engaged in public carriage, COGSA applies of its own force; but if the vessel were engaged in private carriage, generally COGSA would not supplant the negotiated terms of the private agreement by force of law.

After recognising that the public-private carriage distinction finds no textual support in COGSA, the Court observed that it has sometimes “labored” to treat bills of lading as proxies for public carriage and charter parties as proxies for private carriage. Further, the Court noted that the public-private carriage distinction is a “relic” of pre-COGSA case law applying the Harter Act, and that there is “no necessary correlation between public carriage and carriage pursuant to a bill of lading, or private carriage and voyage charter parties.”⁷ The Court cited its prior decision in *M/V Farland* as an instance where it refused to treat the compulsory application of COGSA as turning on whether there was public or private carriage, finding instead that COGSA applied because the parties agreed that a bill of lading governed relations between them.⁸ The Court observed that applying the public-private distinction to the instant case would likely favour the cargo interests, as the subject voyage involved multiple car-

ries and multiple shippers – features generally associated with public carriage to which COGSA would apply.

Instead of applying the public-private distinction (like the district court had done), the Court of Appeals considered the “governing instrument” analysis utilised by the Fifth Circuit in recent cases. This approach “treats the applicability of COGSA as turning on which document – the charter party or the bill of lading – governs relations between the litigants.”⁹ Applying the governing instrument approach to the instant case would likely favour the vessel interests, the Court noted, as the bill of lading was a mere receipt – and the Voyage Charter Party (including its free-in-and-out provision) was the governing document. The Court acknowledged that adopting either the public-private carriage analysis or the governing instrument standard “might well ... affect the outcome in this matter.”¹⁰

In the end, however, the Court adopted neither the private-public analysis nor the governing instrument standard. Instead, the Court held that it did not have to “resolve the various issues raised *because the Voyage Charter Party’s Clause Paramount incorporates the Hague-Visby Rules.*”¹¹ Thus, “[e]ven if COGSA does not apply ... *the Voyage Charter Party provides rules regarding the impermissibility of a waiver of in rem liability – Hague-Visby – identical to those of COGSA.*”¹²

The Court therefore held that the Clause Paramount superseded the free-in-and-out provision, noting that it incorporated the Hague-Visby rules “notwithstanding any other provisions in this contract.”¹³ By incorporating the Hague-Visby rules (and their prohibition against waivers of *in rem*

liability) into the Voyage Charter Party, the Clause Paramount rendered the free-in-and-out provision a nullity to the extent that it might relieve the vessel of liability for improper stowage “because it is prohibited by Hague-Visby.”¹⁴ Accordingly, the Court rejected the vessel interests’ argument that the free-in-and-out provision absolved the vessel of *in rem* liability and affirmed the district court’s Judgment against the *Akili*.

Yet the Court offered no comment on the second sentence of the Clause Paramount, which expressly prohibited construing the FIO terms to shift to the cargo interests the responsibility or risk of loading or stowage:

Any clauses in this contract allocating responsibility or risk with respect to loading, stowing, stevedoring, lashing, securing, dunnaging, discharging and delivery shall be deemed to apply only as price terms and shall not be interpreted to alter in any way the responsibilities of the owner and the ship as carriers as defined in the Hague Rules as respects claims for cargo and damage.

So, the “free-in-and-out” provision of the charter gave the risk to cargo interests and immunised the owner-carrier – and the Clause Paramount took away the risk and placed it back on the owner-carrier, consistent with Hague-Visby and COGSA. Against this contractual patchwork (take one risk here, take away that same risk there), some provocative questions arise: Was it necessary for the Second Circuit to analyse the Hague-Visby, COGSA and public-private carriage standards to negate the FIO terms, where the contract language chosen by the parties themselves actually did so? No conflict with Hague-Visby or COGSA actually existed; or did it? Why insert in the Clause Paramount the lan-

guage negating the very FIO terms inserted? More interestingly, what would the Second Circuit rule if the Clause Paramount contained different language, say omitting the “notwithstanding any other provisions” language and affirming that the FIO terms should remain valid despite Hague-Visby and COGSA?

No published decision of any court or arbitral panel, in New York or elsewhere, has yet cited the decision in the one and a half years since it was issued. This perhaps reflects that fewer cargo cases are being litigated or arbitrated.

The full implications of the *Akili* case thus remain to be seen. Nonetheless, the decision casts doubt on the future viability of the public-private carriage distinction. The Court of Appeals’ opinion demonstrated that the court could reach the same result as the district court without resorting to the public-private carriage analysis. Moreover, the decision describes that analysis as a “relic” of case law addressing the Harter Act. The Court observes that the public-private carriage analysis finds no basis in the text of COGSA, and notes that the courts have struggled to apply this test in a reasoned manner. The Court also cited, but declined to adopt or reject expressly, the Fifth Circuit’s “governing instrument” standard as an alternative to the public-private carriage test. At bottom, the Court’s opinion instructs the district courts to apply the clause paramount language chosen by the parties, and cautions against mechanically applying an analysis of public-private carriage, in deciding whether COGSA applies.

The *Akili* case may also prove a trap to the unwary ship owner or charterer, or to their respective P&I Club or insurers, who agree

upon “free-in-and-out” terms in a charter, but fail to consider carefully the possible implications of the language selected in the clause paramount – which a court or arbitration panel could find effectively supersedes the otherwise agreed upon terms. It is easy to imagine circumstances where parties specifically negotiate a free-in-and-out provision in a charter, intending as part of the bargain to allocate the risk of cargo damages from improper stowage. A party unfamiliar with the *Akili* rule might not realise that the clause paramount, which the party may have regarded as boilerplate, could incorporate a body of law that renders the free-in-and-out (or similar) provision unenforceable. The counterintuitive consequence of *Akili* thus sits in wait to shock the unenlightened: A boilerplate clause paramount can supersede and nullify a specifically negotiated clause for waiving the risk for improper loading or stowage. Parties to such contracts should be wary of this risk. ■

Appearances:

Deorchis & Partners, LLP, New York, NY, for Defendant-Cross-Claimant-Appellant-Cross-Appellee. (Owners interests)

Steven P. Calkins, Kingsley, Kingsley & Calkins, Hicksville, NY, for Plaintiff-Appellee-Cross-Appellee. (Charterer’s interests)

Notes

¹ *Man Ferrostaal, Inc. v. M/V AKILI et al.*, 763 F.Supp.2d 599, 615, 2011 A.M.C. 786 (S.D.N.Y. 2011).

² *Man Ferrostaal*, 704 F.3d at 83.

³ *Id.* at 84.

⁴ *Id.* (emphasis added).

⁵ *Id.* at 86 (citing 46 U.S.C. § 30701 Note § 1(b); Hague-Visby Rules, Art. I.).

⁶ *Id.* (citing cases from the Second and Fifth Circuits).

⁷ *Id.*

⁸ *Id.* (citing *Nichimen Co. v. M.V. Farland*, 462 F.2d 319, 326-29 (2d Cir. 1972)).

⁹ *Id.* (citing *Tradeared Inc. v. Western Bulk Carriers K/S*, 374 Fed.App’x. 464, 473-74 (5th Cir. 2010); *Thyssen, Inc. v. Nobility MV*, 421 F.3d 295, 297, 307 (5th Cir. 2005)).

¹⁰ *Id.* at 87.

¹¹ *Id.* (Emphasis added).

¹² *Id.* (Emphasis added).

¹³ *Id.* at 88.

¹⁴ *Id.*

Editor’s Note: This article was published in the August 2014 issue of the ARBITRATOR, the newsletter of the Society of Maritime Arbitrators. The authors are John R. Keough, Esq., and George G. Cornell, Esq., of the Maritime Practice Group of the New York office of Clyde and Co. They have graciously permitted its publication in the Bulletin. Supplied by Patrick V. Martin, Esq., counsel to the Society.

On the Horizon...



DATE	VENUE	EVENT	CONTACT
19-23 Jan. 2015	London	IMO's Sub-Committee on Pollution Prevention and Response (PPR 2)	Aron F. Sørensen: marine@bimco.org
20-21 Jan. 2015	Amsterdam	INTERCEM Shipping Conference	Peter Sand: ps@bimco.org
27-29 Jan. 2015	Copenhagen - Oslo	Conference on e-Navigation Underway	Aron F. Sørensen: marine@bimco.org
29 Jan.-28 Apr. 2015	eLearning	eLearning Course: Time Chartering	Mette Juul Madsen: mem@bimco.org
2-6 Feb. 2015	London	IMO's Sub-Committee on Human Element, Training and Watchkeeping (HTW 2)	Aron F. Sørensen: marine@bimco.org
11-12 Feb. 2015	Bergen	Digital Ship Conference	Peter Sand: ps@bimco.org
16-20 Feb. 2015	London	IMO's Sub-Committee on Ship Design and Construction (SDC 2)	Aron F. Sørensen: marine@bimco.org
17-18 Feb. 2015	Gothenburg	RoRo Shipping Conference	Peter Sand: ps@bimco.org
19 Feb.-19 May 2015	eLearning	eLearning Course: Bills of Lading	Mette Juul Madsen: mem@bimco.org
26-27 Feb. 2015	Singapore	Executive Committee Dinner/Meeting	Karin Petersen: kp@bimco.org
4-5 Mar. 2015	Hamburg	Propulsion & Emission Conference	Lars Robert Pedersen: marine@bimco.org
5 Mar.-23 Apr. 2015	eLearning	eLearning Course: Introduction to Shipping	Mette Juul Madsen: mem@bimco.org
9-13 Mar. 2015	London	IMO's Sub-Committee on Navigation, Communications and Search and Rescue (NCSR 2)	Aron F. Sørensen: marine@bimco.org
10-12 Mar..2015	Copenhagen	Green Ship Technology Conference	Lars Robert Pedersen: marine@bimco.org
17 Mar. 2015	Copenhagen	BIMCO Marine Committee Meeting	Aron F. Sørensen: marine@bimco.org
19 Mar. 2015	Limassol	BIMCO Maritime Security Committee Meeting	Giles Noakes: security@bimco.org
23-25 Mar. 2015	Stamford	CMA	Michael Lund: mlu@bimco.org
23-27 Mar. 2015	London	IMO's Sub-Committee on Ship Systems and Equipment (SSE 2)	Aron F. Sørensen: marine@bimco.org
26 Mar.-25 June.2015	eLearning	eLearning Course: Dry Cargo Laytime and Demurrage	Mette Juul Madsen: mem@bimco.org
13-17 Apr. 2015	London	IMO Legal Committee	Christian Hoppe: cho@bimco.org
16 Apr.-27 Aug. 2015	eLearning	eLearning Course: Time Chartering	Mette Juul Madsen: mem@bimco.org
20-24 Apr. 2015	Singapore	Singapore Maritime Week	Thomas Timlen: tt@bimco.org
20-24 Apr. 2015	London	International Oil Pollution Compensation Funds	Christian Hoppe: cho@bimco.org
21-24 Apr. 2015	Odessa	Education, Training and Crewing Conference	Aron F. Sørensen: marine@bimco.org
28-30 Apr. 2015	Cyprus	CIRM Congress	Aron F. Sørensen: marine@bimco.org
5 May-15 Sep. 2015	eLearning	eLearning Course: Tanker Laytime and Demurrage	Mette Juul Madsen: mem@bimco.org
11-15 May 2015	London	IMO's Marine Environment Protection Committee (MEPC 68)	Aron F. Sørensen: marine@bimco.org
21-22 May 2015	MEL, Rotterdam	BIMCO Days at MEL, Rotterdam	Peter Grube: pg@bimco.org Henning Nielsen: hn@bimco.org
1-12 Jun. 2015	London	eLearning Course: Tanker Laytime and Demurrage	Aron F. Sørensen: marine@bimco.org
29 Jun.-3 Jul. 2015	London	eLearning Course: Tanker Laytime and Demurrage	Aron F. Sørensen: marine@bimco.org
13-17 Jul. 2015	London	eLearning Course: Tanker Laytime and Demurrage	Aron F. Sørensen: marine@bimco.org
14-18 Sep. 2015	London	eLearning Course: Tanker Laytime and Demurrage	Aron F. Sørensen: marine@bimco.org
19-23 Oct. 2015	London	International Oil Pollution Compensation Funds	Christian Hoppe: cho@bimco.org



BIMCO EDUCATION

UPCOMING COURSES

BIMCO COURSES, SEMINARS & WORKSHOPS

26-28 January 2015	HOUSTON	Masterclass Workshop - Project & HeavyLift Chartering
10-12 February 2015	DUBAI	Masterclass Workshop - Agency
5-6 March 2015	PARIS	Using SUPPLYTIME
19-20 March 2015	PERTH	Using SUPPLYTIME
18-20 March 2015	LIMASSOL	Masterclass Workshop - Bills of Lading
6-8 May 2015	ATHENS	Masterclass Workshop - Sale & Purchase
29 June - 3 July 2015	COPENHAGEN	BIMCO Summer Shipping School
28-30 September 2015	VANCOUVER	Masterclass Workshop - Voyage Chartering
19-21 October 2015	STAMFORD, CT	Case Study Workshop
9-11 November 2015	ROTTERDAM	Masterclass Workshop - Laytime & Demurrage
23-25 November 2015	ANTWERP	Masterclass Workshop - Time Charter
8-10 December 2015	DUBAI	Masterclass Workshop - Bills of Lading

BIMCO eLEARNING DIPLOMA PROGRAMME

29 Jan. - 28 Apr. 2015	MODULE 3	Time Chartering
19 Feb. - 19 May 2015	MODULE 2	Bills of Lading
5 Mar. - 23 Apr. 2015	MODULE 1	Introduction to Shipping
26 Mar. - 25 Jun. 2015	MODULE 4	Dry Cargo Laytime and Demurrage
16 Apr. - 27 Aug. 2015	MODULE 6	Voyage Chartering
5 May - 15 Sep. 2015	MODULE 5	Tanker Laytime and Demurrage

BIMCO Education schedule available at:

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Quality is never an accident;
it is always the result of high
intention, sincere effort,
intelligent direction and skillful
execution; it represents the wise
choice of many alternatives.

(William A. Foster)



The BIMCO House, December 2014



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