



BIMCO

BULLETIN

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3

Cyber security
the case for hardened defences

CONTENTS

BIMCO

- 2 Watchkeeper: Watch on the workforce
- 4 Philippe Louis-Dreyfus announced as new BIMCO president
- 5 BIMCO takes ownership of unique Shipping KPI System
- 6 Ship financing project off to a good start
- 7 Welcome to BIMCO: new members
- 8 Documentary Committee report – June 2015
- 18 Bridge resource management training
- 20 Simulation – preparing for the unexpected
- 24 Unsafe port claims – a club perspective
- 28 Ballast water treatment – a never ending story, from riddle to reality
- 32 Raising the bar for agents and brokers
- 34 Breaking the Myth: The effectiveness of bowties in risk and safety management

IMO

- 10 BIMCO reports from IMO

GENERAL

- 14 Cyber security – the case for hardened defences
- 16 Model declaration on seafarers' compliance with environmental rules and regulations

BOOK REVIEWS

- 36 New books – Analysis of a casualty
- 37 New books – Legacy of the Clyde



Ethane carriers poised to join gas shipping fraternity
p38



Oceans Beyond Piracy - read the latest report
p56

TANKER

38 Ethane carriers poised to join gas shipping fraternity

40 Disparity at the ends of the LPG shipping spectrum

SHIPPING MARKET OVERVIEW & OUTLOOK

42 Macro economics

44 Dry bulk shipping

46 Tanker shipping

48 Container shipping

50 Understanding the seismic shift in ship finance

52 Shipping must understand risk in order to manage it efficiently

54 El Niño and the wheat trade

SECURITY

56 Oceans Beyond Piracy - read the latest report

ROUND-UPS

64 IMF forecast China's economy to grow 6.8% in 2015

66 Asia's business and regulatory leaders address industry challenges

68 Latest EU policy and regulation news

70 US ballast water situation complicated for shipping

SHIPPING LAW

72 London Judgment – Pirates steal cargo – transit loss?

73 London Judgment – Demurrage claim – whether time barred

75 London Arbitration – Part cargo – readiness

77 New York Arbitration – Asbatankvoy – cargo contamination claim



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WATCH Watch on the workforce

Are you happy with your work? Do you set off each morning with eager enthusiasm and a spring in your step, keen to get to grips with the challenges of the day? And when you come home at night, do you feel fulfilled at what has been achieved during the working day, so you can enjoy your spare time without concern for tomorrow?

If the answer is in the affirmative, this is a measure of “contentment” and an indication that the employee–employer relationship is a positive one.

If you ask seafarers the same sort of questions, then you are looking for answers from a workforce which does not go home at the end of the day, but which lives at its place of work, for months on end. Contentment, then, will be a broader measure, reflecting the totality of life aboard ship, around the clock in the 24/7 sphere of a seafarers’ place of work as it moves around the world’s seaways.

The five-yearly BIMCO International Chamber of Shipping (ICS) Manpower Report, which provides the global industry with a unique oversight of seafarer supply and demand, is well under way and will be completed later in the year. It is a document that is eagerly anticipated and which shipping companies, national administrations, maritime education institutions and all other elements of the industry use, to a greater or lesser degree, to inform their forward manpower policies.

It is important not only because the seafaring population is so multinational but also because there is little guidance that can help the industry to make sensible decisions over the manpower which will operate increasingly sophisticated ships. There is also the problem of a relatively inelastic workforce, with a long training period between induction into the industry and an ability to operate at senior level. The more information about supply and demand that can be readily accessed by operators and others across the world, the better will be the balance between supply and demand.

When the BIMCO/ICS (then International Shipping Federation - ISF) Manpower Report first appeared in 1990, it provided crucial but raw statistics on the manpower situation, with the information gleaned from flag states and maritime administrations, some of whom, it was admitted, had little way of determining whether somebody who was described as a seafarer was still available for such employment. Gradually the reports have been “tuned” and enhanced to provide a wider picture of attitudes across the industry.

The 2015 Report will provide further enrichment, with surveys of opinion from the industry that will enable the user to gain a far fuller perspective of the manpower situation as it can be seen today but with a view of how it might be expected to develop in the future.

The first of these industry surveys, very appropriately, as they are the whole point of the exercise, has been designed to ascertain the opinions of seafarers. It is this group of people who will be on the receiving end of any policy initiatives and economic or technical changes in the industry in which they represent such a crucial part. The “attitudes” of seafarers might be thus considered very valuable information.

How was the survey undertaken? Social media has been determined as a really useful tool in this undertaking. It is cheap, can reach large numbers of people with ease and it is both fast and convenient. And the preliminary results which have been now published record the fact that more than 500 active seafarers from more than 40 nationalities felt able to respond. This is an encouraging result, and it is felt that the responses

are a good representation of the workforce in different ship types and trades, and different ranks and ratings.

Other surveys are targeting marine professionals' right across the board: people judged to have some insight into the manpower supply situation. These will include lecturers at maritime education and training institutions, manning agents and ship managers, and maritime unions and port welfare workers. The surveys will thus enable the 2015 Report to provide a far more complete picture than ever before of the industry's human element, its attitudes to their particular "world of work" and the workforces' "job satisfaction". Along with the statistical information and adduced trends, it will provide a wealth of information for those concerned with the development of manpower policies.

So what were seafarers thinking about their all-encompassing life afloat? To complain about the workplace is an almost universal human trait, and seafarers are no

different from anyone else, but it was interesting (although perhaps not surprising) that the seafarers surveyed valued "happy ships" greatly. Their contentment was also measured by prompt wage payments and the opportunity of promotion and career advancement. The fact that the majority are content with their lives at sea ought to be a matter of satisfaction for an industry that often tends to beat itself up about what is perceived as wrong in the world.

There is a timelessness about such findings that might be considered interesting. Seafarers are no different from people ashore, and "happy" ships, which may not be particularly new, or comfortable, or on a "blue water" route, have always been seen as a measure of their contentment. It is important in terms of retention, in that the employer is not forced to perpetually replace manpower that is not happy with its place of work. Prompt payment of wages is a measure of the company's systems and ultimately its health, while the scope for advancement is another sign of a caring employer that val-

ues those who work for the company and is prepared to encourage talent.

Those surveyed were also asked how long it would take them, in the event of their leaving their present employer, to find another berth. Two-thirds of respondents said that it would take them less than three months, which provides another useful clue to the availability of jobs and seafarers and the balance between them. Demand for experienced professionals, it might be suggested, remains high. Respondents were asked about the most important improvements in their working conditions during the last two years, and a sizeable number identified basic pay and internet access as the most significant. Training and the ability to gain new skills are valued by employees while the interest of life at sea gave scope for favourable comment, although there was also concern expressed about being buried under regulation and administrative tasks. They may have a singular way of life, but the attitudes of seafarers really do not differ greatly from those of shore-side folk. ■

Things that go bump in the night

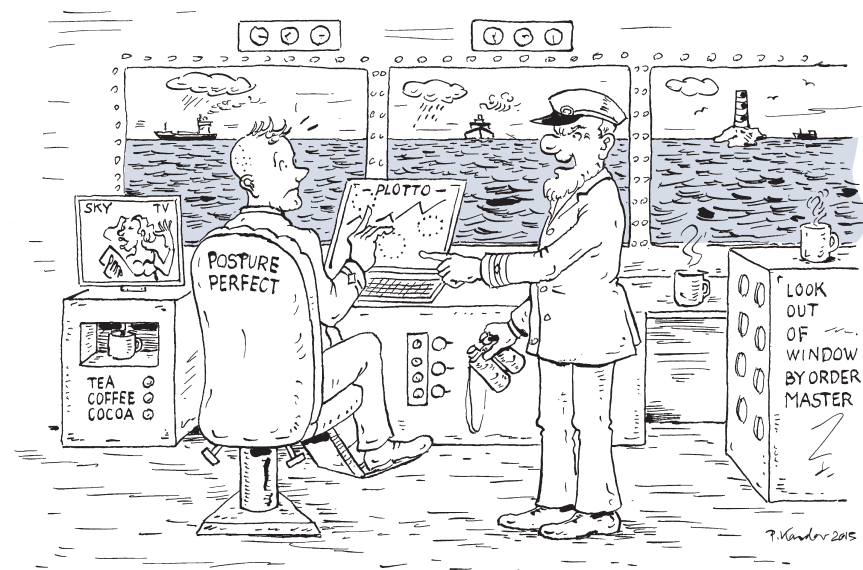
Not for the first time, the enthusiasm of some modern navigators for their electronics to the neglect of first principles and the use of the "Mk I Eye-ball" has been the subject of some adverse comments. The regular *Safety Digest* published by the UK's Marine Accident Investigation Branch (MAIB) notes a particularly embarrassing case of a grounding, where an Electronic Chart Display and Information System (ECDIS), being used as the ship's primary (and sole) form of navigation, had been programmed to lead the ship straight onto a well-charted sandbank. Even after the ship had stopped with her nose buried in the mud, the officer of the watch (OOW) failed to deduce the reality of his predicament. Only a kindly message, inquiring about the situation from the local coastguard, showed those on board their error.

The fact that the OOW, seated in his comfortable chair and following the track on an ECDIS with all the safety settings and contours wrongly entered, failed to look out of the window at the flashing lights of the buoys helpfully positioned to warn navigators of the sandbank was a further measure of the several mistakes which were identified by MAIB in combining to ground the otherwise well-equipped tanker on a fine, clear

night. The audible alarm was not working, so ears, as well as eyes, didn't help!

The Royal Institute of Navigation, in its regular *Fairway* magazine, also comments about its concerns about "electronic routing" where people are charging down lines that have been drawn up in electronic passage plans to pass right over buoys and lightships, which are showing signs of dam-

age after ships have bounced off them. It is all a little worrying and causing more questions to be asked about training and retraining in the electronic way of the navigational world, and there are some cases coming to light which might be thought of as "the blind leading the blind", with senior officers unable to properly check the courses input by their computer-literate but inexperienced juniors. ■



"If we followed your passage plan we would have taken out three buoys, a lightship and the pavilion on the end of the pier!"

Philippe Louis-Dreyfus announced as new BIMCO president

Philippe Louis-Dreyfus, of Louis Dreyfus Armateurs, was chosen as the new BIMCO president during the recent Annual General Meeting (AGM) in Edinburgh Scotland on 2 June 2015.

In his accession speech, new President Philippe Louis-Dreyfus described BIMCO as “the global association that should be closest to the commercial realities of shipping business.” Leadership and practical support for shipping businesses emerged as strong themes of his vision for BIMCO in the coming years of his presidency.

The new President praised the work carried out by outgoing President John Denholm and also welcomed the new President Designate, Anastasios Papagiannopoulos from Common Progress.

BIMCO’s leadership in the industry

The new President said he wanted to see BIMCO take on a leadership role for its members to help promote the excellent work and achievements of the industry in areas like safety, pollution and the environment. He also called for the industry – and shipping associations especially – to be more proactive in responding to changes in these areas. Mr Louis-Dreyfus said:

“It is not too late to influence future politics, so that they are not just imposed on us.

“I strongly believe that BIMCO has the global visibility and the recognition that cannot be easily replicated and is a powerful tool in bringing the industry together on the issues that affect us all most – giving BIMCO the ability to be a powerful agent for change and for promoting best practice on important business and regulatory areas.”

Mr Louis-Dreyfus cited the development of a standard ship finance term sheet for as

a key example of BIMCO providing practical support to shipping businesses, as it will help BIMCO members to simplify and standardise their ship financing documentation and reduce the legal costs of each transaction.

“I see this as being absolutely at the heart of what BIMCO does – finding new ways to help members and acting swiftly for their benefit.”

During his term, the new President will also see the development of the Shipping KPI System, which BIMCO has today announced it has taken over from InterManager (subject of a separate press release). This is a tool that will allow shipowners, operators and managers to benchmark and monitor their company and ship performance in order to drive efficiency and improved results.

Mr Louis-Dreyfus also highlighted that shipping is no longer transport only and that more and more industrial activities will be done at sea, with new and specific documentation therefore needed. He referenced work already begun by BIMCO in this area (such as SUPPLYTIME and HEAVYCON), but that more will be need to be developed.

BIMCO’s leadership on the development of industry guidance on cyber security was also praised by the new President, as was its continuing leadership in the development of standard contracts and clauses, which he said was fundamental to its global reputation.

BIMCO’s corporate identity

Mr Louis-Dreyfus also announced that



In 1974, after having acquired a shipping experience in London and Oslo, Philippe Louis-Dreyfus joined Banque Louis Dreyfus where he created a specialized shipping finance department.

In 1986, he left his family group to go and work with Banque Pallas France, in charge of the business and corporate division.

In 1994, he became President of Credit Naval.

In 1996, he returned to his family business to take the responsibility of Louis Dreyfus Armateurs, of which, together with his children, he finally took over 100 % control.

Philippe Louis-Dreyfus was elected President of Armateurs de France (the French Ship-owners’ association) and also President of the European Community Ship-owners’ Association (ECSA) of which he remains Vice-president. He was also elected CMA Commodore in 2010.

He is member of the board of Bureau Veritas, of BIMCO, of the French International Business Confederation (Medef International) of which he is also vice-president.

An active sportsman, Philippe Louis-Dreyfus has been a French Team Champion in squash and selected at National University level in Rugby. He also served two years in the French Army as an Airborne Cavalry Officer.

Among other decorations, Philippe Louis-Dreyfus is Commandeur of the Legion of Honor (French national honorary decoration) and Officer of the British Empire (OBE).

(photo credit: REA)

BIMCO would be reviewing its overall corporate identity, following some core research with members, and will use the outcome of this research to revisit BIMCO’s core values and develop its corporate identity to ensure that these values are at the heart of its activities and the way BIMCO presents itself to the industry. He said:

“I believe this is a valid and crucial step for BIMCO to take and it will also use the needs and engagement of its members as a guiding force.”

Mr Louis-Dreyfus will serve as President of BIMCO for the next two years and can be contacted via the Secretariat via president@bimco.org. ■

BIMCO takes ownership of unique Shipping KPI System

BIMCO announced during its recent AGM in Edinburgh that it has taken ownership of the unique Shipping KPI System that allows shipowners and managers to compare their ships' efficiency against the performance of the industry and sector averages.

The Shipping KPI System (www.shipping-kpi.org) is unique because it is based on a standard of 64 different performance indicators (such as ship unavailability and number of environmental related deficiencies) to allow the most specific and accurate comparison of ships – within each sector and more broadly across the industry – that is currently available. The data collected is anonymised, so it does not compromise commercially sensitive information.

The KPI Standard covers:

- health and safety management and performance
- HR management performance
- environmental performance
- navigational safety performance
- operational performance
- security performance and
- technical performance.

Now that BIMCO has taken ownership of the system, it will ensure that its ongoing development will take into account the broader needs of shipowners and operators, as well as managers, as part of the continued development of the KPI standard.

The Shipping KPI System will be provided free of charge to BIMCO members (aside from a nominal set-up fee for new users), but will also be open to non-members for a fee. BIMCO will run the tool for the entire industry on a not-for-profit basis, focusing on the value of the tool for the industry.

Angus Frew, Secretary General of BIMCO, said of the system:

“The shipping KPI system is unique and valuable to our industry – and we will

ensure it continues to be run by industry for industry.

“We will seek to ensure that it becomes the indispensable and trusted tool of all ship owners, operators and managers, allowing them to benchmark and monitor their company and ship performance to drive improvements– without compromising their commercial data.”

Philippe Louis-Dreyfus, the new President of BIMCO, said of the system:

“Accurate benchmarking requires data – and the participation of many shipping companies is crucial. BIMCO is uniquely placed to make this a success, by having the largest membership of any international shipping association – and the trust and recognition across the industry globally.”

Initiated in 2003, the system was developed by a cross-industry group of experts, led by InterManager – the international trade association for the ship management

industry - and working with the Norwegian Research Council, consultants Marintek, and maritime IT specialists SOFTImpact and overseen by an independent KPI Association since 2011.

Kuba Szymanski, Secretary General of InterManager and part of the core development team for the system, said:

“The KPI system was born out of a need for an international system to define, measure and report on operational performance in an effort to respond to society’s increasing demands.

“I am delighted to see that SOFTImpact is staying with the project and I have full confidence that maintaining this continuity will ensure its continued success.”

Members can find out more about the system at www.shipping-kpi.org or contact Peter Lundahl Rasmussen, project lead at BIMCO (plr@bimco.org). ■■

Ship financing project off to a good start

Under the chairmanship of Francis Sarre, Company Secretary at Compagnie Maritime Belge, the first meeting of the standard term sheet sub-committee took place at BIMCO House on 9 April.



The term sheet sub-committee at work.

The meeting was the culmination of a consultation process with shipowners and ship financing banks on the desirability of developing a standard ship financing document, either in the form of a full scale loan agreement or a term sheet for use in ship financing transactions. BIMCO's Board of Directors, at its meeting in November 2014, decided that BIMCO should develop a standard term sheet. The aim is to offer shipowners and banks a comprehensive and predictable standard that can facilitate loan documentation processes and reduce costs.

At the first meeting of the sub-committee, the participants discussed the objectives, procedures and timescale of the project. It was agreed that the objective should be to develop a relatively simple standard, which would benefit shipowners and banks across the board and which could be easily adapted to fit the parties' specific needs. The sub-committee also embarked on the actual drafting of the term sheet based on a preliminary draft prepared ahead of the meeting. The aim is to prepare a draft standard for adoption by BIMCO's Documentary Committee in 2016.

The sub-committee considered the possibility of establishing a sounding board, which would make it possible for interested stakeholders to comment on the work as it progresses. It was agreed, in principle, that a sounding board should be established once the sub-committee had advanced further in its work and had agreed on the text of a first draft of the standard term sheet.

The matter will be considered further at the next meeting of the sub-committee on 12 June in Paris. ■■



Sub-committee members in front of the BIMCO house.

Welcome to BIMCO!



BIMCO would like to extend a warm welcome to the following new members, admitted during the period from 1 March to 31 May 2015.

OWNER MEMBERS

Bhagwan Marine	Darwin, Australia
Bonja Shipping Co Ltd	Mersin, Turkey
Ciner Ship Management Agency Industry&Trading Inc.	Istanbul, Turkey
CLdN Cobelfret SA	Luxembourg, Luxembourg
Columbia Cruise Services	Limassol, Cyprus
Damen Shipyards Groupw	Gorinchem, Netherlands
Dutch Marine Contractors BV	Amsterdam, Netherlands
Eastport Ocean Trading Corp	Annapolis, USA
Gestioni Armatoriali SpA	Ravenna, Italy
GMT Energy Resources Limited	Lagos, Nigeria
Marine Core and Charter LLC	Dubai, UAE
Norlat Shipping Ltd. AS	Sarpsborg, Norway
Oceanwide Marine Services BV	Vlissingen, Netherlands
Paranagua Pilots Servicos de Praticagem	Paranagua, Brazil
Port Towage Amsterdam B.V.	Ijmuiden, Netherlands
Specialised Vessel Services Ltd	Ebene, Mauritius
Tethys Plantgeria Ltd.	Port Harcourt, Nigeria
UrbaCon Trading & Contracting	Doha, Qatar
Victory Shipping Pte. Ltd.	Singapore, Singapore

AGENCY MEMBERS

Alliance Shipping Services Co. Ltd.	Bangkok, Thailand
Celero Shipping c/o Celero Ltd	Port Louis, Mauritius
Comet Shipping Agencies Nigeria Ltd.	Port Harcourt, Nigeria
Emcar Ltd	Port Louis, Mauritius
Gulf Badr Group	Addis Ababa, Ethiopia
Gulf Badr Group	Dar Es Salaam, Tanzania
Gulf Badr Group	Kampala, Uganda
Gulf Badr Group	Mombasa, Kenya
Gulf Badr Group (Djibouti) Sarl	Djibouti, Djibouti
Unimar Agenciamentos Maritimos Ltda	Sao Francisco Do Sul, Brazil
Viking Shipping Company (Hong Kong) Ltd.	Hong Kong, Hong Kong
Western Ships Agency	Klaipeda, Lithuania

BROKER MEMBERS

Alpha Sea Trans	Damietta, Egypt
Cachamca SAS	Paris, France
Erima Shipping AS	Hoevik, Norway
GMD Denizcilik San Ve Tic A.S	Istanbul, Turkey
Japan Heavy Lift Inc. (JHL)	Tokyo, Japan
Jarsin Shipbrokers Pte Ltd	Shanghai, China
Shanghai Fenglii Shipping Co., Ltd	Shanghai, China

ASSOCIATE MEMBERS

BCA College	Athens, Greece
D&D Maritime Services Pty Ltd	Edge Hill, Qld, Australia
German American Maritime Institute	Cuxhaven, Germany
Helsingør Havne/HSN	Helsingør, Denmark
Hua Xin Zhong An (Beijing) Security Services Co.Ltd.	Beijing, China
London Metropolitan University	London, UK
PLMJ - Sociedade de Advogados, RL	Porto, Portugal
Ridge Consulting (Shanghai) Co., Ltd	Shanghai, China
St.Britto's College	Chennai, India
Veritas Petroleum Services BV	Barendrecht, Netherlands
Yrkeshögskolan Novia vid Åbo Akademi	Turku, Finland

CLUB MEMBERS

Gard (Singapore) Pte. Ltd.	Singapore, Singapore
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Documentary Committee report – June 2015

The Documentary Committee, under Chairman Mr Karel Stes, met in Edinburgh on 3 June 2015 to approve new documents and clauses, review work in progress and identify projects for future development.

Immediate Past President, Mr John Denholm, former President Mr Michael Everard and members of the Executive Committee joined the meeting which was attended by shipowners and club representatives from BIMCO's worldwide membership together with observer organisations FONASBA, the International Group of P&I Clubs and INTERTANKO.

NYPE revision

Approval was given (in principle) to a revised version of the New York Produce Exchange (NYPE) Time Charter Party. This has been the focus of intensive discussions through a BIMCO Sub-committee with copyright holder ASBA, and in consultation with the Singapore Maritime Foundation. The new document incorporates up to date provisions reflecting changes that have taken place in legal, commercial and market practices; over more than twenty years since the last revision.

Ro-ro trades

A new addition to the BIMCO suite of documents is "ROPAXTIME". This is a specialist time charter party reflecting user needs in ro-ro passenger vessel trades. As well as addressing the customary allocation of party rights and obligations under a time charter. It also spells out charterers' responsibilities for the employment of on board hotel and catering personnel; cleaning and servicing of cabins, restaurants and public spaces; maintaining high standards of hygiene; and liability for passengers and their welfare.

Technical update

The LINERTIME Deep Sea Time Charter Party continues to be used in the markets. Nevertheless, in order to ensure that

the content remains in line with contemporary needs, a technical revision has been undertaken to replace outdated war, stevedore damage and dispute resolution provisions with the latest clauses.

Protecting parties

Clauses to protect parties against dealings with internationally barred persons and entities have previously been developed respectively for charter parties and sale and purchase agreements. In recognition of the fact that similar protection is necessary to protect parties and ensure bona fide subcontractors' in ship management contracts, a parallel provision the "Designated Entities Clause for SHIPMAN 2009" was adopted.

Fumigation

In response to concerns about questionable practices in the conduct of fumigation operations, a specialist new Cargo Fumigation Clause for Charter Parties (covering both time and voyage charters), has been developed for the dry cargo sector. The provision is triggered at a charterers' option and at their own risk, responsibility and expense. This sets out a regime based on IMO recommendations for undertaking fumigation and MARPOL Annex V procedures for the removal of fumigant remains.

Reviewing bills of lading

Work is underway to review BIMCO's portfolio of bills of lading and waybills to incorporate, where appropriate, the revised Himalaya Clause which brings ship managers within the scope of carrier defences and, also, to align the signature boxes with the latest ICC UCP 600 Rules. Changes to liner bills and other self-standing documents are relatively straightforward and, as a first step, amendments to CONLINEBILL were approved. However, charter party bills are

more problematic to avoid creating inconsistency with the underlying document. A specialist working group is being formed to supervise the review.

Bunker issues

Approval was given to amend the Bunker Fuel Sulphur Clause for Time Charter Parties 2005 to address two practical issues. The first is to close a gap which can be exploited in some areas, such as the US, where charterers are able to file a notice of non-availability of low sulphur fuel without owners' knowledge. This may have repercussions later, possibly after redelivery, so a provision will be added requiring charterers to inform owners whenever such a claim is filed. The second point is that different low sulphur fuels are not always compatible with each other. Appropriate text will therefore be developed requiring compatibility.

An adjustment was also agreed to the Bunker Operations and Sampling Clause amending the minimum number of fuel samples to be taken from seven to five.

New York arbitration

Following agreement between the US Maritime Law Association and the Society of Maritime Arbitrators, the requirement for arbitrators to be "commercial persons" no longer applies. It was agreed that the US Law/New York Arbitration Clause in the BIMCO Dispute Resolution Clause should be amended accordingly. In the meantime, a proposal to review the rationale and content of the US option for mediation will be taken forward.

Tackling corruption

Corruption, through demands of gifts such as cigarettes, alcohol or cash as sweetener for officials to carry out their duties, is an

everyday problem encountered by owners in many parts of the world. Corporate undertakings are insisting on the contractual inclusion of anti-corruption provisions which, by their terms, can have harsh implications for owners in the event of a minor or technical breach. Work is therefore continuing (within a small Sub-committee) to devise a clause to balance party interests and to set out a regime to be followed when owners come under pressure to make unlawful payments.

Term Sheet

Work has begun on the development of a standard term sheet for ship financing transactions. The project is being taken forward by a specialist Sub-committee comprising representatives from BIMCO, international banks (with experience in ship financing and legal interests) representing owners and lenders. At this stage, discussions are being concentrated on identifying the underlying structure of the document and types of loans to be included.

Novation Agreements

It will, from time to time, be agreed that a party to a contract will be replaced by another entity. Such changes are usually made through novation. At present, there is

no standard form for the shipping industry and each agreement is separately negotiated. In order to provide a reference basis, work is underway to develop two forms respectively for novation for the substitution of time charterers and transfer of ship ownership.

New contracts

Carriage of LNG is an important and growing trade. A new LNGVOY Voyage Charter Party is under development to address the technical issues associated with this specialised trade where natural cargo “boil off” can, within limits, be used as free fuel during a voyage.

A new Standard Contract for the Supervision of Vessel Construction is being developed for project-related newbuilding supervision operations. Parties will be able to agree the scope of services to be provided from a range covering specification review, plan approval, makers’ list review and site supervision.

Supplytime revision

Work has started on revision of SUPPLY-TIME 2005. A preliminary meeting was held where key parts of the document were identified for revision and updating. A small Sub-committee will be assisted by a

wider “sounding board” of industry experts to put forward views and suggestions as work progresses.

Changes in Canada

In response to change requirements recently confirmed by the Canada Border Services Agency (CBSA), work is in hand to update the Canadian element of the North American Advance Cargo Declaration Clause for both time and voyage charter parties.

Modernising documentation

A number of BIMCO’s older charter parties are not readily compatible with some computer software. Document texts printed in two columns are difficult to read and amend. The problem is being addressed through reformatting of the documents to tidy and improve the layout to fit with contemporary technology.

Stepping down

After having completed the maximum permitted three terms of office, Mr Karel Stes stepped down as Chairman. Members of the Documentary Committee expressed their warm appreciation for his hard work and commitment for the last six years. ■■

Stes passes DC Chairman’s baton to Sarre

After six dynamic years of presiding over BIMCO’s Documentary Committee (DC), Karel Stes is stepping down as Chairman. Mr Stes, whose full time job is Chief Legal Officer at Exmar in Belgium, has skilfully chaired BIMCO’s largest Committee through a very productive period. During this time, 18 new and revised standard contracts and over 38 standard clauses were approved for publication.

Notable achievements include GUARDCON, BIMCO’s second best-selling contract, and the revision of SALEFORM 93 in 2012, which is widely used in the industry. Mr Stes also steered the DC through the approval of SHIPMAN 2009 and the BIMCO Terms 2015 Bunker Contract. Many clauses were approved during his term and they include the War Risks Clauses 2013, the Piracy Clauses, Slow Steaming Clauses and a new Dispute Resolution Clause expanded to include Singapore Arbitration.

Mr Stes’s successor is Francis Sarre who has represented Belgium in the DC since 2009. Mr Sarre is Chief Legal Officer, Company Secretary and Head of Insurance at CMB, Belgium. He is also Vice-Chairman of the West of England P&I Club. In the past six years Mr Sarre has been involved in a number of BIMCO Sub-committees including the revision of SALEFORM 93 and the development of the standard pooling agreements, POOLCON A and B. He is also chairing two Sub-committees - the Standard Term Sheet and Standard Novation Agreements.

Mr Sarre was formally appointed as Chairman at BIMCO’s Annual General Meeting held in Edinburgh, June 2015 and will chair the Committee for the first time in November in Hamburg.



Outgoing DC Chairman Karel Stes (R) and new Chairman Francis Sarre (L)

BIMCO reports from IMO

Spring is always a busy period when it comes to International Maritime Organization's (IMO) meetings.

BIMCO participated in a series of International Maritime Organization's (IMO) second session committee meetings. This article gives a brief overview of the most important items that were discussed at the following meetings:

- Second session of the Sub-Committee on Ship Design and Construction Sub-Committee (SDC 2) on 16-20 February 2015
- Second session of the Sub-Sub-Committee on Ship Systems and Equipment (SSE 2) on 23-27 March 2015
- Second session of the Sub-Committee on Navigation, Communications and Search and Rescue (NCSR 2) on 9-13 March 2015

SSE 2

Flashpoint requirements for fuel oil

Canada and the United States proposed to lower the allowable minimum flashpoint for oil fuel in the International Convention for the Safety of Life at Sea (SOLAS) chapter II-2 from 60°C to 52°C to be consistent with widely available automotive diesel fuels, and to amend regulation II-2/3 of SOLAS chapter II-2.

Following a long discussion on the pros and cons of lowering the flashpoint, SSE 2 agreed that the output was within the scope of an already established correspondence group (CG) related to future updates of the draft International Code of Safety for Ships using Gases or other Low-flashpoint Fuels (IGF Code). This CG was tasked with developing measures for ships using low-flashpoint diesel oil for inclusion in the IGF Code as and when appropriate, among other duties.

BIMCO is in general positive towards a possible lowering of the flashpoint, if such is not compromising the safety of ships and personnel. The reference to the 60°C is used

in different mandatory IMO instruments and, therefore, a detailed evaluation of its consequences prior to making amendments to SOLAS Convention and other instruments is included in the terms of references in the CG. BIMCO participates in the CG.

Life-saving appliances

SSE 2 discussed a proposed package of mandatory measures on servicing and maintenance of lifeboats and rescue boats, launching appliances and release gear. The purpose of this will be to minimise the number of accidents involving lifeboats and rescue boats.

A general debate concerning the role of the authorised service provider and certified personnel took place. BIMCO with other industry partners was of the view that personnel on board should to some extent be able to carry out examination of the on board equipment. SSE 2 did not reach agreement on the proposal to allow "certified personnel" to carry out annual examinations and five-year operational tests. Instead SSE 2 requested the Maritime Safety Committee (MSC) to give instructions. MSC 95 meets in June 2015.

Unified interpretations

A number of International Association of Classification Societies (IACS) submissions had been forwarded for the meeting to decide if they should become IMO unified interpretations (UIs). Subject for approval at MSC 96 in spring 2016, SSE 2 agreed on:

- draft UIs of SOLAS chapter II-2 and chapter 12 of the International Code for Fire Safety Systems (FSS Code). The interpretation was with a view to providing more specific guidance on the conditions under which materials other than steel may be permitted for components mounted on engines, turbines and gearboxes; arrangements for fixed hydrocarbon gas detection systems in double-hull

and double-bottom spaces of oil tankers; non-combustible material as "still or equivalent" for ventilation ducts; and fire pumps in ships designed to carry five or more tiers of containers on or above the weather deck

- draft UIs of SOLAS regulations III/6.4 and III/6.5 and section 7.2 of the Life-Saving Appliances (LSA) Code, with a view to providing more specific guidance on general emergency alarms and public address systems in ro-ro spaces
- draft UIs of chapters 5, 6 and 9 of the FSS Code, with a view to providing more specific guidance on fixed gas fire-extinguishing systems and fixed fire detection and fire alarm systems; foam-generating capacity of fixed foam fire-extinguishing systems; and additional indicating unit in the cargo control rooms
- draft UI of paragraph 4.4.7.6 of the LSA Code, as amended by resolution MSC.320(89), and the associated draft MSC circular, with a view to providing more specific guidance on lifeboat release and retrieval systems.

SDC 2

Watertight compartments

For quite some time, IMO has considered draft amendments to SOLAS regulation II-1/11 and associated guidelines for procedures for testing tanks and watertight boundaries for shipyards. This matter has also been discussed extensively at the BIMCO Marine Committee.

SDC 2 discussed the conditions for granting exceptions by use of equivalent methods for tank testing related to guidelines on compulsory shipyard quality standard. All these subjects are deemed extremely relevant for shipowners considering new-buildings in order to ensure the adequacy of testing arrangements for watertight compartments.



2015 - Ship Design & Construction Sub-Committee (SDC 2). (Photo: International Maritime Organization)

BIMCO agrees with other International Shipping Associations on this matter. The amendments as proposed at the meeting simply were inadequate to guarantee that ships with structural problems would not be built in the future. BIMCO believes that any waiver for hydrostatic testing has to be carefully considered to ensure that it is fully justified and technically sound, and thereby does not compromise overall safety or environmental protection. SDC 2 could not agree to the proposed draft amendments to SOLAS regulation II-1/11.

With regard to the draft guidelines for procedures for testing tanks and watertight boundaries and the draft guidance on verification of the quality management systems, SDC 2 decided to invite interested delegations and international organisations to submit final comments to MSC 95.

Industrial personnel

SDC 2 agreed on a draft MSC circular on the definition of industrial personnel, with a view to approval by MSC 95. The aim of the circular is to assist flag states so that they may develop and implement regulations for the safe carriage of industrial personnel on board offshore industry ships engaged in international voyages.

The circular defines “industrial personnel” as all persons, who are not passengers or members of the crew, and:

- are transported or accommodated on board for the purpose of offshore industrial activities
- are able-bodied and meet appropriate medical standards
- have received basic safety training, according to relevant industry standards
- have a fair knowledge of the layout of the ship and the handling of the ship’s safety equipment before departure from port (eg through a safety briefing)
- are equipped with appropriate personal safety equipment suitable for the risks to safety such personnel are likely to experience on the forthcoming voyage (eg immersion suits).

A CG was established in order to draft similar “Guidelines for offshore service craft (OSC) used in windfarm service” based on the guidelines for “industrial personnel”. The CG will report back to SDC 3 in the spring of 2016.

The Tonnage Measurement (TM) Convention

This agenda item concerned the development of requirements to ensure that new ships undertaking international voyages had adequate and certified facilities for the carriage of trainees. As a minimum, these

facilities should meet the requirements of the International Labour Organization (ILO) Convention on Accommodation of Crew. Some delegations, including ILO, have complained that many of today’s fees (including fairway dues) and shipping regulations are governed by the gross tonnage (GT) as defined by the TM Convention. In this respect, ships with more crew accommodation have been punished by a larger GT.

In February 2014, SDC 1 agreed to the draft UIs to the 1969 TM Convention and the associated draft circular (TM.5/Circ.6) with the aim of obtaining final approval at MSC 93 (May 2014). During SDC 2, the subcommittee agreed to take no further action with regard to the implementation until experience has been gained.

The subcommittee also considered a document (SDC 2/11/2) proposing regulation encouraging improved living conditions on board ships by means of a reduced gross tonnage parameter for assessing fees.

Some delegations had concerns that a simplified reduced gross tonnage parameter may lower the safety requirements of ships that are just above 500 tons. Another concern was that a non-mandatory instrument would not provide the necessary incentive to improve seafarers’ living conditions on board ships. Consequently, no agreement

was reached at SDC 2 on the draft Assembly resolution at this stage.

Intact Stability (IS) Code on towing, lifting and anchor-handling operations

SDC 2 finalised draft amendments to part B of the 2008 IS Code for ships engaged in anchor-handling operations. These amendments related to a recommended model for graphic or tabular presentation illustrating the permissible tension of the anchor-handling winch, defining operational limits, cautionary and stop work in a “green”, “yellow” and “red” zone.

SDC 2 also discussed draft amendments to part B of the 2008 IS Code regarding ships engaged in towing operations. It was, however, highlighted that there was an operational difference between escort towing and more traditional towing operations (including harbour, coastal and ocean towing). Criteria for escort towing did exist, but they may have to be reviewed as well. Owing to time constraints, it was not possible to conclude this specific matter.

Second-generation IS criteria

SDC established a working group on stability to continue its review of new IS criteria. The development covers requirements and criteria for the five different stability failure modes (pure loss of stability, parametric roll, surf-riding/broaching, dead-condition and excessive accelerations).

The general work is based on a three-level approach covering different stages of vulnerability. The level 1 criteria are used to check the vulnerability of a ship to a specific dynamic failure mode, whereas the aim of level 2 criteria is to indicate the degree of vulnerability to the particular failure mode. The intention is to have a set of simple and easy applicable criteria at the first two levels to identify conventional ships, for which the existing intact stability criteria work well. The criteria of level 1 and level 2 are based on significant simplifications and have been developed based on substantial safety margins. Level 3 contains numerical tools for direct computations including minimum qualitative and quantitative requirements.

Until now, the work has been focused on the development of level 1 and level 2 criteria and standards. This work is almost concluded though not yet verified to its full extent. Level 3 still needs more deliberation.

SDC 2 prepared a revised plan, identifying priorities, time frames and objectives. Veri-

fication of the level 1 and level 2 criteria and standards forms part of the future work.

Watertight doors (regulation II-1/13)

SDC 2 also discussed draft amendments to SOLAS regulation II-1/13 to introduce protection against the crushing of people during the daily operation of watertight doors, while retaining the SOLAS requirement to close these doors firmly in case of an emergency. SDC 2 noted that the technology for watertight doors had been developed over a century ago and, therefore, it may be time to undertake a comprehensive review of all watertight door regulations.

Taking into account the divergent views expressed during the discussion, the subcommittee agreed to ask the MSC to consider such a review. The MSC will meet in June 2015 (MSC 95).

Damage stability

During the meeting, the subcommittee established a working group on matters related to the subdivision and damage stability of the ship. The group finalised draft amendments to SOLAS chapter II-1 on subdivision and damage stability regulations in light of the SOLAS 2009 amendments, which will be forwarded to MSC 95 for approval.

Furthermore, SDC 2 considered a possible increase in the required subdivision index (index R) related to the damage stability. In brief terms, when doing damage stability calculations, the attained subdivision index (index A) has to be larger than the required index in order to fulfil the damage stability requirements. Quite a number of delegations have indicated that the acceptance criteria given in index R is too low for some ship types – primary passenger ships.

The group also considered the necessity of having damage control drills for passenger ships. However, having a number of unsolved issues, eg the frequency of the drills, the alignment with other testing requirements (eg SOLAS regulation II-1/21) and a definition for damage control station, etc, this item was included in the terms of reference for a CG reporting to SDC 3.

NCSR 2

E-navigation strategy implementation plan (SIP)

The IMO has defined e-navigation as “the harmonised 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”.

In 2014, NCSR 1 established a CG to consolidate the draft guidelines on human-centred design (HCD), the draft guidelines on usability testing, evaluation and assessment (UTEA) and the draft guidelines on software quality assurance (SQA) into a single harmonised guideline. BIMCO participated in this work. NCSR 2 discussed the outcome of the CG and with a few amendments, these important guidelines on software quality assurance and human-centred design for e-navigation were finalised and endorsed for approval by MSC 95.

Routeing measures and mandatory ship-reporting systems

With a view to adoption by the MSC, NCSR agreed on a number of proposals for new or amended routeing measures and mandatory ship-reporting systems:

- two-way routes in the south-west Coral Sea
- an area to be avoided in the south-west Coral Sea and
- five areas to be avoided in the region of the Aleutian Islands.

Performance standards for multi-system shipborne navigation systems

The minimum specifications for multi-system shipborne navigation receivers, which use navigation signals from two or more global navigation satellite systems (GNSSs), were finalised. Multi-system receivers will improve position fixing and provide better speed and time data. These performance standards have been outstanding for a long time and are essential for ships to be able to continue navigating even if one of the global satellite systems breaks down.

A shipborne navigation receiver performance standard will allow the combined use of current and future radio navigation, including augmentation systems for the provision of position, velocity and time data within the maritime navigation system. The performance standards will allow for the application of multiple methods and techniques for the provision of position, navigation and time (PNT) data and related integrity information. When the performance standards are adopted by MSC 95, all navigational systems installed on or after 31 December 2017 will have to comply with the new performance standards. ■■



Meet BIMCO

DATE	VENUE	EVENT	CONTACT
6-10 Jul. 2015	New York	CGPCS (Contact Group on Piracy off the Coast of Somalia) Plenary	Giles Noakes: gno@bimco.org
13-17 Jul. 2015	London	IMO Sub-Committee on Implementation of IMO Instruments (III) – 2nd Session	Aron F. Sørensen: afs@bimco.org
14-18 Jul. 2015	London	IMO Sub-Committee on Carriage of Cargoes and Containers (CCC) – 2nd Session	Ai Cheng Foo-Nielsen: acfn@bimco.org
21 Jul. 2015	London	Manpower Report Steering Committee 2nd meeting	Aron F. Sørensen: afs@bimco.org
7-11 Sep. 2015	London	London International Shipping Week	Gemma Wilkie: gw@bimco.org
8-9 Sep. 2015	London	Ship Efficiency: The Event 2015	Lars Robert Pedersen: lrp@bimco.org
9 Sep. 2015	London	Joint BIMCO/CSOA 'working breakfast' for shipping CEOs on The Future of Maritime Security 2015-2020	Giles Noakes: gno@bimco.org
10-11 Sep. 2015	London	BIMCO's Executive Committee Meeting	Karin Petersen: kp@bimco.org
13-16 Sep. 2015	Limassol	Maritime Cyprus 2015	Peter Sand: ps@bimco.org
22 Sep. 2015	Copenhagen	BIMCO Marine Committee meeting	Aron F. Sørensen: afs@bimco.org
22-23 Sep. 2015	Singapore	Ship Finance Forum	Peter Sand: ps@bimco.org
28-29 Sep. 2015	Chatham	North Sea Operators' Conference	Anna Wollin Ellevsen: awe@bimco.org
30 Sep. 2015	Copenhagen	BIMCO Security Committee meeting	Giles Noakes: gno@bimco.org
5 Oct. 2015	Copenhagen	40th Annual Interferry Conference	Anna Wollin Ellevsen: awe@bimco.org
7-8 Oct. 2015	Copenhagen	Danish Maritime Technology Conference during Danish Maritime Days	Lars Robert Pedersen: lrp@bimco.org
15-17 Oct. 2015	Seoul	Tripartite	Lars Robert Pedersen: lrp@bimco.org
19-23 Oct. 2015	London	International Oil Pollution Compensation Funds	Christian Hoppe: cho@bimco.org
26 Oct. 2015	Copenhagen	Skibteknisk Selskab - Cyber Security Presentation	Lars Robert Pedersen: lrp@bimco.org
26-29 Oct. 2015	St.Petersburg	ISO TC8 The 34th Plenary Meeting	Aron F. Sørensen: afs@bimco.org
4 Nov. 2015	Brussels	ECSA Piracy Working Group	Giles Noakes: gno@bimco.org
10-12 Nov. 2015	Hamburg	6th Gasfuelled ships Conference 2015 <i>50% discount for BIMCO's ship owner members</i>	Lars Robert Pedersen: lrp@bimco.org
17-19 Nov. 2015	Hamburg	BIMCO Annual Conference	Michael Lund: mlu@bimco.org
25 Nov. 2015	Barcelona	Platts 4th Mediterranean Bunker Fuels Conference	Lars Robert Pedersen: lrp@bimco.org

Cyber-security – the case for hardened defences

Nobody, from the individual with an inexpensive laptop to those overseeing sophisticated business systems, can be unaware of the need for cyber-security.

While the former is wearily becoming accustomed to phishing attacks and the need to pay for defences against viruses and malware, the not infrequent headlines tell us of the more spectacular events, with power utilities closed down or banking systems compromised by hackers or criminals. We are urged to be more aware of our vulnerabilities and to remain alert in a world changing at a bewildering pace, to consider matters of resilience and the need for contingency planning, if the worst happens and our systems are compromised.

The shipping world is coming to this state of increased alertness somewhat later than other industries, aided, perhaps, by its relative invisibility and its “over the horizon” operations. While some ships and shipping companies now operate increasingly sophisticated systems, others still run comparatively simple ships, without the massive data sharing that might be undertaken elsewhere. Nevertheless, better communications between ship and shore, the greater use of the internet in all its forms and the huge increase in data transmission are just facets of the growing complexity and sophistication right across the maritime world. With this accelerating pace has come a greater understanding of the risks of cyber-attack and the need for better defences.

It is quite clear that there is widespread under-reporting of these problems, for the obvious reasons that few would wish to identify themselves as victims. Isolated examples have gone public, sufficient to ring numerous alarm bells as people realise that they and their company might be similarly targeted by the cyber-attackers, recognising their vulnerability. Ship navigation and propulsion systems, logistic systems used

by container companies, cargo-handling systems in ports, electronic documents, and maintenance and financial control systems are all increasingly data dependent and are thus more vulnerable.

In the incidents which have reached the public domain, it has been revealed how drug-smuggling criminals had managed to infiltrate the electronic container-tracking systems of a major port. A survey by cyber-security experts of 20 major container ports found serious vulnerabilities in no fewer than 16 of them. A semi-submersible offshore rig had to be shut down after the computerised ballast-handling system was hacked into and the safety compromised. A number of trials have shown how much of a well-equipped ship’s equipment and systems can be made unsafe by simple jamming equipment that is readily available to hackers and criminals.

Navigation equipment, in particular, has been shown as demonstrably vulnerable, with weak satellite signals being easily interrupted. Meanwhile, the rapid increase in the use of e-navigation systems, with the

mandatory carriage of the Electronic Chart Display and Information System (ECDIS), Global Positioning System (GPS) and Automatic Identification System (AIS), along with integrated navigation systems, all demonstrate vulnerabilities and point to the need to make these systems more robust and resilient.

From where do the threats to ships and shipping companies in particular emerge? Although the most attention seems to be directed at cyber-criminals and malicious hackers, it has been suggested that a lack of awareness, inadequate training, simple carelessness by unwitting employees and complacency are all contributors to problems that arise. Inadequate access controls, poor password policies, ineffective anti-virus software, pirated or infected software, lax policies as regards the use of personal devices or memory sticks and the import of infected files from elsewhere have all caused often major damage and have been regularly identified. At a recent conference on cyber-security, a consultant noted that after a visit to a ship, he would destroy his laptop, lest it had become infected.



It has been suggested that a new cyber-security “culture” needs to be grafted into the maritime industry, where these problems have arisen. Above all, there needs to be greater awareness of the problems and appropriate contingency plans put in place, with regular training and drills to ensure that a ship is able to continue her voyage using other means.

So, there are real and serious vulnerabilities that need to be dealt with. For its part, BIMCO began to focus on the problem in 2013, its Marine and Security departments responding to the Executive Committee’s request and gathering as much information as possible on the various issues that could be identified.

At the International Maritime Organization’s MSC 94 meeting, a submission from Canada and the United States recommended the development of voluntary guidelines on cyber-security practices “to protect and enhance the resiliency of cyber-systems, supporting the operations of ports, vessels, marine facilities and other elements of the maritime transport system”.

In response BIMCO was able to announce that such work, undertaken with its industry partners and for the benefit of shipowners and ships’ crews, was well under way. Accordingly, at the next Maritime Security Committee meeting (MSC 95), *Measures to Enhance Maritime Security: Industry guidelines on cyber-security on board ships* was submitted as a detailed paper by BIMCO, the International Chamber of Shipping (ICS), INTERTANKO and INTERCARGO. Cruise Lines International Association (CLIA) has also joined the group. It is hoped to present the final industry guidelines to IMO at MSC 96.

The partners agree that the vulnerabilities have been identified as numerous, potentially serious, and the threats imminent. Their lack of connectivity has offered a certain degree of protection, but there is a general lack of understanding of the complexities of the problem, which goes far beyond the installation of firewalls. The risk increases as more of the ship and systems are put online.

The presence of third parties, such as charterers, contractors or shipyards, provides an extra dimension beyond the ship and its operators, with control of access to systems becoming a major problem and such hazards as the risk of infection from external sources becoming very real. With the ship

in the hands of a shipyard maintenance programme, or with service providers engaged with the ship’s systems, vulnerabilities are increased. The guidance suggests that during dockings, or upon delivery of a new ship, “it is impossible to know if malicious software has been left in the onboard systems”. These should be considered “uncontrolled” at this time.

Software controls and monitors all of the major systems on a modern ship, with critical equipment such as navigation systems, main and auxiliary machinery, steering, ballast and cargo handling all requiring to be protected against cyber-attacks of various kinds. It is also recognised that as well as an attack against a ship itself, perpetrators may use a ship to launch a cyber-attack against companies ashore, the authorities and other stakeholders by exchanging electronic data between ship and shore.

It has also been observed that many ships operate with outdated software, which could be less resistant to infection. BIMCO points out that any guidance adopted by the industry should be based on a risk-based approach, with different organisations, different ships, different risks and different procedures needing to be taken into account in any assessments. There is clearly a need to gauge the probability of attack and to be pragmatic and realistic about the measures to be adopted.

Risk scenarios which have been identified come in many different forms, ranging from software attacks; theft of intellectual property, equipment or information; sabotage; and extortion. There is no doubt that criminals, employing whichever hacking technology is the most applicable, often tailored to specific targets, invariably gravitate to where weaknesses have been identified.

The guidance which BIMCO and its industry partners are expected to provide to owners and operators will include how to minimise the risk of a cyber-attack through user access management, how to protect onboard systems and develop contingency plans, and in the event of an incident, manage this in the best possible way. It is also recognised that the issue is one of both awareness and education, which requires all, from the top of a company downward, to recognise the threat and ensure that the reaction is appropriate. Contingency plans need to be detailed, recognising that nobody is immune to an attack and that these need to be constantly evolving and regularly tested.



Michael Grey

Training and drills should be realistic and enable the development of contingency plans that will enable the ship to be run in manual modes. Risk management itself needs to recognise the presence of a cyber-attack, to identify where it is taking place and to put in place an effective response. The education should be tailored to appropriate levels of personnel. The whole organisation, in short, needs to be on board!

In parallel with this work, BIMCO is also working closely in a joint working group with the manufacturers’ body Comité International Radio-Maritime (CIRM) to develop industry guidelines on the updating of electronic equipment. This is important work, recognising that the resilience which needs to be built into electronic equipment starts with the manufacturers.

The new menace of cyber-attack is not for the faint-hearted, a real and present threat that will require to be taken very seriously now and in the future by everyone in the industry, afloat and ashore. In an era of increasing connectivity, the emergence of “big data” and sophisticated ships, it is essential that the risks are properly recognised and realistic and effective precautions put in place. It is perhaps ironic that most modern ships, despite being awash with complex electronics, have neither an electronics specialist nor an information technologist routinely aboard! ■■

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.

Model declaration on seafarers' compliance with environmental rules and regulations

BIMCO is committed to assisting its members to ensure compliance with environmental rules and regulations in force around the world. With this in mind, it has developed a model declaration on seafarers' compliance with environmental rules and regulations for members to use.

This new model is specifically designed to help shipping companies ensure that their employees acknowledge and comply with the company's policy to meet environmental regulations. Non-compliance can carry a high cost for companies alongside the obvious environmental implications and can also involve criminal proceedings. For example, the Act to Prevent Pollution from Ships (APPS) in the US is particularly strict on the discharge of oil-contaminated waste and keeping an accurate oil record book.

The Declaration has two main purposes:

1. To ensure that employees are aware of their shipping company's policy on compliance and that they comply with all relevant rules and regulations.

Of course employees are already under an obligation to comply with applicable rules and regulations at work, but the Declaration places an emphasis on this and should help to raise awareness and build a culture of compliance among employees. From the employee's perspective, a greater awareness and culture of compliance should serve to protect them by making it less likely that they will, knowingly or unknow-

ingly, be involved in non-compliance.

2. To provide a clear demonstration that employers/shipping companies are focused on ensuring that their employees stay compliant. This is especially important in circumstances where criminal investigations into possible violations take place. The existence of such declarations could possibly also work as a mitigating factor for the company and/or employees in cases where violations have taken place.

Using the Declaration is essentially a means of documenting that employees have been specifically and unambiguously informed about management intentions to comply and that this obligation has been understood by the individual employee by virtue of his/her signature.

The model Declaration also complements another of BIMCO's initiatives to support members in promoting such compliance, which is the new BIMCO/Fathom *Guide to Maritime Environmental and Efficiency Management*. The Guide facilitates efficient management of ships, including steps to tackle the massive and complex regulatory challenges they face on a daily basis to comply with environmental

regulations, and will assist companies in minimising the risk of non-compliance problems globally.

The model Declaration, which should be signed by both parties, states that the employee is aware of his or her employer's policy on compliance with environmental rules and regulations and will respect these at all times. The model also states that the employee will inform the master without delay about any non-compliance on board the ship.

To further promote effective reporting, it is considered that shipping companies should have an additional channel for reporting non-compliance directly to the company ashore. This channel would be used in cases where reporting to the master is not possible or may compromise the reporting employee's position. This additional channel could be to the Designated Person Ashore (DPA), as mentioned in the International Safety Management (ISM) code. The DPA should be a person within the shipping company who would have the authority to take appropriate action, while respecting the duty of confidentiality of the reporting employee. The other benefit of providing a DPA as such a channel is to avoid delays in employees reporting any non-compliance on board the ship.

For example, there have been a number of cases in the US in which whistle-blowers have waited until reaching a US port before notifying port state control authorities about violations. With this in mind, clear and direct contact information for the reporting channels should be included when filling out the Declaration on the next page.

The model Declaration may either be presented to the employee as a standalone document when signing on as crew on one of the employer's ships or could be annexed to the employment contract itself – as is often done for similar declarations on compliance with drugs and alcohol policies. Presenting employees with a standalone Declaration when they join the ship has the advantage of facilitating its introduction into the already existing terms of employment.

While the model Declaration may, in principle, be used in all jurisdictions, its second paragraph has been drafted specifically for use in terms of employment involving US waters, in recognition of the particularly strict environmental compliance required in that area.

BIMCO fully recognises that some shipping companies will already have devel-

Model

Standalone Declaration or Annex to Employment Contract:

Declaration on Seafarers' Compliance with Environmental Rules and Regulations (to be filled in and/or amended as necessary)

1. This declaration reflects that commercial and environmental consequences of a lack of compliance with environmental rules and regulations is of great concern for the undersigned Employer. Avoiding non-compliance ensures the ship's continued ability to trade and reduces the risk of a negative impact on the environment resulting from the operation of the ship.
2. The undersigned Employee, by the signature of this Declaration, declares that he/she is fully informed about, and aware of, the undersigned Employer's policy on strict compliance with all relevant US marine environmental standards, including specific provisions in the US Act to Prevent Pollution from Ships (APPS) concerning discharges of effluents and/or oil-contaminated waste and maintenance of an accurate oil record book. The Employee has received a copy of the Employer's policy on compliance to this effect.
3. The undersigned Employee undertakes to ensure compliance at all times with the above-mentioned rules and regulations and inform without delay the Master of the ship about any non-compliance on board the ship. Alternatively, in circumstances where reporting on board is not possible or may compromise the reporting Employee's position, any non-compliance can be reported in full confidentiality to [a named shore-based entity, eg the chief operating officer (COO) or DPA of the shipping company]. This obligation applies regardless of by whom this non-compliance has been carried out.
4. It is considered a serious breach if this declaration is not respected by the undersigned Employee. It can have severe consequences for his/her future employment with the undersigned Employer, including termination of the employment contract in accordance with the terms of that contract.

_____	_____
Employee	Employer
_____	_____
Place	Place
_____	_____
Signature and date	Signature and date

oped and use declarations on compliance similar to the model below and may have no need of this guidance. Rather, the model is intended to be useful to companies which do not have such declarations and may not have the capacity to develop them. Use of the model Declaration is entirely voluntary, and BIMCO recognises that it will not be relevant for all companies to do so. BIMCO assumes no respon-

sibility of any kind in relation to the model Declaration's use or non-use, and regardless of whether it is used in its original or a modified form. ■■

Bridge resource management training

The BIMCO marine department was invited to attend a 3 day bridge resource management (BRM) course at the Marstal Navigation School (MARNAV) in Denmark in April 2015.

The BRM course is conducted in accordance with Standards of Training Certification & Watch-keeping (STCW) code including 2010 Manila amendments section A-II/1, section A-II/2 and section A-VIII/2 (related to navigational watch-keeping), and the training also followed the recommendations in STCW code section B-VIII/2 Part 4-1.

In addition, the training also covered the following:

- The US requirements of 33 CFR 157.415 for bridge resource management policy and procedures

- The requirements of the Norwegian regulations of 22 December 2011 No. 1523 concerning qualifications and certificates for seafarers

The course instructors were trained as maritime navigators holding Masters' certificates. The instructors have continuously updated their skills and competencies by participating in relevant courses, active sailing as super-numeraries and participating at IMO meetings as technical advisors to the Danish maritime administration.

The BRM training course, entailed all aspects of the regulatory framework and

the capacities and limitations of bridge resource management (BRM). The course attendees comprised a good mix of active service ship mates and masters, both in short-sea and worldwide trades.

The BRM training is designed, to ensure that navigators are able to understand the human factors and interpersonal interactions in the context of:

- Bridge watch-keeping and command
- Manoeuvring and navigation
- Demonstrate competencies and skills regulated by STCW

Also at ensuring that navigators understand the fundamental aspects of resource management and how to apply it during command and navigational duties.

The 3 day course was conducted with a balanced combination of theory and practical exercises with actual mission simulators.

The theory parts included:

- Legal aspects - IMO requirements
- Introduction to BRM strategies
- Definition of good Bridge Resource Management
- Evaluation of role play - maritime type / group compass (MTG)
- Evaluations of all sessions

The simulator training included operating:

- With a mix and remix of the bridge management team members
- Multiple ship types
- Different locations including confined sea areas





- Various conditions such as, day-night time, reduced visibility, heavy sea, etc.

During each simulator exercise, the individual bridge management teams had to manoeuvre and navigate challenges whilst coping with everything from equipment failure and engine black outs to on board fires and man-overboard situations.

As the inserted images illustrate it was hard for participants to distinguish between virtual reality and real life situations.

In fact, it was noted that shore side office personnel in some cases could benefit from attending the BRM or BTM course in order to be acquainted with the conditions and workload experienced by the officers on the bridge as well as having the chance to manoeuvre and navigate ships in an almost real life mode. ||



For more information: MARNAV office is situated on the island of Ærø (Aeroe) in the southern part of Denmark. For further information regarding MARNAV and the BRM course please refer to the website: www.marnav.dk

For enquiries regarding BRM and related matters, please contact BIMCO marine department at: marine@bimco.org

Please include your company name and BIMCO membership registration number (if applicable) for us to assist you.

Simulation – preparing for the unexpected

Simulator training has long been recognised as one of the most effective methods of providing experience, skill and competence in a safe and economic fashion.

Since the early bridge simulators, which were used to teach basic anti-collision procedures, simulation has come a very long way, aided by spectacular software advances and the development of computer-aided imagery. “Full mission” simulators can now provide an authentic training experience for whole bridge teams in pilotage and ship-handling situations, identifying weaknesses and building confidence. The individual cadet’s skill can be enhanced and maintained by some very useful training in “Rules of the Road” with programs available for personal devices.

Many types of simulator training can be “adjusted” to be ship- or equipment-spe-

cific, and huge combinations of situations can be run and replayed to gain the maximum benefit for the participants. The techniques of simulation have moved from the bridge to the engine room, as has cargo and ballast control for oil, chemical and gas tankers. These engine room functions are also benefiting from some exciting developments in technology that will provide marine engineers with similarly authentic training experiences.

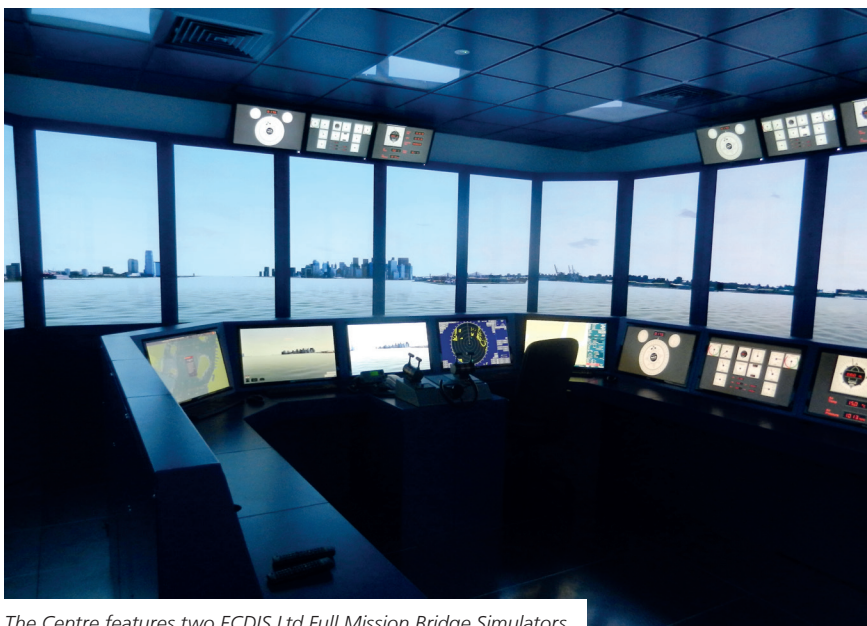
Simulation can be used to “rehearse” complex evolutions, such as berthing large ships in unfamiliar ports, or even undertaking a difficult technical maintenance task. Interactivity between simulators has become perfectly possible so that a number of ship teams can be trained together

or ships and tugs can become familiar with their interactions. It has become a useful tool in the development of new ports or berths, making sure that the designs of port engineers are fully feasible, by “testing” them with simulated ships with the exact characteristics of those for which they are planning.

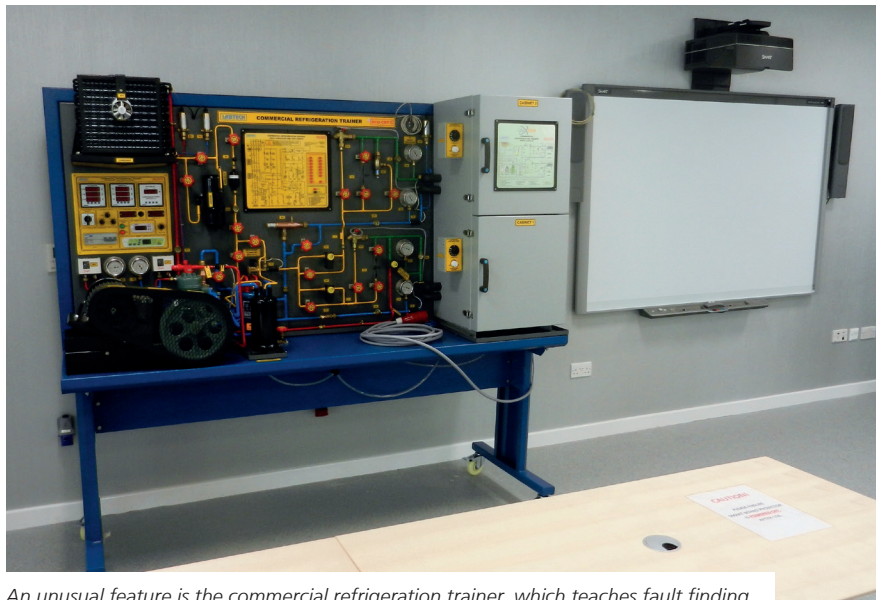
Some individual shipping companies have opted to go rather further down the road of simulator training, by developing their own facilities, rather than depending on what is on offer at training colleges. They recognise the limitations of statutory provisions, while also seeing the advantages of training their crews in the “company way” of operating their ships.

Tanker operator Chevron Shipping Company LLC, which operates a fleet of 30 ships ranging from Jones Act tankers on the US coast to crude tankers and liquefied natural gas carriers (LNGCs) in international trades, is a company with a long pedigree and close attachment to training. Unusually in this day and age, Chevron Shipping supports cadet training voyages by hosting up to 12 cadets and a specialised training officer aboard 12 of its working ships.

Chevron Shipping has enjoyed a long relationship with Stena’s Northern Marine Group (NMG), who are headquartered in Clydebank, Glasgow. This relationship evolved further in 2014 with the commissioning of the Chevron Centre of Learning and Development within Scotia House, the latest additional building on the NMG Clydebank campus.



The Centre features two ECDIS Ltd Full Mission Bridge Simulators with bridge wing simulation.



An unusual feature is the commercial refrigeration trainer, which teaches fault finding.

According to Chevron Shipping’s principal engineering instructor, Paul Fairbrother, in developing its own specialised facility Chevron Shipping was looking for “better value for its training money”, and after studying what was available around the world, concluded that its own operation, with its own team of instructors, could provide this result. It is the “value in people” that makes the difference when comparing what is on offer, as much as the equipment available, and to be able to customise the company’s training needs was seen as a major justification for this USD 20 million investment on the Clydebank site, which was fortuitously available next door to NMG’s Alba House, where the training centre was constructed. Scotia House was opened, with due ceremony, last October.

“Learning and development” is a good description of what the operator is undertaking in this brand new facility, where it is possible to focus on the specific needs of the tanker operator and its personnel. The overarching requirement, perhaps not unnaturally in such a safety-critical sector, is “avoiding the big incident” by managing the risks which, in particular, stem from the human element. It is about “safe” training, knowing how to deal with the unexpected, being prepared to cope with contingencies and, through this process, building confidence.

The needs of the Chevron Shipping fleet are reflected in the equipment that has been installed in the centre. Two ECDIS Ltd full-mission bridge simulators are available, each with bridge wing simula-

tion and special facilities for practice in both berthing and ship-ship cargo transfers, something that Chevron Shipping undertakes on a regular basis. These are backed up with six ECDIS Ltd mini bridge simulators, which can be employed for initial training before bridge teams are put together in the full-mission facilities. One quite unusual facility is the ability to link the simulators with those in other parts of the world. Chevron’s ships, for instance, make regular transits of the Turkish Straits, and through linking with Turkish simulator equipment, it is possible to undertake real-time training with the skippers of the tugs which will accompany the big ships through the tricky waters of the Bosphorus.

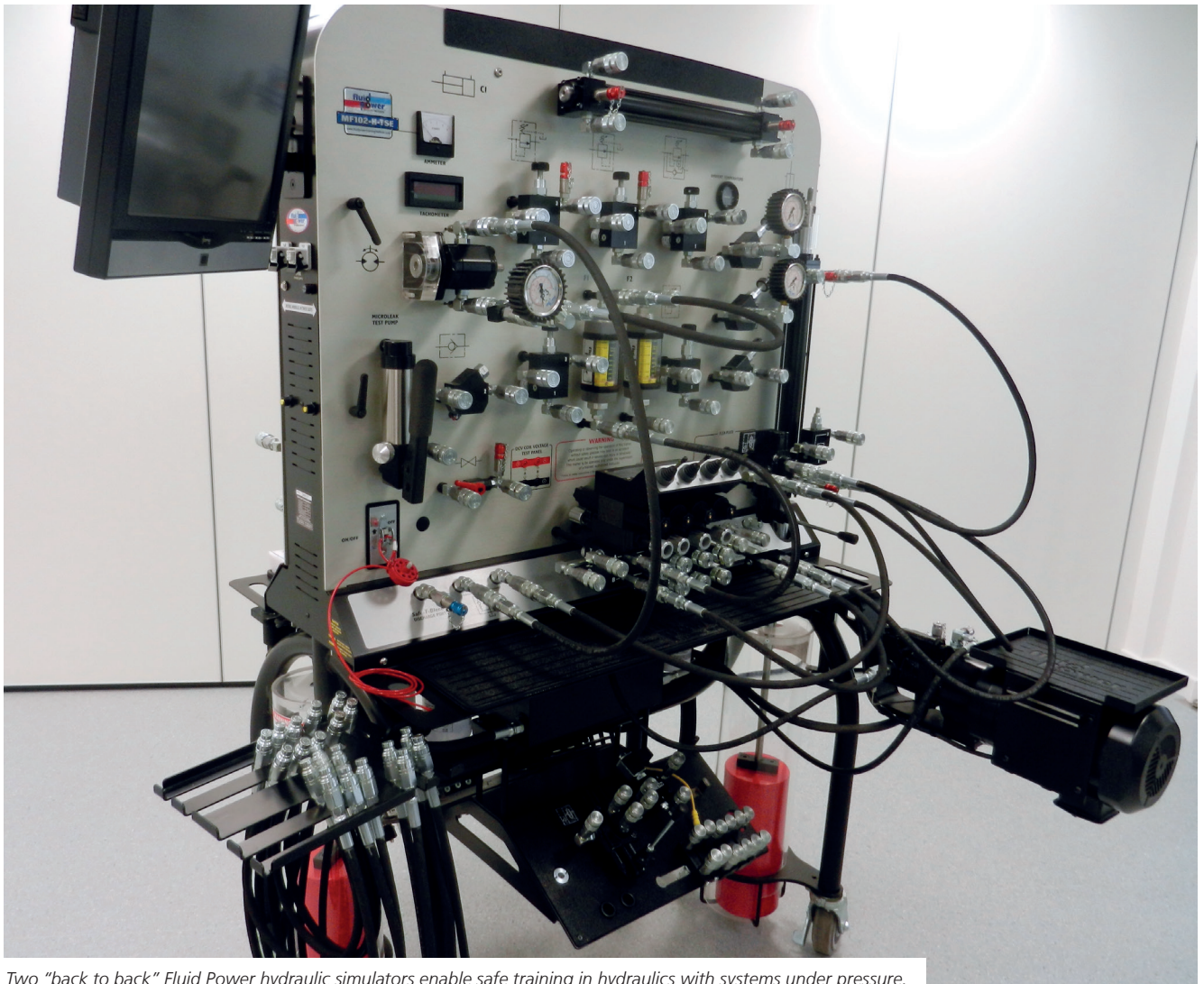
Interestingly, it is the policy of Chevron Shipping to regularly assess senior officers, and the simulators provide a good tool for this assessment, which is additional to any statutory revalidation requirements. The assessment undertaken in whole-team situations, for instance, will provide useful insights into where bad habits might have been allowed to appear and where necessary improvements can be identified. Very often, points out Paul Fairbrother, the officers themselves are their own strongest critics in the subsequent review of an exercise. It is not the object to “fail” officers, but rather to help to develop their competences, and the simulator is an ideal tool in which improvements can be practised and a satisfactory conclusion witnessed.

The facility contains an L3 full-mission engine room simulator with some extraordinary software which enables an engineer

officer to “walk through” an authentic machinery space, using a system developed from Google “street view” techniques. This space is sited adjacent to the engine control room and switchboards, so the engineer can exit into the noise and feel of it. By using a wall-mounted screen, the engineer can walk around the whole machinery space to become familiar with it and identify the tasks that have to be undertaken, such as fault-finding or tracing systems.

Knowing what procedures to follow in unexpected emergency situations, such as a blackout, is clearly crucial, and the equipment which provides emergency switchboard emulation enables the engineer to take a simulated journey to the emergency generator room and follow the correct procedures for restoring power in the event of such an occurrence. The equipment can also provide a realistic scenario for ensuring that the engine room personnel function as a team, responding properly to emergencies and effectively testing the leadership qualities of senior officers, in the same way that the bridge simulators evaluate those of senior deck officers.

There is a facility devoted to “tactile” training in which there is some unusual equipment specially designed to address weaknesses, perceived by the company’s gap analysis, in the training of engineer officers, whose courses of study tend to treat the subjects of refrigeration and hydraulics somewhat lightly. Both, says Paul Fairbrother, are very important elements, so engineers attending will be able to enhance their knowledge of refrigeration



Two “back to back” Fluid Power hydraulic simulators enable safe training in hydraulics with systems under pressure.

systems using a Labtech international commercial refrigeration trainer. This usefully compact but fully working self-contained refrigeration system replicates all the principles and will enable those working with it to trace the lines, fault-find and become more confident with equipment which is essential in climate control and the maintenance of cold spaces aboard ship.

Hydraulics has also been identified as a potential problem area, and an ingenious pair of Fluid Power hydraulic simulators forms part of the “tactile” outfit. This fully functioning, pressurised system enables officers to become comfortable working with hydraulics, fault-finding and carrying out repairs as necessary. Something that is quite important in this process is the need to avoid unnecessary waste in such repairs, so learning to take a fully analytical approach is clearly of considerable benefit. Chevron has also recognised that in addition to engineers, chief offi-

cers who have a lot to do with on board hydraulics would also benefit from time on this simulator. This diagnostic tool is also going to be made available on a regular basis to Stena officers, whose ro-ro tonnage employs a great deal of hydraulic equipment, vital to the ship’s operation.

A MAN B&W 50-98ME engine control system simulator is also available, so that fault-finding and repairs can be undertaken on what is a virtual replica of the equipment fitted aboard a number of the units in the fleet. One of the objectives of this equipment is to help engineer officers, aboard ships where the tendency has been to see longer periods between servicing, be in a better position to keep the machinery running optimally without the expensive intervention of service engineers from manufacturers.

The whole facility, being purpose-built for learning and development, is also well

equipped with training rooms fitted with Smart Board technology and video-conferencing facilities.

As a simulation facility, the Centre of Learning and Development at Scotia House represents some of the latest thinking in this type of training. But it perhaps should be seen as a powerful tool in the development of the human element – the people who will keep Chevron’s ships safe and efficient. The technology may be state of the art, but the leadership, analytical thought, communications, teamwork and responsiveness to the unexpected contingency are its essential end products. ■

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.

Fuels for the future

The 2014 Conference held in Stavanger, Norway was a great success with 200 attendees from ship owners and operators to engine manufacturers and classification societies.

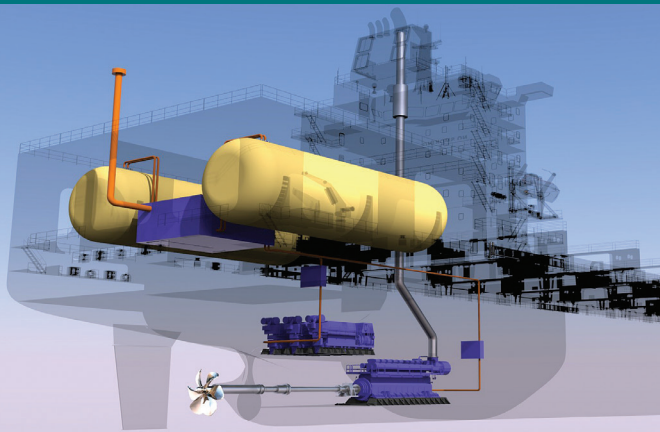
The 2015 conference will continue to address the implications, challenges and benefits of using LNG as a maritime fuel. In addition, the conference will look at other 'fuels of the future', for example methanol and ethanol, that are either already being used or are currently being trialled in readiness to help ensure ships comply with the ongoing ECA regulations.

For further information about speaking, sponsoring or attending as a delegate, please email gasfuelledships@motorship.com or call the Events Team on +44 1329 825335 or www.motorship.com/gfsconference

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Unsafe port claims – a club perspective

Following the recent appeal of the “*Ocean Victory*,”¹ there has been a renewed interest in the topic of unsafe ports. Although there has been much discussion of the legal points raised by the Court of Appeal’s decision, this article intends to give an insight into unsafe port claims from the perspective of the insurers who, in reality, often drive such claims.

Writing from the perspective of the UK P&I and Defence Clubs, we saw over 100 unsafe port cases and enquiries in the last policy year, with a clear increase in enquiries year-on-year. The recent “*Ocean Victory*” decision is unlikely to quell that trend since it has done little to ease the uncertainty as to what is an unsafe port.

From our experience handling claims for both shipowner and charterer members, we know that both parties want clear boundaries of risk. Shipowners want to know that when they place their ship into the hands of their charterers, the charter party will protect them from any damage incurred at an unsafe port. On the other hand, charterers cannot foresee every possible disaster that may befall the ship even at a well-run port, such as *Kashima*, and it would be unfair to place too high a burden of responsibility on them, effectively turning them into the ship’s insurers. The task that the English courts typically face, of striking a balance between the two commercial interests is undoubtedly not an easy one, yet it is important.

Variety of claims

The types of unsafe port claims that the clubs see are numerous and varied. The vast majority concern straightforward physical damage to ships occurring either when static (for example, bad weather may have

resulted in mooring ropes being broken or ranging damage occurring) or in transit (incidents such as groundings, arising from a ship entering, leaving or proceeding to a particular port including approach passages, such as river transits).

An interesting feature of unsafe port cases is their tendency to move with the times. For example, as ship sizes increase, smaller ports may become unsafe for the larger ships that are using them. Economic flux means that some ports or berths may fall into disrepair and become unsafe during periods of hardship. Ever-improving safety standards mean that ports that fail to keep up may fall into the realms of unsafety.

Perhaps most interestingly, questions of port safety also tend to arise in conjunction with significant international events, such as political unrest, war or natural disasters. A wave of related disputes or queries from members usually accompany such events. A safe port can become an unsafe port extremely quickly, and the Defence Club is often the first “port of call” for shipowners querying whether they are entitled to refuse to follow charterer’s orders to proceed to an area that has, in their perception, suddenly become “unsafe” owing to an intervening event, or for charterer members seeking reassurance that their orders are legitimate and should be followed by their counterparts. In such cases, the safe port warranty is relied upon as a preventative measure to avoid visiting a port that appears to be unsafe, rather than a reactive measure to recover losses already incurred.

In terms of civil unrest and war, there are the well-known historical examples of unsafe port cases involving the Iran/Iraq war, such as the “*Evia*”² and the “*Chemical Venture*”,³ as well as the “*Saga Cob*”,⁴ which was subjected to guerilla attacks at the Ethiopian port of Massawa in 1988. More recently, the Defence Club has seen questions of port safety arising, for example, out of the ongoing civil unrest during the last few years in Egypt, Libya and the Middle East that came to be known as the “Arab Spring”; the Russian incursions into the Ukraine and resulting effects on the strategic port of Sevastopol; and the current conflict in Yemen. The increasing prevalence of piracy in certain areas of civil dissatisfaction has also provoked questions as to whether a port where there is a high risk of piracy is “unsafe”. Often, such issues will be dealt with by a war risks or a piracy clause in the charter party. BIMCO has developed various standard war and piracy clauses which are now in common usage. Typically, these clauses give the master an option to refuse to go to an area which will expose the ship and crew to war or piracy risks. However, the interplay between such clauses and matters of port safety still has the potential for uncertainty.

Significant one-off incidents in a particular port or region also regularly give rise to questions of port safety, for example, the

¹ [2013] EWHC 2199 (Comm)

² [1982] 1 Lloyd’s Rep 334

³ [1993] 1 Lloyd’s Rep, 508

⁴ [1992] 2 Lloyd’s Rep, 398 and 545 (Court of Appeal)

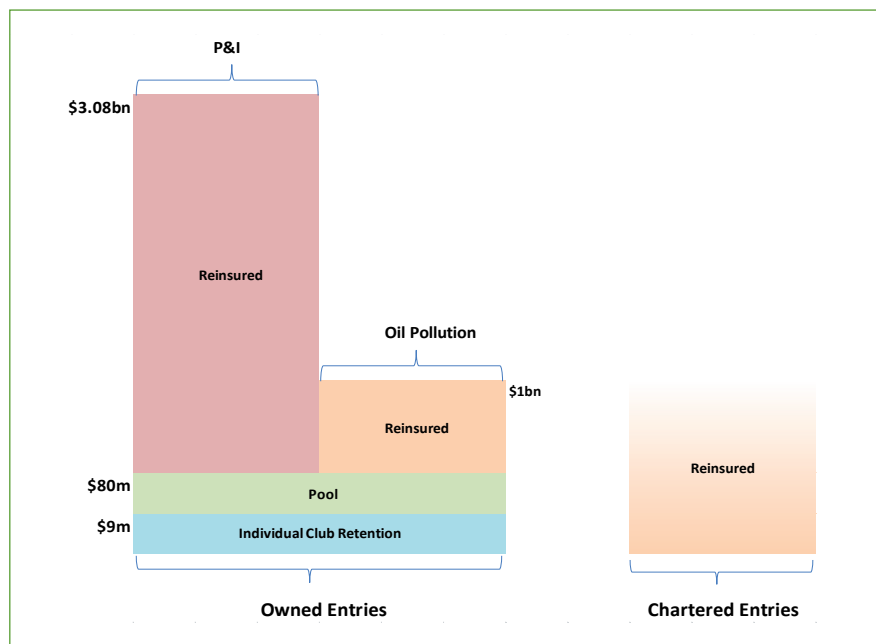
explosion on the Deepwater Horizon rig 130 miles south-east of New Orleans in 2010, which resulted in oil pollution affecting ports in the Mississippi River; the radiation leaks from the Fukushima nuclear plant in 2011, which produced a wide-reaching area of radioactivity encompassing ports that were not closed, yet still potentially contaminated; and outbreaks of infectious diseases, such as the SARS epidemic in East Asia in 2003 and the recent severe outbreak of Ebola affecting a number of major ports in west Africa. Although in the previous examples, many affected ports remained open, possibly owing in part to commercial influences, the prospect of visiting such ports undoubtedly raised concerns in relation to the safety of the ships and their crew, both at the affected ports and at subsequent ports where they might be detained or quarantined for fear of spreading contamination. In response to both the Fukushima disaster and the Ebola outbreak, BIMCO produced a Radioactivity Risk Clause and an Infectious or Contagious Diseases Clause. In the absence of such clauses in charter parties at the relevant time, uncertainty prevailed as to the ability of shipowners to refuse to follow their charterers' orders to proceed to an affected port.

These are just a few examples, giving a general flavour of the variety of unsafe port concerns that affect the Clubs' Members on a regular basis, even though many will never reach court or arbitration.

Potentially very high-value claims

Unsafe port claims tend to place Club case handlers in a state of alert because of their potential for high legal costs and liabilities. Although the Clubs see low-value claims in respect of such matters as broken mooring lines, which never reach court or arbitration, unsafe port disputes do have the potential to produce some of the largest cases in terms of liabilities and legal expenditure.

A modern ship, particularly one laden with cargo, is likely to have a very high value and can represent a high risk. Following a casualty, the costs of repairing the ship may amount to only a small proportion of the losses alongside claims from the owners of the berth, loss of hire, cargo loss or damage and knock-on consequences, and salvage costs, and if there is pollution, then even a minor incident has the potential to produce



very significant losses and liabilities. By way of illustration, you only need to look at the example of the "Ocean Victory", which involved claims of about USD 137.7 million.

Added to the potential liabilities involved, the legal costs of handling these claims can be extensive. Owing to the subjectivity of the law on unsafe ports, and the sensitivity of such cases, there is invariably scope for in-depth legal argument and divergent expert opinion, usually as to what the master should have done and whether any alleged intervening negligence was causative, together with in-depth analysis of documentary evidence and witness statements. Given all these factors, the legal costs can end up in the high hundreds of thousands. There is also the inevitable litigation risk that the losing party will incur a double-cost exposure, taking on the liability for the winner's costs as well as its own.

Insurance interests

In practice, unsafe port claims are often driven by the shipowner's insurers, who cover most of the costs and liabilities in the first instance and may then seek to recover them, in the subrogated shoes of their assured, from the charterer and, if it has one, its insurer. As with any casualty, there will be a number of interested insurers who, typically, will co-operate and share the costs pro rata to their financial exposure.

The shipowner will have P&I insurance in respect of any third-party liabilities, such as pollution, wreck removal, dock damage, cargo loss or damage or personal injury. The shipowner's hull insurance will cover

damage to the ship, together with any salvage or general average (GA) liabilities. Cargo interests will make appropriate contributions to GA Loss of hire insurance (if it has been purchased) may cover any loss of hire. The shipowner will, of course, bear their deductibles in relation to all of these insurers. Defence insurance will cover legal fees, typically pro rata to the Member's own financial exposure for uninsured non-P&I liabilities.

Meanwhile, charterers similarly have P&I and Defence insurance. They will often also have damage to hull (DTH) cover. This will respond to any claims passed down by shipowners (or their hull underwriters) in respect of damage to the ship, salvage, GA and other risks that are covered by the shipowner's hull insurer in the first instance. Typically, the charterer will have access to P&I cover for the same P&I risks faced by the shipowner.

This diagram above illustrates the key differences between owners' and charterers' cover:

Charterers' cover is not shared or pooled among the International Group clubs. It is also typically subject to a fixed limit at a level much lower than a shipowner's P&I cover. Charterers will often have P&I and DTH cover with the same underwriter subject to a combined single limit (CSL), which will vary for each individual charterer. Charterers will decide how much cover to purchase depending on factors such as their financial capacity; their risk appetite; the size, type and value of the ship; where

it trades (for example, it might be subject to higher liabilities in the US); and whether the company is listed on the stock exchange (in which case, its shareholders may require the assurance of higher cover). In very general terms, charterers might purchase cover with a CSL ranging from about USD 25 million up to several hundred million dollars, perhaps averaging around USD 100 million to USD 200 million. Importantly, it is nowhere near as high as the cover available to shipowners.

So when liability falls on the charterer for a high-value unsafe port incident, a charterer could be left uninsured in respect of liabilities which exceed their agreed CSL. The shipowner's insurers, which are likely to have borne the costs of an incident in the first instance, may only be able to recover from the charterer up to the limit which is insured by the charterer's insurer. In practical terms, it may be the case that the charterer may be unable to pay the uninsured balance.

The situation may be further compounded if the charterer's insurer itself cannot cover the insured element of the claim. This may be the case if the charterer's insurer takes a coverage point, or if the charterer is not insured with an International Group club or an insurer which is financially strong enough to withstand many potentially large claims. It can also be harder to obtain security from a non-International Group club or insurer.

It is common for a charterer to stipulate that a shipowner should be insured with an International Group club or "A" rated insurer as a minimum. Typically, however, this charter party obligation is not reciprocal. In uncertain economic times, shipowners may want to examine their charterer's insurance arrangements in greater detail to satisfy themselves that the charterer and its insurers would be able to weather potentially large unsafe port claims.

Concluding remarks

Unsafe port claims can have a huge financial impact on shipowners, charterers and their insurers. While there is uncertainty in the law, these claims will continue to be commonplace. Clearly more clarity and certainty in the law as to port safety would be welcomed by our shipowner and charterer

Bridging gaps between shipping sectors

For more than 20 years, the London Shipping Law Centre (LSLC) has provided a vehicle for education, training and information exchange, with a programme of seminars and debates on maritime legal, commercial and technical issues. As its founding president, Lord Mustill, noted about the close connection between law and shipping, at the inauguration of LSLC – "There can surely be no other branch of commerce where the practical people know, and need to know, so much of the law, and where professionals know, and need to know, so much of the practice". LSLC, founded in 1994 by Dr Aleka Mandaraka-Sheppard at the law faculty of University College London, has continued to bridge the gap between the various sectors of the shipping industry, the judiciary, lawyers, academic institutions, and maritime and governmental organisations, for the purpose of exchanging knowledge in the practice of maritime law and commerce.

Supported by the judiciary, with a distinguished governing body and council, LSLC maintains an extensive library archive available to its members, many of whom are young legal practitioners specialising in maritime and commercial law. Its annual Cadwallader lectures and debates are well-attended special occasions, while its seminar programme is designed to provide useful insights into topical maritime legal issues throughout the year.

The recent seminar on Unsafe Ports, from which Philippa Langton's article, published in these pages, is drawn, might be considered a typical occasion on which an important and very topical matter of legal interpretation was viewed from a number of different standpoints. Some 200 people attended the event, held in Thomas Miller's London headquarters, to hear legal, technical and commercial perspectives of an age-old matter which was being given a fresh topicality, both because of a recent Court of Appeal judgement on the *Ocean Victory* case, and the explosion in ship sizes, which might be expected to precipitate more problems along these lines.

The audience listened to and were able to question Simon Kverndal QC, who provided the legal framework of unsafe port case law. Captain Kevin Richardson, president of the International Harbour Masters' Association, spoke of the role of the harbour master, and Philippa Langton of Thomas Miller (Defence) considered the insurance issues. Finally, David Handley of Clyde & Co, who is a master mariner, considered the master's situation in this complex matter.

Thus the audience was able to listen to a balanced explanation of how law, commerce, practical seamanship and professional practice all blend and have a critical part to play in such crucial questions. The LSLC programme of seminars continues to go from strength to strength.

Members alike in the hope of a reduction in high-value, high-cost claims.

The Ebola example highlights the predicament that shipowners can be placed in, as a result of the lack of legal clarity, when faced with a port that may be unsafe. The high burden of proving unsafety means that a port will often be perceived by a ship's crew to be unsafe even though it may not be so in legal terms. This can be very frustrating and hard to comprehend for a shipowner and the crew. With the Ebola situation, crews were genuinely fearful of the prospect of visiting an Ebola-affected port, yet their masters had no choice but to take them there nonetheless. The risks to which a shipowner is exposed if he should get it wrong – of placing himself in repudiator breach for disobeying legitimate orders and

potentially giving the charterer the right to terminate the charter and claim damages at the charter rate for the balance of the charter period – are often finely balanced. Unfortunately, following the success of the "*Ocean Victory*" appeal, it appears the master is likely to remain very much "on the horns of a dilemma" when faced with a potentially unsafe port. ■■

Editor's Note: Philippa Langton is Senior Claims Executive with the UK P&I Club and UK Defence Club. This article is based on a paper she gave at the Unsafe Ports Seminar in London, organised by the London Shipping Law Centre.

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Ballast water treatment

A never ending story, from riddle to reality

When the International Maritime Organization (IMO) members agreed to the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWMC) in 2004, expectations were high that this would become a widely accepted tool to reduce the risk of new introductions of non-indigenous species through ships' ballast water. The confidence in this new regulation was so high that even specific dates were included in the text of the convention, as to when certain types of ships would have to apply to the BWMC. However, reality taught us that this approach was a little over-optimistic. Today, one decade later, and after about one million conferences, specialist workshops and meetings, we are still looking at a BWMC that is not in force, because the magical number of 35% of the world's merchant fleet tonnage has not signed up to it, yet.

But let's look back a bit. After the first very enthusiastic moments, it became obvious that there were still a lot of concerns to be addressed regarding the implementation of the BWMC. The first big problem to be solved with respect to the treatment of

ships' ballast water was how to treat very different water qualities at high flow rates to the level that is equivalent to the D2 standard. We all know that the D2 standard does allow for only 10 viable organisms/m³ of the larger organisms (>50µm), as well as 10 viable organisms/ml in the size group of 10µm to 50µm. Furthermore, the numbers of certain pathogens (indicator organisms) should not exceed thresholds similar to drinking water standards or to the tolerated levels in public swimming pools.

Despite the numerous technical challenges, dozens of projects were started on a global scale with tremendous financial efforts. These projects looked at very different technologies, or at combinations of technologies, that could be used to treat the ballast water to the required D2 standard. Proudly presenting their first-generation ballast water treatment systems to the industry,

the developers looked into the anxious faces of shipowners, who were deeply concerned about the practicable aspects of ballast water treatment. From their point of view they were confronted not with one but two major questions: where could they install such huge treatment systems on a commercial ship, and who is going to cover the enormous costs? And as if this were not enough, the administrations themselves were challenged with another big problem: how could they test the new systems for compliance, and how should they implement the new regulations?

All of the above stakeholders started very ambitiously on this new endeavour, and all of them quickly realised that the new BWMC included a lot of uncertainties and unknowns. To address these concerns, a highly complex set of guidelines was adopted by the IMO members to help with



Guidelines for the uniform implementation of the BWMC (Source: www.imo.org)

- Guidelines for sediment reception facilities (G1) (resolution MEPC.152(55))
- Guidelines for ballast water sampling (G2) (resolution MEPC.173(58))
- Guidelines for ballast water management equivalent compliance (G3) (resolution MEPC.123(53))
- Guidelines for ballast water management and development of ballast water management plans (G4) (resolution MEPC.127(53))
- Guidelines for ballast water reception facilities (G5) (resolution MEPC.153(55))
- Guidelines for ballast water exchange (G6) (resolution MEPC.124(53))
- Guidelines for risk assessment under regulation A-4 of the BWM Convention (G7) (resolution MEPC.162(56))
- Guidelines for approval of ballast water management systems (G8) (resolution MEPC.174(58))
- Procedure for approval of ballast water management systems that make use of Active Substances (G9) (resolution MEPC.169(57))
- Guidelines for approval and oversight of prototype ballast water treatment technology programmes (G10) (resolution MEPC.140(54))
- Guidelines for ballast water exchange design and construction standards (G11) (resolution MEPC.149(55))
- Guidelines on design and construction to facilitate sediment control on ships (G12) (resolution MEPC.209(63))
- Guidelines for additional measures regarding ballast water management including emergency situations (G13) (resolution MEPC.161(56))
- Guidelines on designation of areas for ballast water exchange (G14) (resolution MEPC.151(55))
- Guidelines for ballast water exchange in the Antarctic treaty area (resolution MEPC.163(56))

the implementation of the new convention. But as time progressed and as more practical experiences were gained, the need to modify and/or update some of the guidelines became a pressing issue. Most of the guidelines are finalised by now (see box below).

However, some of these guidelines could still be regarded as “living documents”. This is particularly true for the crucial guideline G8 (guideline for approval of ballast water management systems). This is currently under review, again. The revised guideline should tackle a number of concerns that are not clearly defined in the current regulation, such as salinity regimes for the land-based tests or aspects of different water temperatures on the treatment efficacy. Overall, it should help to increase the confidence of the industry in the new and highly complex task of ballast water treatment. At the same time, it should enable developers and ballast water treatment manufacturers to use at least some of the data produced during IMO type approval testing, for their dossier and application for United States Coast Guard (USCG) type approval. Unfortunately, the revised guideline G8 will most likely not become available before late 2016, or even early 2017. This may coincide with the entry into force of the BWMC.

Although the additional testing requirements that are currently developed for the revised G8 guideline may help to identify robust technologies, they may also result in the disappearance of ballast water management systems that have already been type approved, because the vendors are not willing, or simply are not able, to carry the substantial additional costs for these tests.

During the most recent IMO meeting, Marine Environment Protection Committee (MEPC) 68, the work on a smoother implementation of the BWMC continued. One of the key aspects was the “non-penalisation of early movers”. This discussion answered the concerns of those stakeholders who have been proactive, and who now

fear that they may be confronted with additional costs if equipment would have to be replaced, or that they may have to enter into ongoing discussions with Port State Control if the managed ballast water should occasionally not be able to reach the D2 standard at discharge.

With the BWMC most likely to enter into force during 2017, it is very difficult for the industry to wait another couple of years before selecting the most suitable BWMS for their fleet. In the absence of any US type approved BWMS, or any BWMS that was tested according to the revised G8 guideline, the current challenge for the industry is to identify those BWMSs that have the potential to meet the future requirements under more challenging test conditions. But there is light at the end of the tunnel, because most of the testing criteria that will be included in the revised G8 guideline are already known. Furthermore, there are four criteria that can easily be checked for all of the BWMSs currently available:

1. What salinity regimes have been included in the type approval tests?

One of the key requirements will be



Dr Matthias Voigt – R&D Director, Cathelco GmbH

testing in truly different salinities, ie freshwater, brackish water and marine conditions. For the moment shipowners may find it helpful to have a look at the summary table of AMS (Alternate Management Systems) that is published by the USCG. This summary also gives details of the salinity ranges that the BWMSs were approved for as an AMS in US waters. This table is regularly updated and can be downloaded at <https://homeport.uscg.mil/>. Simply go to the Environmental Section/Ballast Water Management Program and look for Alternate Management Systems (AMS).

2. Is there transparency of type approval information?

Another very helpful source of information are the notifications of type approvals from the flag state Administrations



to the IMO. They are published as so-called “INF papers” at every MEPC meeting. The more details that are presented in those reports, the better the transparency about the relevant BWMS. In any case, information on any limitations of the system operation should be included in the reports, and preferably in the Type Approval Certificates as well.

3. What are the self-monitoring abilities of the BWMS?

It is well understood that each BWMS should record the system operational parameters during each ballast water operation. These data should be stored for a minimum of two years on board the ship. However, the efficacy of each of the ballast water treatment technologies may be influenced by different water-quality parameters. Therefore, any BWMS should not only record the specifics of each ballast water operation (ie start, stop, uptake or discharge, location, volume of ballast water handled, relevant disinfection parameters/dose, neutralisation if applicable) but also monitor and record any system failures. Furthermore the BWMS should record those water-quality parameters that may limit the system’s operation. These parameters



are specific to each treatment technology. For example, a UV-based system should always monitor the UV transmittance of the water, because this is the key parameter for the system’s limitations.

4. What is the background of the BWMS manufacturer?

This is a crucial factor when it comes to the selection of a BWMS. The manufacturer should not only be familiar with the species requirements of the maritime industry but also be able to support the individual BWMS installation and operation, wherever the ship may need the assistance. On a global scale, this can only be achieved by those manufacturers who have an established network of support. Furthermore it is imperative that the manufacturer has the financial strength to support his BWMS, particularly dur-

ing the required type approval process for USCG type approval and/or renewal of the IMO type approval according to the revised G8 guideline.

Cathelco also have developed a BWMS. Their technology is based on a combination of filtration and UV disinfection. The Cathelco BWMS has received IMO type approval in 2014 and it is recognised as one of the very few AMS by the USCG that can be operated in each of the different salinities in US waters. Cathelco would be more than happy to share the available information regarding the above criteria with interested shipowners. ■■

Editor’s Note: Matthias Voigt joined the Cathelco Group in 2010 as Research & Development Director, based at the company’s R&D centre in Kiel, Germany. Matthias and his team have focussed on the development of Cathelco’s ballast water treatment system. The German Administration (BSH) granted type approval to the Cathelco BWT system in April 2014 and it has since received U.S. Coast Guard AMS acceptance.

The ballast water background of Matthias reaches back to 1998, when he became partner in the EU Concerted Action on “Testing Monitoring Systems for Risk Assessment of Harmful Introductions by Ships to European Waters”. He has also been directly involved as an advisor to the IMOs’ MEPC for many years. Over the last 15 years, he has been the senior scientist and project leader in the development of various ballast water treatment systems.



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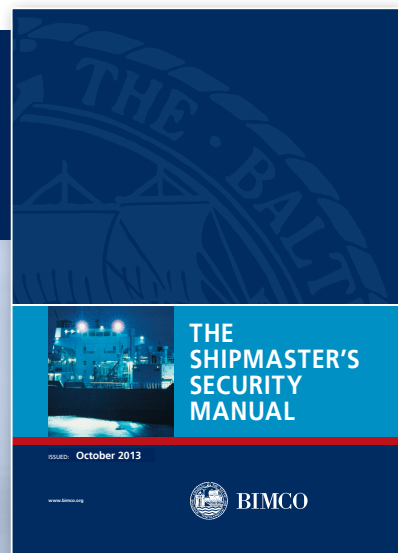
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Raising the bar for agents and brokers



The FONASBA quality standard (FQS) was conceived in 2005, when there was much discussion throughout the industry about raising standards. The lack of an international quality regime for ship agents and ship brokers was, therefore, a significant gap in the total quality chain. As the global representative body for those professions, FONASBA was best placed to develop a quality regime that would be both sufficiently robust to be relied on by ship owners and operators, and also be reflective of the responsibilities and obligations of agents and brokers. Furthermore, the requirements had to be flexible enough to be equally applicable to small independent agents or brokers, as well as major multinational companies.

BIMCO is a strong supporter of the FQS as a quality standard for the industry. Søren Larsen, BIMCO's Deputy Secretary General explained why:

"In the shipping industry it is not difficult to call yourself a broker or an agent and so we believe the FQS is crucial to underpin the attempts of ship brokers and agents to raise standards in their sector. An auditing scheme like FQS makes a real difference to these standards, compared to a voluntary code of conduct. This is why BIMCO strongly supports the scheme which of course depends on broad backing in the brokering and agency business."

The core FQS criteria require that the company be a member of a FONASBA association, complies with all relevant national accounting regulations, be committed to ensuring that its staff are fully trained (or better still, professionally qualified) and

that it operates to the highest standards of professionalism. Every approved company must also commit to upholding the Federation's Code of Conduct. FONASBA has members in more than 50 countries worldwide, with a broad range of legal, fiscal and operational constraints, so those criteria

are by necessity somewhat general. Working from those foundations, FONASBA member associations tailor the criteria to comply with their own national laws and regulations. They are also encouraged to strengthen the base criteria in order to enhance their version of the standard.

Today, the FQS is in place in 24 FONASBA member countries and over 350 ship agency and broking companies are approved. Competition amongst ship agents is fierce and in most countries there are no minimum requirements for establishing a ship agency. So it provides a welcome and much-needed opportunity for approved companies to demonstrate clearly their quality service provision and promote themselves ahead of their rivals. All FQS approved agents and ship brokers are listed on the FONASBA website, allowing ship-owners and operators to identify them easily. With nearly half our members issuing the FQS, the Federation is now working to introduce it in the remaining countries.

As coverage of the FQS widens, shipowners, operators and charterers can require that their agents and brokers be approved. We have already seen instances where FQS approval is a condition for securing an agency appointment. Furthermore, it is now being actively considered for incorporation in standard agency clauses and FONASBA is working with the developers of those clauses to secure its inclusion.

As stated earlier, responsibility for introducing the FQS, promoting it amongst the members and administering it is passed on to the associations themselves. So, how do they see the FQS locally? The Association of Ship Brokers and Agents (USA) Inc.,

An endorsement from a Marine Superintendent with a Swiss ship manager demonstrates, FONASBA's Quality Standard is a valued resource when appointing ship agents and shipbrokers worldwide.

"When the Chief Officer suffered a medical emergency, I was called at 6 a.m. to divert our ship to a port where we would not normally call and so had no regular agent. I opened the Shipbrokers' Register App, in order to choose quickly a reliable company that would take care of all the formalities at short notice. Since there was no time to discuss costs or send advance funds, I had to follow my instinct, only considering agents holding the FONASBA Quality Standard, were BIMCO members or preferably both. My owner would ask me to justify my decision if something had gone wrong, but with the agent approved to an international quality standard, I was confident everything would go smoothly. As it turned out, the Chief Officer survived the emergency, because of the professionalism of everyone involved. Truthfully, I don't mind paying more for a FQS agent, who adheres to a higher standard, because I know they will take good care of my owner's multi-million dollar ship and it's even more valuable cargo"



Jonathan C. Williams FICS –
General Manager

(ASBA), FONASBA member for the USA, developed and introduced its own mandatory certification of ship agent members in 2005. With their criteria already exceeding the FONASBA minima, ASBA was one of the first member associations to gain approval under the FQS. We asked Jeanne Cardona, Executive Director of ASBA and one of our most enthusiastic supporters of the FQS, to contribute her thoughts. She writes:

“In a recent survey conducted by ASBA, maritime principals ranked the criteria deemed most important in their decision to appoint a ship agent as:

- *A fiscally responsible company*
- *Employing trained boarding agents*
- *Experience with the cargo and vessel type*
- *The principal’s past experience of, and relationship with, the agent*

“Except for the pilot, the first and last person to board or depart during every ship’s port call is the ship’s agent. The agent is like a control tower for a ship’s port call, coordinating local scheduling and logistics with the key players – the owner, charterer, shipper, receiver, terminal, and, of course, the ship. That work starts well before the vessel arrives, continues while the vessel waits to berth and long after it has sailed.

“The agent dispatches the local services necessary for a successful port call by arranging pilotage, towage and customs entry and clearance, while navigating deftly through the myriad national and local regulatory requirements involving the ship, her cargo

and crew. Beyond the commercial operation there is an extensive list of husbanding requirements that includes coordination of ship’s stores and spare parts, as well as crew changes, crew medical, and service technicians.

“An agent’s job is to (safely and economically) expedite the vessel’s port call. Understanding the impact of high daily operating costs of ships and marine terminals, the pressures of berth congestion, and contract deadlines for loading and unloading cargoes contributes positively to the success of a voyage. Solid rapport and good standing within the local marine community is critical. The agent stands in the shoes of his, or her, principal, protecting their interest at a specified port.

“With these actions, obligations and responsibilities in mind, ASBA’s certification criteria directly address the needs of the principal and assures them that a certified agent is able to handle their vessel at the highest levels of professionalism and commitment.

“As a best practice that supports operational excellence and risk mitigation, ASBA encourages all vessel charterers, owners and operators to nominate and appoint ASBA certified agents whenever possible. ASBA’s thirty certified member agents handled approximately 43,000 vessel calls in the USA and Canada in 2013, of which 14,000 were dry bulk and break bulk vessels. ASBA certified agents have therefore represented approximately 65% of the dry and wet bulk vessels calling US ports that year. In terms of experience, these statistics tell a clear story.”

As FQS expands further, more of our member associations will recount similar success stories as the number of port calls attended by FQS approved agents, and ships fixed by approved brokers, continues to rise. The main success of the FQS, however, will be in raising further the already high standards of professionalism within the ship agency and ship broking sectors, ensuring that our members provide owners, operators and charterers with the best possible service at all times. The support and encouragement we have received from BIMCO, since the beginning, has been constant and unwavering and we are confident that, as adoption of the FQS continues to grow, so too will the support of BIMCO members. ■■

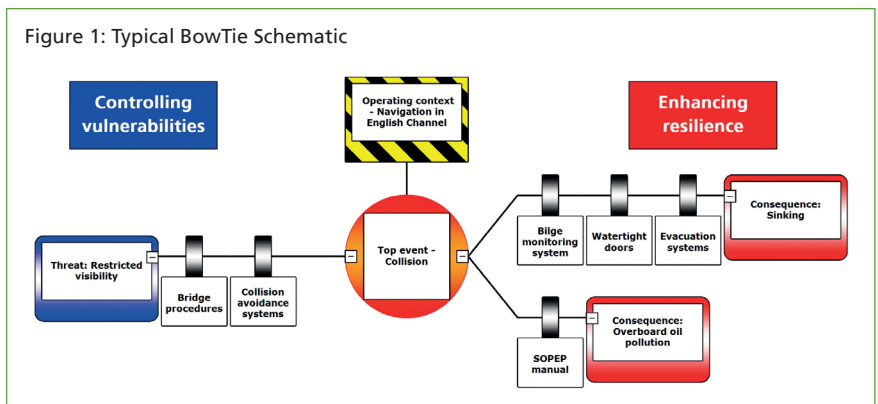
Editor’s Note: Jonathan Williams has been General Manager of FONASBA since 2000. He is the accredited representative of the Federation at IMO and with the European Commission and other European institutions. Prior to joining FONASBA, Jonathan spent 25 years as the London representative of an Australian ship agency company. He is a Fellow of the Institute of Chartered Shipbrokers and a member of the Baltic Exchange.

List of countries currently accredited to the Standard: Argentina, Australia, Belgium, Brazil, Croatia, Cyprus, Denmark, Finland, France, Great Britain, Hungary, Israel, Italy, Japan, Malta, Mexico, Morocco, Norway, Peru, Portugal, Slovenia, Spain, Sweden and USA.

Breaking the myth: the effectiveness of bowties in risk and safety management

In recent years, bow-ties have become a fashionable tool for managing risk and safety in high-risk industries. The original thinking was based on James Reason’s widely cited Swiss cheese model and the domino effect. Reason argued that accidents (or failures) in socio-technical systems, ie systems comprising human beings and technical components, are “caused” as a result of the dominos falling sequentially one after the other. As such, identifying the causes makes it possible to avoid them by introducing elimination, isolation and mitigation measures. These measures are termed “barriers” in the bow-tie model of risk and safety management.

The model works as follows: the top event (or a situation out of control) is placed at the centre, the threats (or circumstances) leading up to the top event are placed on the left-hand side and the consequences of the top event are positioned on the right-hand side of the schematic. The schematic appears like a bow-tie knot at the centre, with numerous barriers in the pathway starting from the threat up to the consequence (or accident). The barriers on the left-hand side of the top event are aimed at controlling vulnerability and the barriers on the right-hand side are aimed at mitigating the impact of consequences and enhancing resilience (see figure 1). In conventional thinking, barriers consist of technical hardware (for example, safety-critical equipment). But in socio-technical systems, organisational barriers (procedures, rules, etc) and human barriers (decisions, heuristics, skills, etc) play an equally if not more important role. The management and control of barriers is central in the bow-tie framework of risk and safety.



The maritime industry has been swift to embrace bow-ties in recent years. Ships operate as socio-technical systems that are complex and dynamic, given the detached, afloat and mobile nature of capital-intensive assets. Such a model as the bow-tie, it is believed, offers a unique insight into the overall risk picture and serves as a powerful tool for communicating and managing risks. The aim of this article is to provide an insight into the capabilities and limitations of barrier management and bow-tie models as a methodology for managing risks and safety. But first let us start with a brief overview of the basis for this model.

Bow-tie risk and safety management

A common theme in high-risk industries such as the nuclear, aviation, mining and offshore sectors is to manage the hazardous nature of assets. As such, risk management is highly sensitive to major accident hazards that need to be controlled, given the reputational and financial stakes. A distinction is made between frequent low-consequence occupational health and safety issues (OHS) and rare but high-consequence major accident hazards. To this end, the UK’s offshore regulator, the Health and Safety Execu-

tive (UK, HSE), like many high-risk industries, has established a clear definition of major accidents in hydrocarbon and processing activities: (a) death or serious personal injury to persons in the vicinity of the installation, (b) major damage to the structure of the installation, (c) collision of a helicopter with the installation, (d) critical failure of diving operations in connection to the installation and (e) death or serious personal injuries to five or more persons in the vicinity of the installation arising from other events, excluding hazards such as slips, trips and falls. Such a clear and detailed definition of what major accidents comprise, as we shall see below, is fundamental to the success of bow-tie methods.

Barrier functionality

In bow-ties, the primary function of barriers is to prevent and mitigate the impact of a top event that may (or may not) lead to a major accident. In the absence of a clear definition of major accidents, the intended functions of barriers in a bow-tie may become less effective. In many cases, there is also a tendency to use generic bow-ties for similar types of top events, ie collision, structural failure or grounding within the

fleet. But top events can mean different things in different operating contexts. In the case of a container ship, the immediate priority following grounding may be to reduce uneven hull stresses whereas in the case of a tanker it may be to avoid marine pollution. Even with the same type of ship, the priorities may change depending on the operating context. For instance, oil pollution in federal waters will have far-reaching financial and reputational implications. Understanding the dynamic and complex nature of top events is crucial in selecting barriers and setting up barrier functions in bow-tie models.

Barrier reliability

Once the function of the barriers is clearly understood, the next step is to enhance the reliability of barriers. Enhancing the reliability of technical barriers may seem straightforward by simply following good maintenance practice. But in a resource-constrained environment, barriers can be pushed to the limits; for instance, maintenance on main engines could become overdue or a fire pump may not deliver the intended pressure after a certain period of time. In such circumstances it is necessary to examine how information from maintenance systems is communicated to the bow-tie model in forming a risk picture. In the case of procedural barriers, reliability is contingent on the robustness and continuous updating of procedures. Where procedures cannot be detailed, as in the case of emergency situations, human knowledge and decision-making abilities are barriers in themselves and could be seen as an

immense source of resilience. For instance, if the fixed firefighting system or emergency generator fails to start automatically, system resilience is dependent on the crew's ability to override and switch from autonomous to manual mode. A bow-tie model that encourages a balance between technical, organisational and human barriers is crucial for successful management of safety and risk.

Barrier dynamics

A common assumption in bow-tie models is that barriers are independent of each other and that threats follow a linear path up to the consequences. In practice, barriers are highly interactive and complementary and may not exhibit causal or sequential relationships. If the bilge alarm system fails to go off as intended, it is bound to put increased pressure on evacuation procedures and life-saving systems. In contrast, performance problems with navigation and collision-avoidance systems may be accounted for in a carefully planned passage that aims to avoid proximity to navigational hazards. A substandard maintenance scheme or design faults may introduce vulnerability into the system and weaken system resilience and recovery in complex ways that linear pathways cannot always explain (see figure 2). Thus, barriers and threats may combine in complex ways to give rise to unimaginable events and consequences.

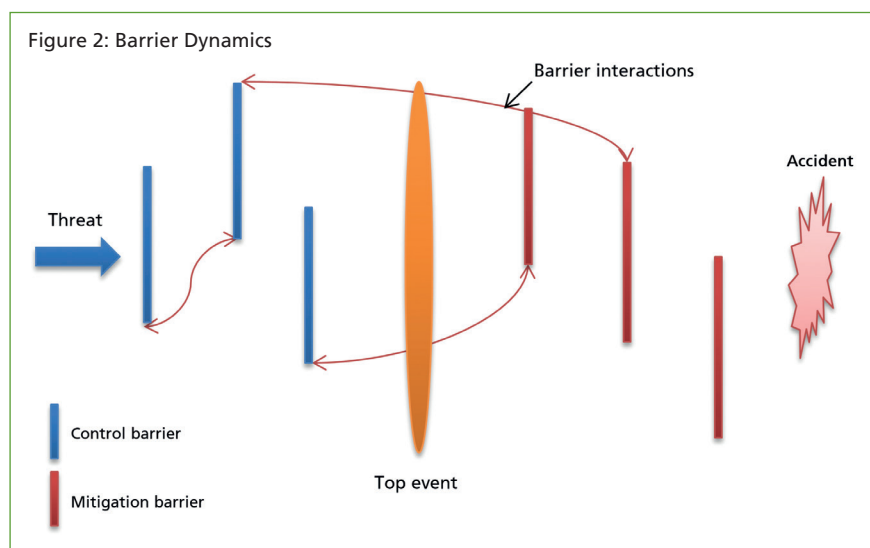
Conclusion

If not understood correctly, bow-ties may lead to an oversimplifying and misleading risk picture. As a start, organisations need



Nippin Anand PhD MSc Master Mariner

to think carefully in terms of what really matters and needs to be controlled; in other words, there needs to be a clear understanding of major accidents specific to the asset and operating context. This is crucial for setting up barriers and improving barrier reliability. To say the least, investing in or introducing more barriers does not make the system any safer! Equally important is to understand the complex nature of the environment in which the ships operate. Such complexities cannot always be explained using linear or causal models of risk and safety. Metaphorically speaking, the holes in the cheese are not fixed, static or aligned but constantly moving up and down, opening and closing in no particular order or predetermined path. Understanding and appreciating complexity is the first step towards reducing vulnerability and enhancing resilience in socio-technical systems. ■■



Editor's note: Nippin is presently employed with DNV GL as Principal Surveyor / Safety Management System Specialist. Previously he has worked as a Research Fellow at the University of Nottingham. Nippin is very interested in (socio-technical) systems safety, resilience and risk management and is extremely passionate about linking theories (of safety) with practice. He is an Associate Nippon Foundation Fellow of the Seafarers International Research Centre at Cardiff University. Nippin has spent 11 years at sea, holds a Master's degree in International Transport and Economics and the highest seagoing qualification of a Master Mariner.

New books

Analysis of a casualty

The concept of bridge resource management (BRM), as an efficient method of handling large ships in a dynamic situation, evolved some years ago, largely from the practices of the aviation industry, which had learned the hard way that there was no room for errors on flight decks and that proper procedures and teamwork were the best insulation against disaster.

BRM is taught in both aviation and marine simulators around the world and has been credited with a “sea change” in the way that ships are handled, notably in pilotage or constricted waters, where the bridge team will be most severely challenged. The navigation of all ships can profit from such training, although with the operation of very large cruise ships, which have to manoeuvre in close proximity to land, it is clearly important that their bridge teams function with optimum efficiency.

This book, by master mariner, hydrographer and a navigational simulator instructor Antonio Di Lieto combines an analysis of the final voyage of the ill-fated *Costa Concordia*, with a searching review of navigation in the digital age. The author sets out to answer a number of questions, which have been asked by a large number of marine professionals after the 2012 calamity, which cost the lives of 32 people.

Firstly, how could a modern ship, compliant with all the safety regulations be so vulnerable to a series of “normal” human errors and what could be learned from the events of that night?

What improvements to navigational techniques might help mitigate the risks associated with ever-increasing ship dimensions and decreasing safety margins? What are the principles that allow for an effective integration between the human element and new technology on the bridge of a

ship? And having answered these questions and identified operational solutions, what organisational and regulatory changes are needed to implement them?

There is now no mystery about the sequence of events that led to this terrible accident, thanks to the facility of Vessel Data Recorders which have effectively produced a second by second picture of the final voyage. The actual conversations between the master and his officers, along with the actuality of the track and instrument records, enable an accurate forensic reconstruction of the period from prior to departure from Civitavecchia to the contact with the rocks off the island of Giglio, to which the ship had closed for a “sail past” to honour the retiring hotel director.

The author sums up the reasons for the accident succinctly, starting with the master’s incorrect decision to perform the “sail past”, contrary to the company’s informal policies as no benefit for the passengers was intended. The planning of the Second Officer for the deviation was incorrect, insufficiently checked by the master and compounded by the master’s incorrect execution of the final turn and inadequate teamwork at this crucial time, with the master “performing a one-man show”. Distractions at this crucial time from mobile phones and the presence of hotel staff delayed the helm orders for the final turn, making contact with the off-lying rocks inevitable.

While this sequence of events may no longer be a mystery, the author develops this systemic analysis to probe the latent conditions associated with the various errors of the personnel and weakening the defences which contributed to the outcome. There was inadequate training for the specific Integrated Navigation System, a lack of teamwork training, no company policy and operating procedures for the “sail past”,

ambiguity stemming from the co-existence of traditional and integrated methods for controlling and monitoring the route, usability issues and problems with languages used on the bridge.

The author also focuses on human error and indeed considers the role of experience and training in the fast-expanding cruise sector. He also, almost as an aside considers the aftermath of the accident, comparing the reality of this tragedy with the fictional hero of Josef Conrad, Lord Jim.

The remainder of the book looks closely at the human resources on a ship’s bridge with its cognitive and physiological potential and limitations, before considering the tools these people have to work with in the shape of the vessel’s technical resources. He shows how the concept of BRM, which began in the Baltic ferry trades has gone global and how it works and has developed, its history and how it has meshed with the Safety Management System which emerged from the International Safety Management Code. This thoughtful and very readable book concludes with a discussion of how the International Maritime Organisation, the ILO, flag states and others should approach the problem of managing risks which emerge from the growing complexities of the digital age. We need, he concludes “more sophisticated competencies aboard ships”. But acquiring them is going to be very difficult.

Bridge Resource Management – from the Costa Concordia to navigation in the digital age is written by Antonio Di Lieto, ISBN 978-0-9942672-0-7 is published by Hydeas Pty. Ltd of Brisbane, Australia. ■■

Legacy of the Clyde

It is beautiful in its lower reaches, but nobody would suggest that the River Clyde is a spectacle among rivers of the world. Yet, over the best part of a century it was this Scottish river which was responsible for a high proportion of global shipbuilding, with the city of Glasgow a magnet for all kinds of marine activities.

“100 years of shipping on the River Clyde” by George C. O’Hara is a delightful historical narrative of the river and a fundraiser for the Scottish Shipowners Benevolent Association, which itself celebrated its centennial last November. Lavishly illustrated by black and white photographs, which seem to be so much more evocative than modern colour prints.” Its pages chart the growth, stagnation and fall of this great Victorian maritime and manufacturing city, which is now re-inventing itself, but on rather different lines. Within these pages are to be seen some of the ships of Glasgow owners, such as Anchor Line, Donaldson Line, J&J Denholm, H.Hogarth, Lyle Shipping, Bank Line, Paddy Henderson and others. These were the ships that made Glasgow what it became, carrying the goods it made all around the world. This was a world before standardisation and utility, when owners would put their own personal stamps on the ships they bought, and which could be recognised by knowledgeable seafarers and others as the products of both yards by their funnel colours. Some of the world’s greatest liners were constructed on the Clyde and this book provides photographic reminders of these famous ships. The book concludes with a brief history of the Denholm Group, a company which has lived throughout this century.

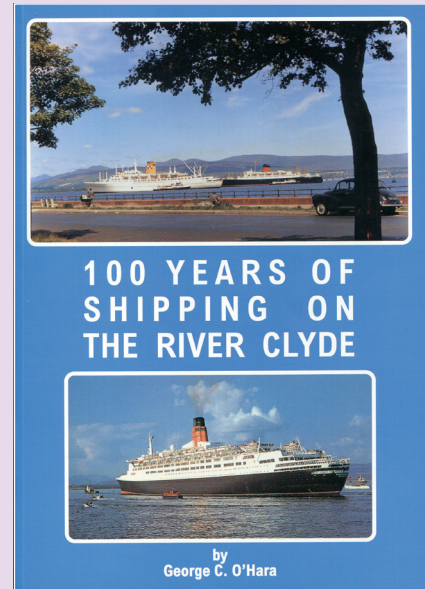
The book covers the development of the ports of the River Clyde and its estuary, the docks and related marine sites on both banks of the river. It provides a sketch of the principal shipping companies and the

trades they operated and describes the world of Clydeside shipbuilding, marine engineering and ship repairing. Even as late as the 1960s there were more than thirty major shipyards and marine engineering works on the Clyde, but the author takes the reader back to pre-recession operations on the river, when there were so many more that disappeared during the bleak days of the 1920s and 30s.

The role of the Clyde as a shipbuilder to the Royal Navy is traced, with pictures of famous warships which were constructed on that river, while the Clyde as a repository of nautical, marine engineering and technical expertise is well described. This legacy still lives on. There are sections on ferries and yachts, with proud memories of some most elegant vessels recaptured in these pages. If anyone wants to know what the Clyde was really like, there is a beautifully composed Elder Dempster inbound on a grey, misty day, with tugs fast, passing the hammer head cranes of Barclay Curle’s shipyard looming through the murk.

George O’Hara writes with some passion about the years of decline with the lights going out on UK shipbuilding from the 1970s onwards “the critical mass of the British Shipping industry contracted with the ... rapid disappearance of snow on a hot day...”. But he gives credit to the survivors, notably the expertise provided by the UK ship managers who have remained “a remarkable business establishment”. Glasgow remains one of the global centres of this successful sector.

100 years of shipping on the River Clyde, by George C.O’Hara is published by the Scottish Shipowners Benevolent Association, ISBN 978-0-9930793-0-6. ■■



Ethane carriers poised to join gas shipping fraternity

Ethane carriers are a new type of gas ships designed to deliver this US shale byproduct to chemical plants worldwide for use as feedstock

The US shale gas revolution is setting the scene for the emergence of ethane as a notable liquefied gas carrier cargo on deepsea routes. The product is one of five components of the natural gas liquids (NGLs) in which the rising output of US shale oil and gas is rich. It is also by far the cheapest and most abundant of the NGLs and constitutes an ideal petrochemical feedstock. It is now becoming available in quantities in excess of what the vast and growing US chemical industry is able to utilise.

In most NGL flows ethane accounts for almost 50 per cent of the total volume. The other constituents - propane, normal butane, isobutane and natural gasoline - make up the balance between them. Gas fractionators are used to process NGLs into their pure, component parts and a number of such facilities are now being built on the US East and Gulf Coasts with the export trade in mind. Operators of ethylene crackers in Europe and Asia have been quick to recognise the benefits that could accrue from a feedstock switch to US ethane and have lined up charters for the new breed of gas carriers to transport their purchases from US export terminals.

Ethane has traditionally not been traded in global markets and is used primarily in facilities adjacent to where it is processed. From a commercial point of view its properties, which are similar to those of ethylene, made it difficult in the pre-shale era to justify its liquefaction and transport in large volumes.

Ethane has a vapour pressure of 3.85 MPa at 21.1°C and a boiling point of -88.5°C. It has a specific gravity of 0.54, as opposed to 0.45 for methane. These properties mean that ethane must be either refrigerated to

a very low temperature, compressed to a high pressure or have both temperature and pressure controlled to keep it in a liquid state and enable its transport by sea in bulk.

In terms of existing gas carriers, ethane can be transported in semi-pressurised/fully refrigerated (semi-ref) liquefied ethylene gas carriers (LEGCs), the largest of which have a capacity of 22,500m³. Some ethane, processed from North Sea gas, is moved around locally in the North and Baltic Seas region in smaller, dedicated LEGCs which have been provided with extra compressor power.

However, the sheer volumes of US ethane becoming available and economy of scale considerations have prompted a number of gas ship newbuilding designs. Contracts have been placed for the largest semi-ref gas carriers yet built as well as for fully refrigerated very large ethane carriers (VLECs) of over 80,000m³ in capacity. The semi-ref vessels, which are in the 27,500-36,000m³

size range, are earmarked for transatlantic service while the VLECs are being built for shipments to East and South West Asia.

In regards to the necessary US export terminal capacity, interest so far has been concentrated at Marcus Hook near Philadelphia and Houston in Texas. The Marcus Hook terminal is being built to serve, amongst other vessels, the fleet of eight 27,500m³ semi-ref ethane carriers which are being built at two yards in China for Evergas and long-term charter to the chemical major Ineos. The ethane, which will be supplied via pipeline from the huge Marcellus shale gas play in the northeastern US, will be processed and shipped across the Atlantic to ethylene crackers operated by Ineos at Rafnes in Norway and Grangemouth, Scotland.

The new Marcus Hook loading terminal, named Mariner East, is being built on the site of a former refinery. The facility already has four jetties capable of handling

The UEC very large ethane carriers have extended the design envelope on what is possible with semi-ref gas carriers



Table 1: Ethane carrier orderbook (as of 1 June 2015)

Owner	Capacity (m3)	No in series	Yard	Gas carrier type	Prop'n system*	Ship operator	Charterer
Evergas	27,500	8	Sinopacific/ Yangzijiang	semi-ref	DFDE	Evergas	Ineos
Navigator Gas	35,000	4	Jiangnan	semi-ref	LSDF	Navigator Gas	Borealis**
Ocean Yield	36,000	3	Sinopacific	semi-ref	LSDF	Hartmann	SABIC
Jaccar/UEC	86,000	5	Sinopacific	semi-ref	tbn	Hartmann	Oriental Energy
Reliance	87,000	6	Samsung	fully ref	tbn	tbn	Reliance

* DFDE - dual-fuel diesel-electric; LSDF - low-speed dual-fuel

** Borealis has chartered the first of the four Navigator ships



Mike Corkhill

very large gas carriers, including VLECs, and five underground caverns for storing NGLs. Two fully refrigerated tanks are also being built at the site, one of 50,000m³ for ethane and the other of 80,000m³ for propane.

The facility will initially process approximately 70,000 barrels per day (bpd) of NGLs, producing primarily ethane and propane. The propane output has already commenced and ethane production is just coming onstream. A second phase of the project, Mariner East 2, will boost the NGL-processing capacity at the terminal by 275,000 bpd by late 2016.

The prime mover in Houston has been Enterprise Products Partners (EPP). In April 2014 the company announced it was to build a 240,000 bpd ethane export facility at its Morgan's Point terminal on the Houston Ship Channel. The worldscale complex is scheduled to commence operations in the third quarter of 2016 and EPP has stated that 85 per cent of the terminal's capacity has been booked under long-term contracts. Ineos is one customer that has signed up to use the facility and Reliance Industries and SABIC are also likely to be purchasers.

Targa Resources Partners, a rival US NGL exporter to EPP, is also planning an ethane export terminal while in Louisiana a new firm, American Ethane, is investigating the construction of an ethane export facility at Shady Grove.

Even with US chemical producers increasing their use of ethane as feedstock, the country is likely to have at least 600,000 bpd available for export by the end of the decade. Such a volume would require approximately 100 ethane carriers to trans-

port the product to world markets and one possible fleet mix would be 50 per cent semi-ref ships and 50 per cent VLECs.

The status of Evergas as the contractor of the largest semi-ref ethane carriers was short-lived. By April 2014 Navigator Gas had four LNG-powered, 35,000m³ ethane/ethylene/LPG carriers on order in China. On delivery in April 2016 the first in the series will go on charter to the chemical company Borealis. Under the 10-year agreement the ship will transport ethane from Marcus Hook to the Borealis steam cracker at Stenungsund in Sweden.

The same month that Navigator Gas announced its Borealis deal Hartmann Reederei of Leer in Germany and engineering consultants HB Hunte Engineering unveiled their Ecostar 36K design for a semi-ref 36,000m³ ethane/ethylene carrier. Ecostar 36K features a distinctive Svelte bow, the accommodation superstructure forward and LNG-fuelled engines. The design has been embraced by the Norwegian shipowning company Ocean Yield, which has ordered three such vessels in China for delivery beginning in the second half of 2016. The vessels will be used by the Saudi Arabian petrochemical company SABIC to ship US ethane to its revamped steam cracker on Teesside in the UK.

The era of the fully refrigerated very large ethane carrier (VLEC) was inaugurated in July 2014 when Reliance, India's largest private sector enterprise, ordered six such vessels of 87,000m³ in Korea. When delivery of the series commences in late 2016, the vessels will be the largest gas tankers that are not LNG carriers. The company will use the ships to transport 1.5 million tonnes per annum (mta) of ethane from Houston to India for use as feedstock in the new

steam cracker being built at its petrochemical and refinery complex at Jamnagar in Gujarat state.

Ethane is carried in a fully refrigerated state at its boiling point of -88.5°C. The new Reliance vessels will be built with the same Gaz Transport & Technigaz (GTT) Mark III membrane tank containment system as that fitted onboard over 150 LNG carriers currently in service. Ethane is a heavier, denser liquefied gas cargo than LNG and a more robust version of the traditional Mark III containment system will be required.

Within two months of the Reliance contract a further series of VLECs was ordered, this time for a joint venture established by Hartmann Reederei and Jaccar Holdings. Called United Ethane Carriers (UEC), the new company will be responsible for the commercial management of the five 85,000m³ vessels to be built for the venture. To be built to the so-called EcoStar 85K design, the ships will serve under a 10-year time charter contract with Oriental Energy (Nanjing) on delivery. The agreement includes an optional five-year extension. The UEC ships will feature IMO Type C pressure vessel cargo tanks and will be the largest semi-ref gas tankers ever built. ■■

Editor's Note: Mike Corkhill is a technical journalist and consultant specialising in oil, gas and chemical transport, including tanker shipping. A qualified naval architect, he has been the editor of LNG World Shipping for the past ten years and from its inception. Although recently retired from the post, he remains involved with the publication as consulting editor.

Disparity at the ends of the LPG shipping spectrum

The very large gas carrier (VLGC) fleet is currently expanding, relatively speaking, faster than any other in shipping. By contrast, coastal gas carriers are in the doldrums

Big is best in the LPG shipping industry at the moment. Operators of fully refrigerated very large gas carriers (VLGCs) are enjoying sustained, buoyant earnings while those with fleets of small, fully pressurised coastal LPG tankers have suffered tumbling revenue streams over the past year. What is more, the VLGC fleet is currently in the midst of an unprecedented expansion phase while the small ships engaged in regional distribution activities in various parts of the world constitute a fairly mature fleet.

As with many segments of the oil and gas tanker fleets, VLGCs are benefiting from the US shale oil and gas revolution that is currently redrawing the boundaries across the global energy industry map. The country's shale deposits are rich in natural gas liquids (NGLs) and output of propane and ethane, the principal NGL fractions, is climbing rapidly, well beyond domestic requirements. The surplus is reflected in the low prices for US natural gas and LPG currently pertaining. In the market-driven LPG industry demand for competitively priced US product is suddenly materialising in a whole host of locations around the world.

After a decade in which inbound LPG shipments far outweighed outbound consignments, the US became a net exporter of LPG once again in 2011 as a result of the shale phenomenon. LPG loadings in Gulf Coast ports have been climbing ever since. The US exported 9 million tonnes (mt) of LPG in 2013, about 75% ahead of the amount

shipped in 2011, while volumes in 2014 climbed to nearly 15mt, placing the country at the top of the LPG exporters league table.

In the early days of the US export surge most shipments were directed to customers in the Atlantic Basin. However, Asian buyers are now beginning to feature more prominently, not least because Middle East producers are reducing their LPG export volumes in order to use more of the product as a feedstock at new domestic petrochemical complexes.

Approximately 20% of the US LPG export total in 2014 was purchased by Asian buyers, and this share is expected to grow in the years ahead. Japan and Korea remain strong but mature LPG markets while China and India offer the strongest growth potential. Chinese plastics producers, for example, are lining up to become significant buyers of US LPG, not least because there is a major shortage of propylene in China owing to the growing demand for its use in the manufacture of high-quality plastics for consumer goods.

The construction of Chinese propylene dehydrogenation (PDH) plants that will use US propane as feedstock has been identified as the optimum solution. Fourteen such world-scale plants are either under construction or planned in China, and the first two of these facilities are now coming on stream. Imports of LPG for use in PDH, and other petrochemical complexes are already on the rise. Some 6mt of LPG was discharged at Chinese receiving termi-

nals in 2014, up from 4mt in 2013.

Falling in the 75,000-85,000m³ size range, VLGCs are the largest LPG carriers afloat and the gas shipping industry's workhorses when it comes to transporting large volumes of propane and butane over long distances. Terminal restrictions have served to make VLGCs the largest practical size of LPG carrier.

Nevertheless, these ships, with their ability to lift 44,000-tonne parcels, are enabling economy-of-scale benefits to be realised in the movement of US LPG to Asia and other long-haul destinations. The opening of the new, larger Panama Canal locks in early 2016 will help trim the shipping costs associated with long-distance deliveries westbound. In terms of Panama Canal transits, VLGCs are currently a borderline case. Only the smallest ships in the class, or about 20% of the fleet, are able to use the Canal as it stands. The enlarged waterway will be able to accommodate the entire VLGC fleet.

The in-service VLGC fleet stands at 170 ships while there are 82 such ships on order. The gas carrier orderbook shows that 37 VLGCs are due for delivery in 2015, some seven of which had been completed during the first four months of the year, while 45 are scheduled for commissioning in 2016.

VLGC spot-market freight rates are currently around the USD 100,000 per day mark, only marginally below the record high levels of 2014. As the orderbook stands at about 50% of the existing VLGC fleet,



All the major shipowners active in the VLGC sector have ambitious newbuilding programmes underway

inevitably these rates will come under downward pressure over the longer term. For the moment, however, trade growth and tonne-mile requirements are spurring the demand for ships, and VLGC owners are confident that the current strong market conditions will be maintained for at least the next 18 months.

Operators of these gas carriers were buoyed by a mini-surge in already healthy freight revenues beginning in March 2015 and now have the rest of the year to look forward to. In the VLGC trades the second and third quarters have traditionally been better than the first quarter in terms of fleet utilisation. Quite aside from the freight market, lower oil prices have provided shipowners with a bonus in the form of lower operating costs.

The positive outlook is supported by several additional factors. New export terminal projects underway on the Gulf Coast, for example, will enable US shipments to overseas destinations to climb to 21mt by 2017, while still further expansions are planned. The gas carrier industry's efforts to keep fleet supply and demand in balance will also be assisted by the removal from service of older ships for recycling. Assuming an average ship lifespan of 28 years, a

number of older VLGCs are set for final voyages to shipbreaking yards over the next three years.

At the other end of the LPG carrier spectrum to the VLGC is the fully pressurised (FP) coaster of either 3,500m³, 5,000m³ or 7,500m³, which enables the distribution of small volumes of product to a full range of regional end-users. The FP sector in 2014 was characterised by the delivery of many newbuildings in a relatively mature market, and freight rates suffered as a result. The lower-than-expected demand from small-scale buyers is a reflection of the faltering global economy and sluggish growth rates in the Eurozone and China in particular.

By the end of 2014 monthly earnings were down to USD 200,000, USD 250,000 and USD 350,000 per month for the three ship sizes, respectively, representing drops of approximately 22%, 15% and 7% over the course of the year. The smallest, oldest ships in the FP fleet have been particularly vulnerable to the reduced demand for tonnage.

Over the early months of 2015 freight revenues have remained depressed but stable. Shipowners remain upbeat, however, know-

ing that a small change in rates can have a considerable impact on overall profitability. While the FP fleet remains overtonnaged, few newbuilding orders have been placed over the past 12 months, and the recycling of older tonnage is already being stepped up. As a result the coaster sector is optimistic that a rebound in earnings is on the cards for 2016.

Although the smaller FP ships have been largely unaffected by the rising volumes of US LPG exports to date, coasters will inevitably feel the trickle-down benefit of the rapidly increasing seaborne movements of LPG worldwide in the years ahead. ■■

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Macro Economics

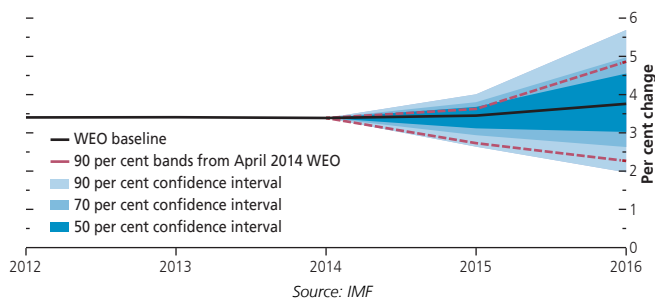
Shipping is faced with a positive, yet complex and changing macroeconomic landscape

Global economy

The global macroeconomic scene has become more volatile, with prominent factors such as oil prices and global currencies causing a commotion. This is resulting in large-scale distributional changes of wealth and income that will impact global trade patterns in the long run if these changes stick. Lower oil prices, for example, is not just a matter of lower fuel cost for the shipping industry, it also affects trade balance positives for oil importing nations and does the opposite for oil exporting nations.

International Monetary Fund (IMF) held on to its January forecast of global economic growth after its April update was completed: 3.5% for 2015, is slightly up from 2014. Several national changes below the headline is also clear. The US is not growing as briskly as initially estimated and for Russia, the 'abyss' simply gets deeper by the day. Brazil is also in trouble as its challenges mount and its economic growth is now expected to contract by 1% in 2015.

Global GDP growth and forecast
2012-2016



US

The US economy shrank by 0.7% in the first quarter of 2015. This followed a similar pattern to last year - one of the coldest winters in history, when the US economy was contracted by 2.9%.

A strong dollar and the disturbance in the US West Coast ports may have limited growth, alongside a long and tough winter period where consumer spending – the largest contributor to US GDP growth – slowed.

With somewhat weakening signals indicating that the US economy has not fully entered a steady growth scenario, the Federal Reserve Bank (FED) is in no hurry to hike interest rates. In spite of that, some suggested that the FED could raise the interest rates as soon as June. However, following their April meeting, the FED has kept interest rates close to zero, as it has been the case since late 2008, an indication that they are not prepared to raise them yet.

While GDP growth might have been poor in Q1, things are looking better on the job market. Reviewing the US labor department's "four-week moving average", the number of Americans filing for unemployment benefits dipped as low as 266,500 in May, the lowest in 15 years. For 12 weeks in a row, the claims have remained below the 300,000 filing mark, a level associated with an improving job market.

Moreover, the US housing market, which remained more or less flat for the most of 2014, seem to be heading in the right direction. In April, single-family home sales reached a seasonally adjusted annual rate of 517,000 units. Almost 7% higher compared to the month before, and more than 26% higher compared to the same month the year before.

Asia

The Japanese economy grew by 1.0% in Q1 2015 compared to the previous quarter. This strong growth rate was brought around by higher business spending. The data puts economic growth in Japan at the strongest level in two years. However, sluggish consumer spending and lower industrial output in April could limit the expansion in Q2 somewhat.

The Japanese Purchasing Managers Index (PMI) from Markit rose to a level of expansion in May climbing from 49.9 in April to 50.9. The sub-indices for production and orders both returned to growth levels. New export orders that should have come in from a depreciated Yen fails to impress, as growth stays weak.

China's rate of economic growth slowed further in the first quarter of 2015, increasing only by 7% compared to the year before. Such "slow" expansion has not been seen in China since the eruption of the financial crisis in 2009. In the past six months, China has cut interest rates three times in order to boost liquidity, in an attempt to counteract the growth slowdown the country is currently facing.

Manufacturing activity in China has been decreasing, and latest reports show that this trend continued in May. The PMI from HSBC/Markit stood at 49.2 in May, up from the twelve-month-low of 48.9 in April. Despite this increase being positive, the index remains below 50, meaning that activity is cooling down rather than expanding.

EU

The economic growth in the euro area rose noticeable in the first quarter of 2015 as both France and Italy returned to positive growth after the last quarter of 2014 showed no change in GDP. GDP in the euro area went up by 0.4% compared to the previous quarter. France has benefited from an increase in consumer spending resulting in a growth of GDP of 0.6% compared to Q4 2014.



DID YOU KNOW...

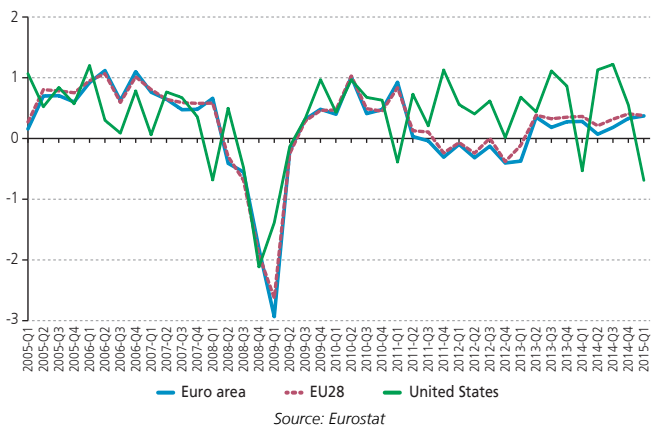
"The State of Maritime Piracy 2014" has just been released.

Seafarers continue to be threatened – see the video here!



PETER SAND
BIMCO Chief Shipping Analyst

EU28, euro area and United States GDP growth rates % change over the previous quarter, 2005-2015



These currency movements are results of expansionary monetary policies that is being carried out by the central banks in the respective nations/area.

USD/CNY exchange rate 2006-2015



The economic outlook of the euro area is the best it has been since the financial crisis – according to European Central Bank (ECB) president Mario Draghi at a recent ECB event in Portugal. He specified that this by no means indicates that the challenges facing the euro area have passed but that the conditions are ideal for individual member countries to start working systematically with structural reform.

In its regular economic report, the World Bank expects economic expansion for all EU member countries this year. Something that has not been seen since before the financial crisis. The World Bank lists a weaker Euro, lower oil prices and the extensive quantitative easing by the ECB as the foundation for the growth. Especially exports from central and eastern European countries will benefit as the EU recovery gets going.

Outlook

Exchange rate movements in the first five months of 2015 have been substantial. A stronger US dollar and a weakening of the euro and the yen have affected the underlying conditions for trade. In isolation, such movements should result in more imports into the US as consumers benefit from lower import prices. Imports should be coming from the euro area and Japan, as exporters in these nations appear to gain a competitive price advantage over domestic US producers. Both Japanese and European exports have gone up because of this shift.

The appreciation of the yuan against the US dollar has been put on hold. A clear sign of the awareness paid to the economic transition in the leadership in China, as they aim to protect their competitiveness in the export markets. We saw a similar action taken by China in 2009-2010 when the financial crisis started to rage.

Moving forward the complex changes to the Chinese economy is affecting shipping to a large extent. The shift away from infrastructure lowers demand for imported dry bulk commodities.

As the economy changes towards a stronger private consumption domestically, the performance and importance of the manufacturing sector is getting smaller. However, it remains significant to the container shipping industry as the economic growth is less energy-intensive today and in the future will change the demand for oil as well as coal.

We should expect the macroeconomic challenges that face shipping to play a larger part even though it is difficult to predict exactly how it will impact shipping. As IMF Economic Counsellor, Oliver Blanchard puts it: "what strikes me... is the complexity of the forces shaping macroeconomic evolutions around the world and the resulting difficulty of distilling a simple bottom line". ■■

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 11 June 2015. Read about the impact on shipping on the following pages...

Dry Bulk Shipping

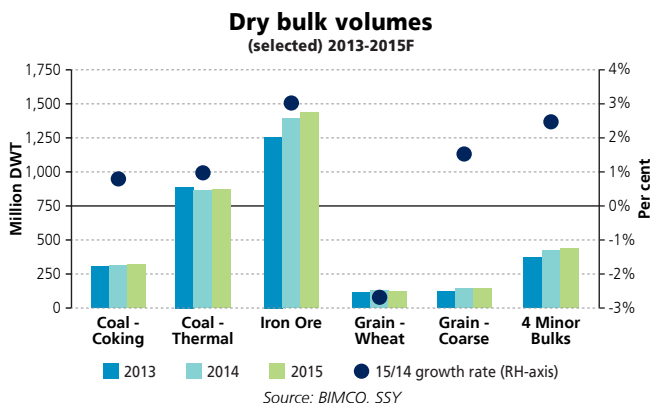
Lowest fleet growth in 10 years may not prove enough as demand quickly evaporates

Demand

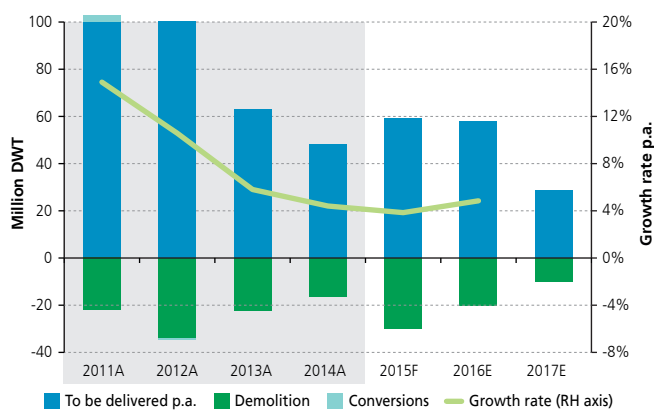
Starting the year at index 771 the BDI bottomed out at 509 on 18 February 2015. Since then it has improved but only on a couple of occasions has it been above 600. The market conditions are devastating and volume growth in 2015 on key trades is negative. The lack of coal imports into China is taking centre stage, and lost volumes are difficult to make up elsewhere. The (still) positive iron ore demand is overshadowed in significance as the negative coal market makes headlines.

Dry bulk is under pressure on the commodity side and since the beginning of 2014 iron ore prices have slid. That development has made some of the mining companies alter their expansion plans of placing more iron ore on the market, when demand is obviously not as strong to uphold the former price level. From USD 140 per ton down to 42 in early April.

Since then spot Australian Iron Ore FOB prices (Source: Commodore Research) has improved. By end-May, Australian iron ore (63% iron content) was priced at just above USD 60 per tons. This is very positive as it proves demand is there despite steel production growth being negative in China (-1.7%) as well as rest of the world (-1.9%) during Q1. In 2014, Chinese steel demand contracted for the first time since 1995. As the Chinese economy is now changing, so is its steel demand. The knock-on effect for the dry bulk market will depend on the extent to which imported ore takes market share from domestically mined ore as well as absolute level of steel production. Current forecasts for global iron ore demand growth in 2015 is positive, at 3% (Source: SSY)



Dry bulk supply growth



Source: BIMCO estimates on Clarksons raw data

A is actual. F is forecast. E is estimate which will change if new orders are placed. The supply growth for 2015-2017 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.

The other significant commodity, coal, is doing really badly in China while improving in India. Total Chinese coal imports for the first four months in 2015 came in at 68 million tons (Source: Chinese customs). Down by 38% - same period last year. Both thermal and coking coal markets as well as lignite are suffering. The landed cost of coal into China at the end of May is not favouring imports despite very low freight rates.

For thermal coal, SSY expects Chinese imports to contract by 30 million tons, while expectations for Indian imports is a plus at 20 million tons. Last year China imported a total of 291 million tons, distributed with 165 million tons of thermal coal, 62 million tons of coking coal and 64 million tons of lignite. These numbers include seaborne as well as land borne imports.

Supply

Since the turn of the year, the dry bulk fleet as a whole has only grown by 0.5% and since early February, the fleet has not grown at all. This has happened as the demolished volumes have matched the number for newbuildings being delivered.



QUICK FACTS

11 June

Total fleet size (change since 1 January)

DWT million: 759.74 (+0.5%)

Rate indices (change since 6 March)

BDI: 629 (+11%)

BCI: 810 (+72%) • BPI: 696 (+19%)

BSI: 669 (+18%) • BHSI: 336 (-5%)

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

The Capesize fleet is actually smaller today than half a year ago (beginning of November). The development in Panamax and Handysize segment is flat, whereas the Handymax/Supramax segment has grown as we expected it to. In spite of 1 million DWT of Handymax capacity being demolished, 6 million has been delivered, equal to a growth in supply for that sub-segment of 2.9% for the year to date.

For the year 2015, BIMCO expects supply growth to be at 3.8%. This is a downward revision of our estimation three months ago, and it rose out of our adjustment of demolition volumes expected for 2015. As the poor freight market bites harder at an extended time, BIMCO anticipates 30 million DWT to leave the fleet during 2015 and 17 million DWT to have been sold for demolition end of May. Owners have dug deep in the first five months of 2015 whilst

to the shocking fact of 1,981 ships which were contracted during 2013-2014.

Outlook

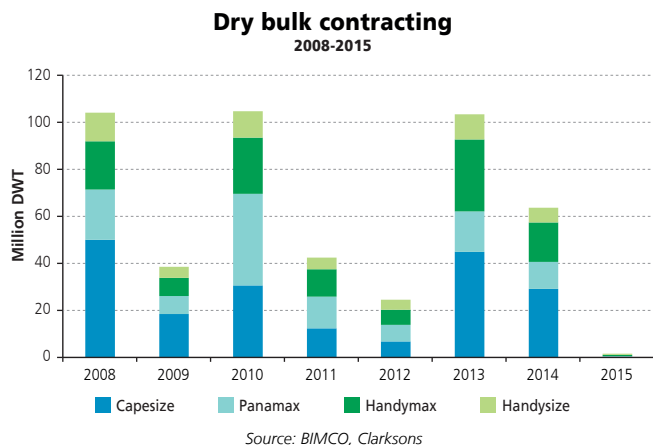
It is a small consolation that Indian coal imports may go up by 20 million tons, when Chinese imports drop by 30 million tons for the second year running.

Despite a very bad sentiment in the market, BIMCO expects volume to increase as we move into Q3. More Brazilian iron ore and grains (wheat and coarse) moving into the market as the soya season abates, should on an overall level, prohibit the market to go into reverse – if volumes contract.

The momentous imbalance between supply and demand continues to worsen in spite of a noteworthy 10-year low supply growth rate. 160 million DWT of new orders placed in 2013/14 can only do harm when demolition activity fails to slash any records by a never-seen-before margin. As the demand growth for dry bulk seaborne transportation seems to weaken too, potentially even on a permanent basis as China changes gear, the industry must adapt to become profitable again. Wait-and-see strategies may turn out to take too long.

If we are to believe that current utilisation levels are just around 70%, new orders should not just cool down for a while, they must be sensitively counterbalanced with demolition for a number of years, not just a few quarters.

For the coming months: June-August, BIMCO expects the market challenges to stick. The demand side is so weak right now, with China reducing coal import by 40% so that it dwarfs most of the positive aspects of the market. On the upside we see owners limiting fleet growth by increasing demolition of obsolete tonnage. Whether this work on the supply side will prove to be effective enough to improve the fundamental balance only time will tell. ■■



continued devastating freight market keep demolition volumes high. An improved freight market is expected to cool demolition interests swiftly.

Another positive development is found on the contracting side. 35 new orders have been placed at global shipyards so far this year (1.8 mill. DWT). 7 Panamax, 12 Handymax, 16 Handysizes and no Capesizes have been added to the order book, which now stands at 1,750 ships with a combined capacity of 142 million DWT. This is

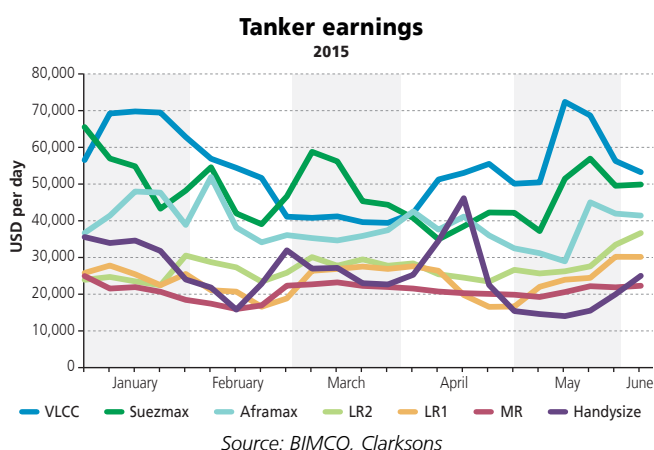
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Tanker Shipping

Still strong market with continued positive prospects especially for crude

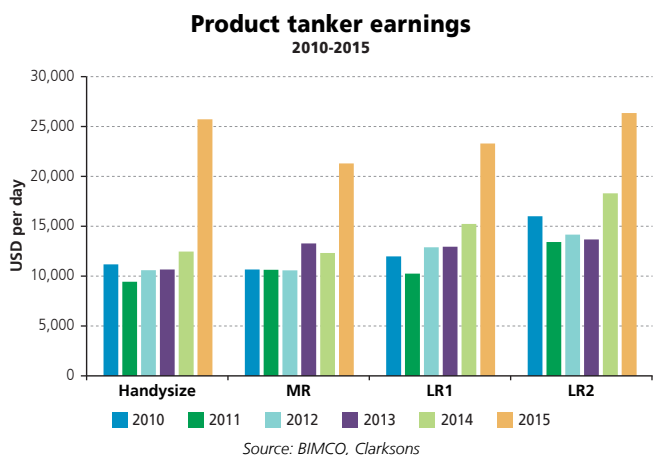
Demand

Earnings for both crude oil and oil product tankers continues to go from strength to strength. Overall, the lower crude oil prices are supporting refinery margins. This accelerates crude oil throughput and increases demand for transportation of feedstock to the refineries as well as transportation of the refined oil products thereafter.



For the product tankers, all trades are performing well for the moment, a combination of healthy demand due to pricing issues and higher refinery throughput. Additionally, longer hauls and fewer triangulation options (i.e. few clear backhaul routes to reduce ballasting) means more ships are required to lift the same amount of cargo. All of that contributes to holding up the freight rates.

For the product tankers, Q1-2015 was the best quarter since Q4-2008. On average, product tanker rates went up by 73% as compared to



Q1-2014. Even though the winter market 2013/14 returned the best rates since 2008, the market also proved prone to seasonal changes as they dropped like a stone in February 2014.

In 2015, the strong earnings continue, making tankers the best shipping segment for the moment. Only Handysize product tankers have seen some weakness during May, with a monthly average of USD 15,916 per day (MR at USD 21,244 per day). Meanwhile, all of the crude oil tanker segments enjoyed positive volatility in mid-May and managed earnings between USD 35,926 per day for Aframaxes and USD 59,598 per day for VLCC's.

In April, China overtook the US as the world's biggest crude oil importer. Import equalling to 7.4 mb/d went to China while the US imported only 7.2 mb/d. US imports peaked at 10.1 mb/d in 2005 and the shale oil production growth since then seems to have changed the trend for good. For China, the growing imports started in 2002 and despite strong growth rates coming off somewhat, imports are still rising. With the number of new refineries coming on stream this year and next year in China, the position as the world's biggest crude oil importer seems to remain with China for the near future.

Supply

The product tanker fleet is developing very steadily and along forecasted lines. Annual supply growth for 2015 is estimated at 5%. By mid-May, the product tanker fleet had grown by 2.1% (2.75 mill. DWT). This is primarily due to 13 LR2s and 36 new MRs being delivered.

With regards to the supply pressure on MRs (40-60k dwt) in 2015 – it is significant. With 90 units still scheduled for delivery during the rest of the year. Nevertheless, when cancellations and slippage has taken its toll, BIMCO expects an additional 57 (out of the 90 scheduled) to hit the water before year-end. In 2014, 79 units of this were delivered. A total of 201 units are on order currently, while the fleet comprises 1,289 units of that size.

The low supply growth over the past years in larger crude oil segments, has been vital to bring around the currently strong market. Fleet growth so far in 2015 for VLCC: 0.5%, Suezmax: 1.5% and Aframax: 0.2%. For the full year of 2015, BIMCO expects the entire crude oil tanker fleet to grow by 2.5% up from 0.9% in 2014 – with 2016 currently set for 4%.

With freight markets on fire – the tanker segments stand out as being the place where most of newbuilding orders are currently placed. This in turn, will naturally contribute to an increased supply

QUICK FACTS

11 June

Fleet sizes (change since 1 January)

Crude (DWT million): 378.74 (+0.9%)

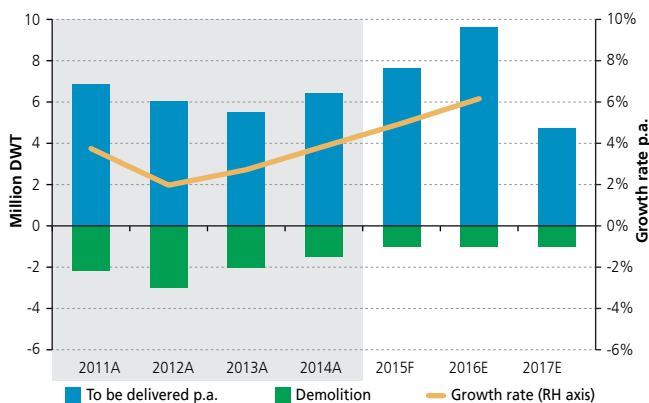
Product (DWT million): 136.06 (+2.1%)

Rate indices (change since 6 March)

BDTI: 910 (+7%) • BCTI: 726 (+7%)

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Product tanker supply growth



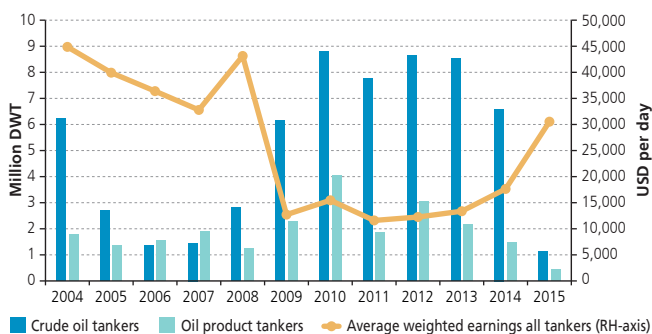
Source: BIMCO estimates on Clarksons raw data

A is actual. F is forecast. E is estimate which will change if new orders are placed. The supply growth for 2015-2017 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.

growth in coming years. 2016 looks heavy with orders and many already piling up for 2017. Right now, the product tanker order book stands 14% higher as compared to three months ago. More or less exclusively orders are done for LR2 and LR1, with only one new MR order seen.

A strong relationship between earnings and demolition sales has been visible over the past decade for oil tankers. During 2004-2008, annual earnings averaged at USD 39,412 per day, while total tanker demolition (crude and oil products combined) had an annual average of 4.5 million DWT. From 2009-2013 the annual averages were USD 13,093 per day and 10.7 million DWT.

Demolition and earnings 2004-2015



Source: BIMCO, Clarksons

Outlook

For the crude oil tankers, the very slow growing supply side is key to its current success and high freight rates. Global oil demand for Q2 is the weak point for 2015 as a whole. However, demand is forecasted by OECD/IEA to reach the highest level ever at 94.07 million barrels a day (mb/d) in Q3 with Q4 aiming even higher for 94.78 mb/d. Those numbers have been significantly adjusted upwards in recent months. All of this could contribute to a final round of fireworks, before the tide turns for the supply side in 2016.

As it goes for crude oil tanker supply growth for the rest of 2015, the pace is set to increase slightly as only 1/3 of BIMCO's forecasted 14.5 million DWT has been delivered. The opposite is likely to happen for the product tankers, which has seen 46% of the expected full year deliveries already being afloat.

Contracting now affects the future. Out of 12.4 million DWT ordered so far in 2015, 38% are due for delivery in 2016, 51% for 2017 and the rest scheduled for 2018. In the crude oil tanker segments most interest is seen for Aframax (28 units) followed by Suezmax (19 units) with only 17 VLCC orders completed so far.

The freight market strength is not seen to abate significantly during the summer in the northern hemisphere. It is responding positively both to a lower oil price and more volatility than we have seen over the past years.

In the coming months June-August, BIMCO expects earnings for crude oil tankers to remain strong and at around the current level. As pointed out for some time now, the supply side is what primarily buoys the freight rates this year, with support coming from the lower oil prices too.

In the product tanker segments, BIMCO finds the current strength to be a positive surprise. Freight rates are unusually high for this time of the year. Moving forward the positive demand factors doesn't seem to dissipate as we move into Q3, but a temporary weakness could hit product tanker demand making freight rates soften somewhat. As the supply side keeps getting stronger throughout the year, BIMCO sees more downside than upside risks. ■■

More shipping market analysis online at www.bimco.org

Container Shipping

Spot rates in a sink hole, while charter rates for smaller containerships soar

Demand

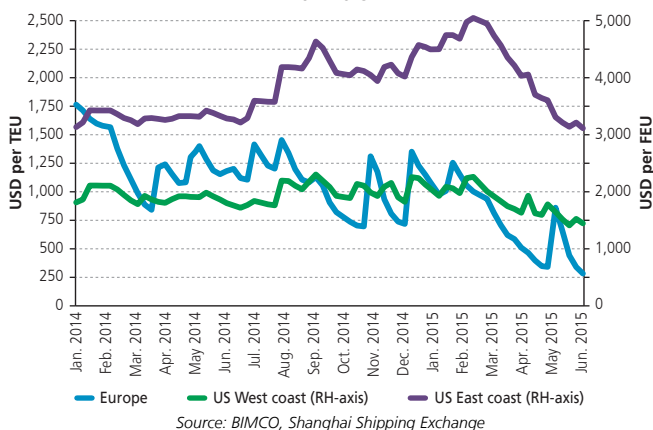
The demand situation is developing a tad slower than what the market had anticipated. After the expected dip around Chinese New Year (February), volumes have failed to pick up markedly. Global volume growth in Q1 was just 1.8%. Nevertheless, things are moving in the right direction and volume growth across the board is seen reflecting the overall positive macroeconomic development.

On the major as well as minor trading lanes out of Shanghai specifically and China in general, spot freight rates are found at a six-year low, for this time of the year; with Shanghai-Korea being the only exception.

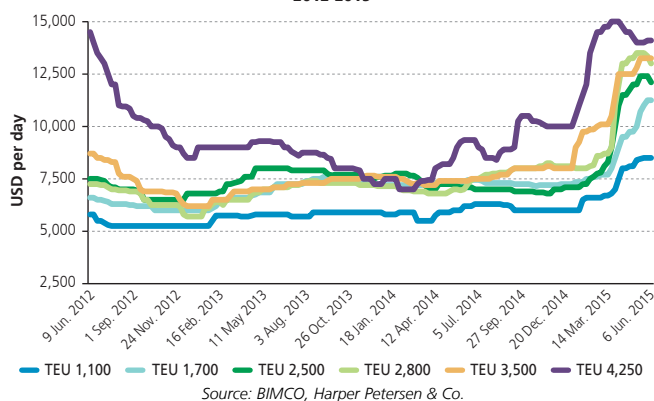
The very slow growing demand side combined with a growing supply side has made it extremely difficult for carriers to strike a balance in order to avoid a freight rate meltdown. On the US East Coast a peak seen a couple of months ago when the US West Coast imports were jammed, has disappeared now. On the main lane from Shanghai to Europe, a new all-time low freight rate was recorded on the first Friday of June, where a TEU could be sent halfway around the world for just USD 284. A brief jump in rates was seen mid-May, only to be an illusion.

Where spot rates certainly fail to impress, the increase seen in charter rates for smaller to medium sized container ships have

Shanghai containerized freight index
2014-2015



Charter rates 6-12 months
2012-2015



done just that. The 6-12 months' charter rates currently seen are almost double that of last year's.

Since 2009 the size of the fleets of container ships between 1,000 TEU and 3,000 TEU of capacity, have all experienced a falling trend. Since early 2013 the decline has increased. Today those fleets are on average 6% smaller than just 2½ years ago, and the trend is set to continue. Containership demolition is taking place only amongst these sizes and contracting is scarce. The demand growth finally seems to have erased the overcapacity for these feeder segments as the supply seems to provide the best explanation behind this radical increase in charter rates.

Supply

602,000 TEU of newbuilt capacity have been added to the supply side of the container shipping market since January 1st. As demolition activity have only removed 72,000 TEU of containership capacity, the fleet is now 2.9% bigger as compared to the start of the year.

The fact that demolition activity until now have not been particularly strong and the average scrapping age has remained unchanged from previous years. It gives us reason to expect it could pick up later in the year if the freight market continues to be challenging. However, the low activity is also a sign of better time charter rates for the ship sizes that are primarily prone to being sold for demolition.



QUICK FACTS

5 June

Total fleet size (change since 1 January)

TEU million: 18,761.20 (+2.9%)

Rate Index (change since 6 March)

CCFI: 862.10 (-19%) • SCFI: 623.47 (-35%)

As if the trend is not clear enough, the sizes of the ships being ordered in 2015 sure spells this out. 30 ships with a capacity of 18,000 TEU or more, 12 in the 10,000-11,000 TEU range and 13 in the range of 1,400-4,000 TEU. In 2014 no ships in the range of 5,000-9,000 were ordered.

The fleet growth is so biased towards larger ships that the question remains: will there eventually be a gap in the market? Recently, we have only seen a positive effect from this. Perhaps, there is room for these size of ships in the market place after the fleet size has been adjusted downwards due to demolition and no new ships, of that size, being ordered.

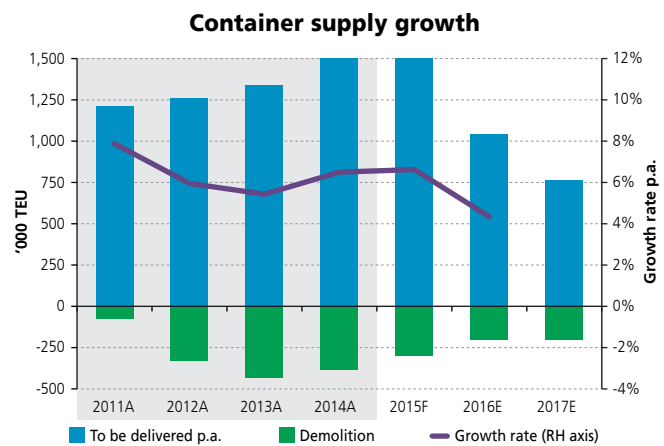
The overall fleet growth remains on target for the full year at 6.6%. Included to this number BIMCO expects slippage in deliveries to increase for the rest of the year. This is because the market is well supplied with tonnage similar to that being ordered, and the demand side is not performing very well. However, the extent of postponements are possible to achieve for shipowners limited by contractual obligations when they enter into discussions with shipyards.

Outlook

Until now the rise in charter rates for the small to medium sized container ships have not caused a flurry on newbuilding contracts. Just six ships in the size between 1,000 and 3,000 TEU have been ordered in 2015. During 2014, 72 ships of this size were ordered. If the rates remain high, more orders could easily surface.

The stronger US dollar against the euro is expected to grow west-bound volume on the transatlantic trades. A positive effect is already seen with more to come if this new balance between the currencies becomes a permanent phenomenon.

It remains a source of worry that the European import demand for containerized goods is not becoming stronger at a faster pace. The



Source: BIMCO estimates on Clarksons raw data

A is actual. F is forecast. E is estimate which will change if new orders are placed. The supply growth for 2015-2017 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.

market needs growth in the high volume trades in order to get the market evolution going and create an effective deployment of ultra large containerships.

Traditionally the idle fleet has consisted of small to medium sized ships, but right now, the idle fleet has almost disappeared. From that, we learn that the fundamental balance of the smaller sizes has progressed over the past five years and finally brought around improved charter rates. Now it can be argued that it is time for idle larger ships as the overcapacity is clear and present amongst them. Moreover, while idling some of those units we may see the fundamental balance amongst the larger units improve by a scale that higher spot freight rates would be developed too. ■■

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Understanding the seismic shift in ship finance

The global financial crisis and poorly performing shipping markets have reshaped the landscape in which shipping deals can be done.

Traditionally, it was often the case in shipping that a family-driven culture relied on cash deals or – more often – on the relationship bank that tops up the equity brought from internal or close quarters. But this classical setup has been shaken, stirred and reshaped. Overwhelmingly tight banking regulation – due to public pressure – has left little space for relationship banking. Bending to European Central Bank (ECB) demands, European banks have to de-risk their balance sheets and thus often conclude to reduce their shipping portfolio. The market of lenders is therefore changed; financial institutions from other regions and alternative sources of finance have to fill this credit gap.

For ship-owners restructuring their portfolios or devising a strategy for the future, the reality of ship finance is clear: the realities have undergone a seismic shift.

Starting on the equity side, owners have to realise their projects themselves with strongly reduced leverage. On top of that, bankers are colloquially asking for more “skin in the game”. In other words, the initiating owners need to bring a more significant share of the equity to the table. If a project turns sour, it will “hurt”. That means in any structure of equity mix, be it through a German Kommanditgesellschaft (KG), a Norwegian kommandittselskap (KS), an American Master Limited Partnership (MLP) or an Initial Public Offering (IPO) – the creative force in the person of the shipowner needs to also be financially involved.

The general seismic shift has created collateral realignment of equity sources. The much coveted KG-market in Germany that drove much of the containership expansion in the 1990s and the early 2000s, is pretty much dormant. Though the system as such has proven to be resilient, the considerable lack of willing investors is an indication of hibernation for many more months to come. While KS-structures seemed equally in decline and widespread hesitation on Wall Street to plunge into more shipping IPOs, while the markets cannot be painted rosily with the best-told story, there has been a strong focus on private equity for some time.

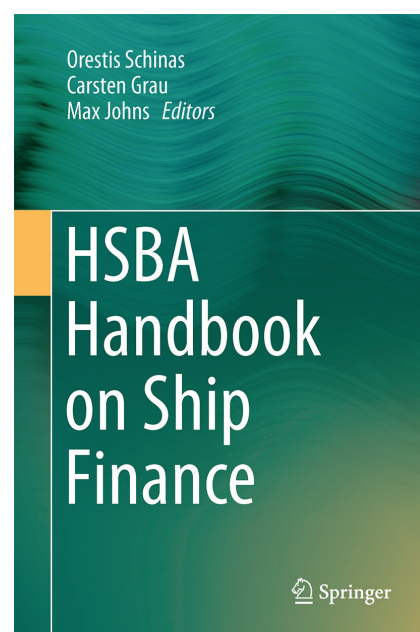
With a vast variety of Private Equity (PE)-investors and hedge funds looking into shipping investments, few major houses like Oaktree seem to have ventured into shipping on a structured and broad path. The alignment of expectations, risk assessments and exit horizons needed a process of acclimatisation that took several years. However, numerous deals have been realised that would not have been heard of a decade ago. And still, a number of shipping companies sit in the wings for IPOs in the usual places, while testing the ground with MLPs for the time being. The game of financing becomes more complex yet more interesting. Corporatisation of shipping companies is at its dawn.

New ground has been broken with the entrance of Islamic finance structures into shipping. Originally reduced to predictable clients especially from the Middle East, meanwhile also ship-owners in the West have investigated the scope of possible deals and strings attached. It appears

that Islamic finance is on a slow but steady rise. Interestingly, the number of successful deals is rarely being reported.

“Only seven years did suffice to change the landscape of ship finance for good,” said Orestis Schinas, head of the maritime Business School at HSBA in Hamburg. The professor with Greek origins understands that the changes are here to stay: “Whoever wants to play in the game of ship-owning in the next decade, needs to learn the new rules. Risk management, public and private investments will and the credit side of the deals will all be fundamentally different to pre-2008.”

Hamburg has taken the changes into focus with its maritime business school HSBA. Schinas has edited a major book on the



new state of ship finance, for practitioners and scholars alike. “Whoever wants to be in the game and remain there needs to keep on learning all the time. That is why our book has been jointly written by practitioners and academics”, explains Schinas. Indeed, the book covers a number of classical avenues of finance but also ventures into less covered ground.

Seeing the fundamental changes in the sector of ship finance, it does not seem accidental, that also BIMCO has put the issue on the agenda, directed by its Board. As has been reported, the Documentary Committee (DC) is contemplating a standard ship finance term sheet that may facilitate and standardise the relationship between ship-owner and bank. As much as this is the task of a decade, as much it may be worth pursuing. If successful, a standard term sheet may help for better transparency and eventually to a more stable environment. Dealing in an environment that had not been exposed to the BIMCO documents as yet, the task for the DC is ambitious.

The overall aim would be for such an agreement to offer lenders and borrowers

a comprehensive, well-known and to the extent possible shorter and simpler standard, which could replace the many individually drafted and often long-winded agreements developed independently by banks, typically on the basis of general formats. This, in turn, would have the potential of facilitating the provision of ship financing, increasing predictability and reducing cost.

A term sheet, which can be considered similar to a recap, contains a number of provisions describing either a term loan facility (a traditional mortgage loan), a revolving credit facility (a balloon loan, or a sort of overdraft facility), or a combination of both (which will typically be the case). A term sheet will inter alia include information about the parties and provisions about the facilities; currency, interest, and fees; guarantee; security; prepayment and cancellation; and conditions precedent. Term sheets will normally be 10-15 pages in length, as compared to fully-fledged ship financing agreements, the number of pages of which will rather be in their hundreds.

On the way to complete the first BIMCO

standard ship financing term sheet the HSBA book may come in handy, as it is not a textbook or a collection of papers that reflect pure academic views but an anthology of viewpoints of experts and a compilation of solutions employed by decision-makers and specialists in order to tackle complicated market and financial conditions. The topics and subjects considered demonstrate also the innovative character of this effort. As said Hans-Jörg Schmidt-Trenz in his introduction: “This crisis on the shipping markets and the huge uncertainties in the field of ship finance demonstrate the vulnerability of the maritime industry and the need to come up with new ideas and concepts to overcome these challenges”, but first the industry should learn from the past!

Orestis Shinas, Carsten Grau, Max Johns (Eds.): *HSBA Handbook of Shipfinance*. Springer, Heidelberg New York Dordrecht London, 2015.

ISBN 978-3-662-43409-3; ISBN 978-3-662-43410-9 (eBook). DOI 10.1007/978-3-662-43410-9. ■■

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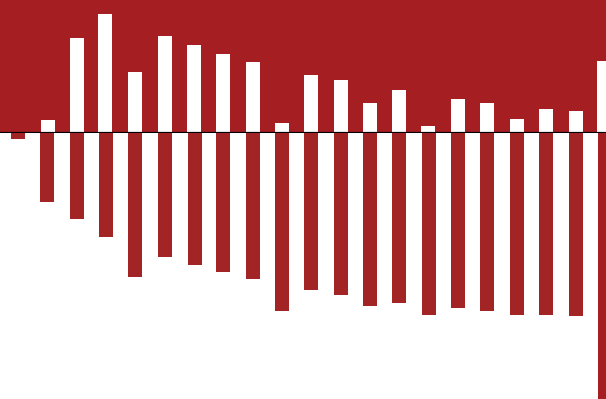
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Shipping must understand risk in order to manage it efficiently

Risk management is about all aspects of risk – not just financial, but operational, legal and environmental as well. Shipping is exposed to all these categories of risk and can benefit greatly from reducing that exposure.

Moore Stephens recently published its inaugural Shipping Risk Survey, which revealed a reasonably good overall level of satisfaction on the part of respondents that sound enterprise and business risk management was contributing to the success of their organisations, and that there was a healthy degree of involvement by senior management.

The survey, which will be updated annually, sought to gauge how effectively enterprise and business risks are being managed in the shipping industry, and to analyse how key risks are being handled by companies, how those companies rank the seriousness of the threats they face and what approach the industry adopts to dealing with risk. It was sent to an international database of shipowners, managers, charterers, operators, advisers and other professionals, predominantly in Europe, Asia, the Americas and Africa. The majority of these (81%) were privately owned operators, with the rest being publicly traded or listed companies.

Respondents to the survey rated the extent to which enterprise and business risk management is contributing to the success of their organisation at an average 6.9 out of a possible score of 10. Over a quarter of respondents (26%) returned a rating of 8, while almost three-quarters (74%) put the figure at more than 5 out of 10.

Overall, a third of respondents to the survey felt that enterprise and business risk was being managed effectively by their organisations, while 37% confirmed that

such risk was managed by means of discussion without formal documentation. Overall, 42% of respondents noted that risk was documented by the use of spreadsheets or written reports. Internally developed software was employed by 13% of respondents to manage and document risk, as opposed to the 6% who used third-party software. Other methods cited by respondents as a means of managing risk ranged from “industry data” to “hope”.

One respondent noted, “We are highly focused, but a shipowner can only evaluate closely up until the moment when the ships are ordered or purchased. Once the bet is placed, Lady Luck takes a hand. The three most important things are timing, timing and timing.” Another emphasised, “Enterprise Risk Management has to contribute substantially to the success of an organisation because regulators and rating agencies are becoming increasingly ERM-focused.”

Elsewhere it was noted, “Risk management does not contribute directly to our success, but it does help in terms of dealing with competition in the market.” Another respondent identified sanctions and aggressive political policies throughout the world as the biggest risk, while another still said the best way to minimise risk was to “avoid known high-risk clients who could seriously affect the rest of your business.”

Some 72% of respondents felt that the senior managers in their organisations had a high degree of involvement in enterprise and business risk management, as opposed to

the 18% who said senior management’s involvement was limited to “periodic interest if risks materialise.” While 8% of respondents said that senior management “acknowledged but had a limited involvement in” enterprise and risk management, just 2% said senior management had no involvement whatsoever. One respondent said, “Risk management, both operational and financial, is a key day-to-day management routine, reported monthly and quarterly and included in full-year activity schedules.”

Demand trends were deemed by the greatest number of respondents (19%) to pose the highest level of risk to their organisation over the next twelve months, closely followed by competition (18%). The cost and availability of finance featured in third place, at 13%, while operating costs and





tonnage supply each figured at 10%. Other factors cited as posing a high level of risk included political and economic developments and international sanctions, cybersecurity, counterparty creditworthiness and technical breakdown.

One respondent was convinced that demand for shipping would increase, but another was far less confident about the availability of competent crews to man the ships. Another still said, “It is seven years since the freight markets started their steady downward trend, and there is not the slightest sign of an upturn.” Elsewhere it was noted, “Shipping requires good financing, with limited risk to operators and charterers.”

Respondents to the survey felt that the level of risk posed by most of the factors which impacted their business would remain largely unchanged over the next twelve months, with the exception of demand trends, the supply of competent crew and tonnage supply, which were perceived to have the potential for increased risk. Matters beyond the control of shipping also figured in the replies from respondents, one of whom emphasised, “Geopolitical issues will keep influencing the market economy, which will make business unstable and lead to lack of sustainability.”

Effective management of enterprise and business risk is essential to both profitability and efficiency in today’s highly regulated shipping industry, which is still recovering from years of economic downturn and depressed freight markets. In February 2015, the average confidence level expressed by respondents to the quarterly Moore Stephens Shipping Confidence Survey was 5.5 on a scale of 1 (low) to 10 (high), down from the 5.7 recorded in November 2014. This is the lowest figure since August 2012, and compares to the record high of 6.8 when the survey was launched in May 2008.

Charterers recorded the biggest fall in confidence, but confidence on the part of owners was also down.

It is good to see that respondents to the Shipping Risk Survey 2015 rated at almost 7 out of 10 the extent to which enterprise and business risk management is contributing to the success of their organisations. It is encouraging, also, to see the healthy level of senior management involvement in the management of risk. But the figures need to be higher still if shipping is to claim that it is effectively managing risk to the best of its ability.

You cannot take the risk out of shipping. Indeed, it is part of the tradition of the industry, and one of the factors which attract investors. For too long, however, too many companies have failed to follow a joined-up risk management process. Inefficient management processes, and insufficient resources and time devoted to risk management, create difficulties and increase the risk of business failure.

Risk, in all its various guises, is only likely to increase in the shipping industry. Some of the risks are well recognised and traditionally well handled, such as those arising from competitive pressures. But other risks are of an emerging nature, such as cybersecurity, while others still, for example the financial stability of counterparties, fraud and money-laundering, tend to fluctuate in their level of severity with geographic location and market conditions.

There have been indications in the past twelve months and more that the banks are starting to show a renewed appetite for ship finance. The financial landscape has changed in the meantime, however, with the entry into the market of a significant level of private equity investment. The latter is traditionally more short term in nature

than the typical shipping industry investor and is likely to be more demanding in its expectations of making a return on its investment within a given time frame. Both private equity and banks, as well as counterparties and other third parties, will be looking to work with risk-aware shipping businesses, to ensure that their money is in safe hands.

Shipping cannot afford to underestimate its exposure to risk. Last year’s bankruptcy filing of Denmark’s OW Bunker set alarm bells ringing in the industry. The underlying reasons for the company’s collapse are still being analysed, but references to major risk management and fraud losses, and to unrecoverable credit, have been common throughout all reports. Shipping is also vulnerable to an increasing level of IT-related risk and is in some respects operating in a changed world and to a different risk profile. All this, moreover, is taking place against a background of ever tighter regulatory controls, which bring with them serious cost implications.

There is enough accumulated knowledge within the industry, and a sufficient level of technological innovation, to ensure that shipping properly manages its exposure to risk. Companies which fail to monitor risk intelligently and systematically, to oversee the effectiveness of risk controls and to embed risk management into their daily activities are likely to pay a high price. ■

Editor’s Note: This commentary on current shipping matters is supplied by Moore Stephens, the leading accountant and shipping industry adviser. Moore Stephens LLP is a member firm of Moore Stephens International Limited, with 667 offices of independent member firms in 103 countries.

El Niño and the wheat trade

The approaching El Niño threatens to be the strongest in a decade, but it might not be unfavourable from a shipping point of view. Apart from increased port congestion and port delays, there is a strong chance of increased demand for smaller vessels with a shift in the pattern of grain trade.

Here we examine the impact of El Niño on shipping demand by looking at how Indonesia might import more from Canada and less from Australia, thus increasing the demand for smaller vessels.

El Niño

There is still some doubt about the severity of El Niño, largely because global warming makes it difficult to predict the cause of rise in ocean temperature. A general rise of 1.5% to 3% in ocean temperature characterises an El Niño, and there is already an increase of 2% in the Pacific Ocean’s temperature.

Let’s assume it is an El Niño, and a strong one. It is also predicted that El Niño will peak in late summer and persists into 2016, which would have a severe impact on grain production.

El Niño would have different impacts in different countries:

Australia: The shift in rainfall away from the western Pacific associated with El Niño, means that Australian rainfall is usually reduced, particularly across the eastern and northern parts of the continent. The northern part is the most important part for grain production, with the highest inherent soil fertility. Yield in northern Australia

depends to a significant degree on conservation of soil moisture from summer rainfall. In case of low rainfall and dry weather, production is expected to drastically reduce.

Along with Australia, India and Indonesia are also expected to have dry weather. Fears of drought and low grain production in the Pacific countries might induce higher demand for grain imports to India and Indonesia.

Indonesia: Low grain production in Indonesia as a result of El Niño might induce more demand for wheat, and this will largely come from Canada because of the parallel decrease in Australian production. This will greatly increase tonne-mile demand.

Canada: During winter, El Niño increases temperature in Canada, and this warmer weather will actually benefit grain producers, making conditions better for winter wheat. In Canada, the major impact of El Niño is expected to be felt around the Ontario region, which is where most winter wheat is produced.

So, an intense El Niño impact is going to have a positive impact on Canada’s wheat



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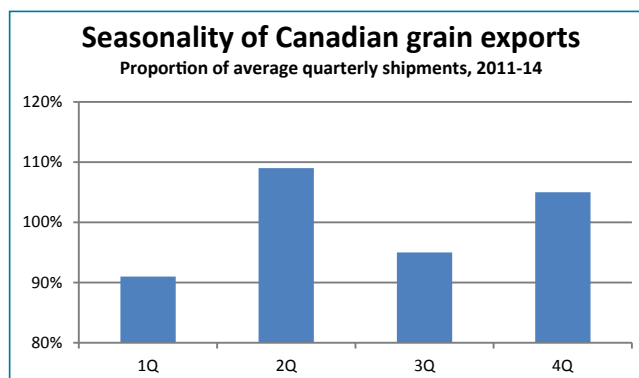
exports. Canada exports 70% of its wheat production, and a large part of that goes to Indonesia.

The first quarter has traditionally been the lowest exporting quarter (due to low production) largely because of very cold weather. With an increase in temperature due to a strong El Niño, crop production might increase substantially. ■■

Editor’s Note: Rahul is the lead research analyst on dry bulk shipping at Drewry. Rahul has an advance master’s degree in International Economics from University of Namur, Belgium. He has his post graduate degree in Economics from Jawaharlal Nehru University, New Delhi. He has been working on shipping and economic research for the past nine years. He has been the editor of Drewry’s flagship monthly shipping insight. He has also been the editor of dry bulk publications – Dry bulk forecaster and dry bulk insight. He has been speaking on various facets of dry bulk market at various international conferences. In addition, he has also been working on consultancy assignments on ports and dry bulk freight market strategy. He is a regular contributor to various magazines and journals including International Bulk Journal.

	Abbott Point	Quebec
Days per voyage	32.8	92.5
Tonnes per trip	52,250	52,250
Tonnes per year	581,441	206,176
Supramax vessels per million tonnes	1.7	4.9

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Oceans Beyond Piracy

OBP was launched in 2010 and its goal is to capitalise on its unique position as an independent and unbiased contributor to global counter-piracy efforts; to influence the development of a sustainable response to maritime piracy through mobilising maritime stakeholders.

In its early work, OBP identified a demand for an objective assessment of maritime piracy, and launched its first “Economic Cost of Piracy” and “Human Cost of Piracy” studies in 2011. In 2014, these studies were merged into “The State of Maritime Piracy” report. Together, the reports have helped inform global counter piracy policy and practice, as well as become the benchmark reference. The State of Maritime Piracy 2014 report was released on 10 June 2015, and it analyses the impacts of piracy during 2014 in the western Indian Ocean region, the Gulf of Guinea, and for the first time, in South-East Asia. Similar to past years, BIMCO’s experts audited and provided technical expertise for this year’s report.

OBP’s analysis of pirate attacks in South-East Asia documents a recurring threat to seafarers due to an increasing number of attacks combined with the high success rate of criminals in the region. The study found that more than 90% of the reported attacks resulted in pirates successfully boarding target ships, and 800 seafarers involved in incidents in South-East Asia where violence or the threat of violence was specifically documented.

Piracy in the Gulf of Guinea continues at an unacceptable rate. This is compounded by the failure to arrest and prosecute suspected pirates and the lack of effective co-operation between regional governments and industry operating in the area. The region also faces challenges related to chronic under-reporting of incidents. An estimated 70% of piracy-related incidents in the Gulf of Guinea are never reported, which makes it difficult to assess the extent of the threats seafarers face. OBP estimates the total economic cost of piracy in the Gulf of Guinea in 2014 to be \$983 million, of which 46% was borne by the shipping industry.

In the western Indian Ocean OBP found that the rate of piracy continued to be suppressed throughout 2014. While the naval mandates recommended industry self-protection practices and the size of the High Risk Area remain unchanged, overall commitment to piracy containment at sea has continued to regress. The report documents that the number of committed naval assets and the use of ship protection measures such as increased speed and re-routing by merchant ships continued to decrease. This resulted in a total economic

cost reduction of 28% in 2014 to \$2.3 billion – 64% of which was borne by the shipping industry. Alarming, the perceived reduction in the piracy threat has resulted in more foreign fishing vessels returning to areas close to the coast of Somalia, leading to a number of attacks and hijackings in 2015.

The report clearly demonstrates that seafarers suffer disproportionately from piracy and armed robbery at sea: In 2014 at least 5,000 seafarers were attacked in South-East Asia, the Gulf of Guinea, and the western Indian Ocean. 26 hostages from the Naham 3 still remain in captivity in Somalia, more than three years after the hijacking of their ship.

Continued cross sector co-operation is increasingly vital to ensure the security of global maritime trade routes, and the safety of seafarers. The current threat of violent maritime crime such as piracy is unacceptable and would not be tolerated if land or air routes were under similar risks. Likewise, this threat must not be tolerated at sea. ■■

Editor’s Note: Oceans Beyond Piracy (OBP) is a project of the One Earth Future Foundation, a privately funded non-profit organisation based in Colorado, US.

AUDITOR'S STATEMENT

BIMCO was again invited to carry out a review of the methodologies and the calculations of this year's State of Maritime Piracy report. We have found that the report continues to live up to its usual high standards and will retain its respect and credibility among all stakeholders in government and the shipping industry alike. The report constitutes an informed and constructive contribution to the counter-piracy debate.

It is clear to see that 2014 was a year of improvement in the Western Indian Ocean. Whilst attacks and hijackings have seemingly been deterred and defeated, there is, however, still clear evidence that the conditions ashore that create piracy have not changed substantially. The three legs of the deterrence milking stool, BMP, naval presence, and armed guards, have clearly reduced the threat in the High Risk Area to one of lower risk. The continued use of private armed guards onboard ships, though, should not be seen as an endorsement or institutionalization of the practice by the shipping industry, or as a waiver of the fundamental obligations of flag states under UNCLOS.

As pirate attacks continue to decline it is of paramount importance that the international community does not assume the fight is over, but continues to shift focus and resources to sustainable solutions that target the drivers of piracy at their root source. The myriad of capacity-building and regional coordination efforts are insufficiently developed to suggest that piracy has been eradicated to the extent that freedom of navigation can be assured without the need for additional self-protection measures, the payment of additional insurance premiums, and a naval presence.

Many of the lessons learned from Somali piracy continue to be taken forward, as and where they can, in dealing with piracy problems in the Gulf of Guinea region, where seafarers are regularly confronted with violent kidnapping and ransom. Here there seems to be a will to resolve the problems; the implementation of the essential solutions ashore, however, continues to take far too long whilst the industry continues to pay an unfair and unreasonable cost towards the protection it needs in order to trade. Without the continuing level of interest and commitment by both regional and international actors in the pursuit of solutions, such as the Yaoundé agreement, then the problem will remain unresolved.

This year for the first time, the report also includes a section on the human cost of piracy in Southeast Asia. The IMB has suggested that, "There's a risk that the attacks and violence could increase if left unabated." In the region, 93% of all attacks result in successful boarding of the victim vessel, significantly increasing the risk of direct, often violent, interaction between pirates and seafarers. This is particularly true in incidents where pirates attack a vessel with the goal of stealing its cargo and therefore need to stay on the vessel for a prolonged period of time. Worryingly, incidents, boardings, and piracy successes are highest there of any of the three regions Oceans Beyond Piracy has assessed in this year's report.

The findings of the report once more highlight the importance of the continued focus of government and shipping industry stakeholders on combating piracy. It illustrates a reduction in the overall costs, but at the same time draws attention to the costs of capacity-building and their implementation. It is vital to change the conditions ashore that create piracy in areas where it occurs, and the report highlights how expensive this exercise is.

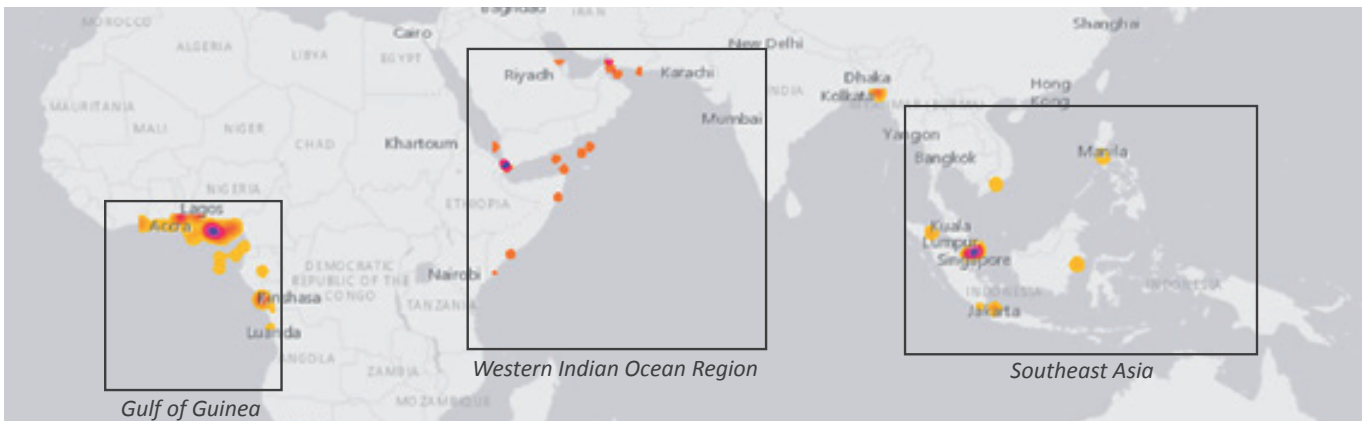
Angus Frew

Angus Frew
Secretary General, BIMCO

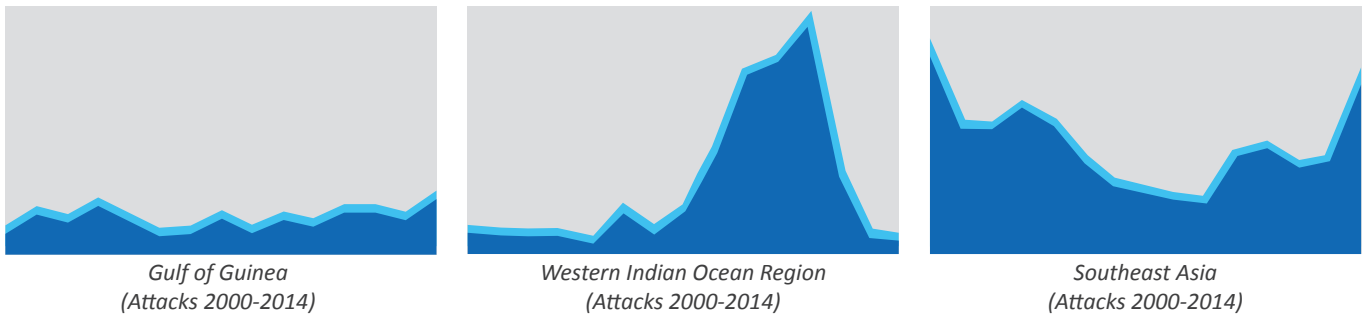


BIMCO

STATE OF MARITIME PIRACY 2014 AREAS OF INTEREST:



REGIONAL PIRACY TREND COMPARISON:



HUMAN COST OF PIRACY IN 2014:

1035
SEAFARERS
ATTACKED
Gulf of Guinea

- RISKS:**
- Violent initial attack
 - Opportunistic kidnap and ransom

320
SEAFARERS
ATTACKED
Western Indian Ocean

- RISKS:**
- Long-term hostage taking
 - Regional seafarers more vulnerable

3654
SEAFARERS
ATTACKED
Southeast Asia

- RISKS:**
- High percentage of pirate boarding
 - No regard for seafarer welfare

TOTAL SEAFARERS ATTACKED BY PIRATES IN 2014

5009

ECONOMIC COSTS OF PIRACY IN 2014:

\$983
MILLION
Gulf of Guinea

\$2.3
BILLION
Western Indian Ocean Region

Economic costs of Southeast Asia were not calculated for this year's report.

THE STATE OF MARITIME PIRACY IN SE ASIA

OVERVIEW

HUMAN COST KEY FINDINGS:

OVER 3000 SEAFARERS EXPERIENCED DIRECT CONTACT WITH PIRATES

800 SEAFARERS SUBJECTED TO VIOLENCE OR THREAT OF VIOLENCE

51% OF ATTACKS INVOLVED WEAPONS

- OBP estimates that 40% of the seafarers affected by piracy were from countries within the SE Asia region.
- Physical abuse of seafarers was reported in 28% of incidents.
- The kidnapping for ransom model is absent in SE Asia. Pirates show a callous disregard for seafarers.

PIRATE ACTIVITY KEY FINDINGS:

185 TOTAL ATTACKS

64% OF ATTACKS OCCURRED NEAR THE MALACCA OR SINGAPORE STRAIT

173 / **185** **93%** SUCCESSFUL BOARDING RATE

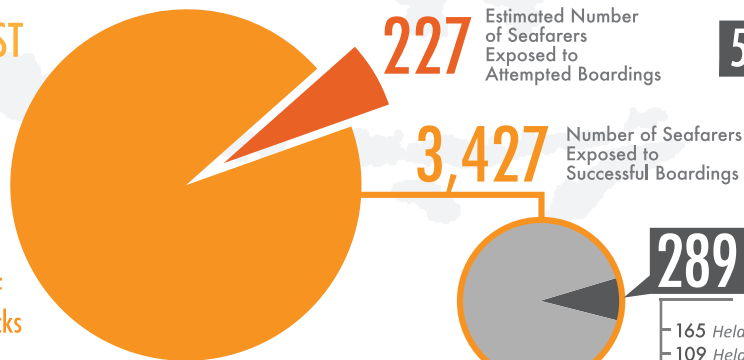
- The complex nature of maritime jurisdictions in the region presents many challenges for the reporting and classification of events.
- SE Asia recorded the highest rate of successful attacks of the three regions OBP assessed in this year's report.
- 93% boarding rate in SE Asia could be affected by reporting ambiguities and vulnerable shipping patterns.

HUMAN COST BREAKDOWN:

2014 HUMAN COST OF PIRACY IN SE ASIA

3,654

Total Estimated Number of Seafarers Exposed to Attacks



5 Seafarers Killed

- 165 Held for less than a day
- 109 Held for 2-13 days
- 15 Held of Unknown period of time

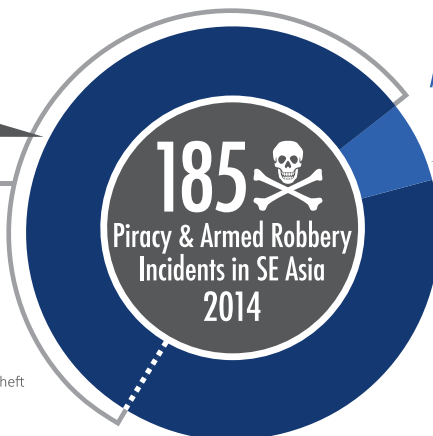
PIRATE ACTIVITY BREAKDOWN:

BOARDINGS

93% 173

Once onboard the vessel **103** OF **173** Resulted in a successful attack

- 22 Involved Theft
- 69 Involved Aggravated Robbery
- 12 Involved Hostage-Taking and Cargo Theft



THE STATE OF MARITIME PIRACY IN THE WESTERN INDIAN OCEAN REGION

OVERVIEW

ECONOMIC COST KEY FINDINGS:

\$2.3 BILLION
TOTAL COST
DOWN 28% COMPARED TO 2013

64% OF COSTS
BORNE BY INDUSTRY

2.5% OF TOTAL COST
ATTRIBUTED TO
LONG-TERM INVESTMENT

- International navy coalition mandates remain unchanged, but fewer assets have been committed to the missions.
- The International Bargaining Forum's High Risk Area was adjusted in mid-2014, reducing the estimated number of transits - and therefore seafarers - eligible for hazard pay by 50%.
- Industry Best Management Practices (BMP), the defined High Risk Area (HRA) and the Joint War Committee (JWC) Listed Area for war risk insurance have not changed since 2012, but re-routing and observed speeds continue to decline and insurance premiums have dropped steadily since the height of the piracy crisis.
- Percentage of vessels employing armed guards remained stable, but teams are getting smaller and more diverse due to cost pressures.

HUMAN COST KEY FINDINGS:

320 SEAFARERS
SUBJECTED TO ATTACKS

18 HOSTAGES
RELEASED
IN 2014

26 HIGH RISK
HOSTAGES
REMAIN IN CAPTIVITY
HELD OVER 1,150 DAYS

- Accounts from released hostages in 2014 (11 hostages from *MV Albedo* held for 1,288 days & 7 hostages from *MV Asphalt Venture* held for 1,492 days) revealed the full extent of torture and mistreatment inflicted on seafarers.
- 26 hostages (all taken from *FV Naham 3* - hijacked 26 March 2012) remain at very high risk due to poor conditions of confinement ashore and slow negotiations.

PIRATE ACTIVITY KEY FINDINGS:

18 PIRATE ATTACKS

2 DHOWS
SUCCESSFULLY HIJACKED

0 COMMERCIAL VESSELS HIJACKED

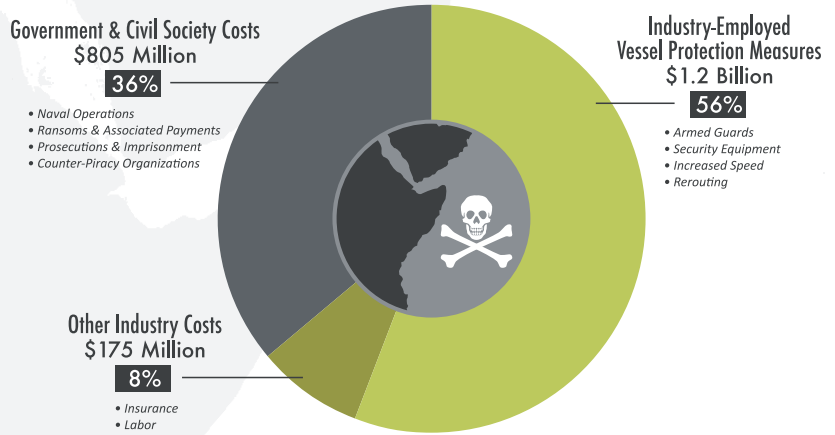
- Reports of "Suspicious Activity" are still common, accounting for 87% of all reported pirate activity in the Western Indian Ocean Region (WIOR); they are often classified as "False Alarms" by reporting centers.
- Restrictive reporting definitions and frameworks could mask important warning indicators and precursors.
- Incident reports for regional vessels are unreliable due to intimidation and lack of local reporting agencies.

WESTERN INDIAN OCEAN OVERVIEW

ECONOMIC COST BREAKDOWN:

**Total Economic Cost of Piracy
in the
WESTERN INDIAN OCEAN REGION
2014**

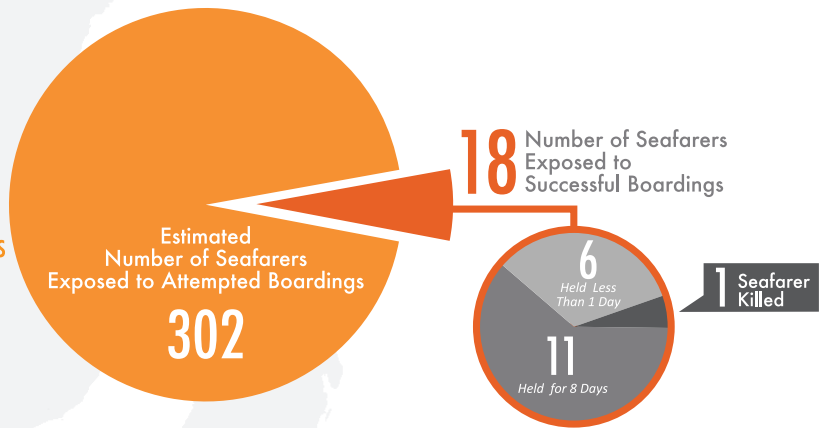
\$2.2 – \$2.3 Billion



HUMAN COST BREAKDOWN:

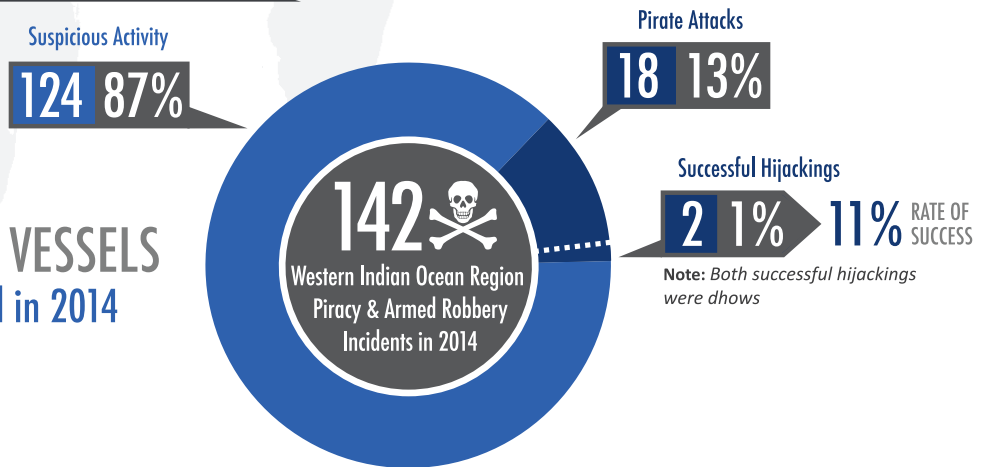
**2014 HUMAN COST
OF PIRACY IN THE
WESTERN INDIAN OCEAN REGION**

320 Total Estimated Number of Seafarers Exposed to Attacks



PIRATE ACTIVITY BREAKDOWN:

ZERO MERCHANT VESSELS
Successfully Pirated in 2014



THE STATE OF MARITIME PIRACY IN THE GULF OF GUINEA

OVERVIEW

ECONOMIC COST KEY FINDINGS:

\$983
MILLION
TOTAL COST

\$314
MILLION SPENT ON
VESSEL PROTECTION MEASURES

47%
OF COSTS
BORNE BY INDUSTRY

- Region significantly increased priority for developing its maritime security infrastructure, but capacity still lacking.
- Over half of the total economic cost attributed to military operations.
- Ransom costs estimated at \$1.6 Million, but confidential systems of payment make true cost difficult to obtain.
- OBP estimations show 29% of total costs attributable to regional states.

HUMAN COST KEY FINDINGS:

1035
SEAFARERS
SUBJECTED
TO ATTACKS

170
SEAFARERS
DETAINED
OR HELD HOSTAGE

55%
OF ATTACKS
INVOLVED WEAPONS

- Information related to the impact of piracy attacks on seafarers is limited due to reporting challenges.
- Seafarer awareness and advocacy more challenging in the Gulf of Guinea.
- Regional seafarers at greater risk due to intimidation from local perpetrators.
- No piracy prosecutions/No accountability for criminals.

PIRATE ACTIVITY KEY FINDINGS:

67
TOTAL ATTACKS

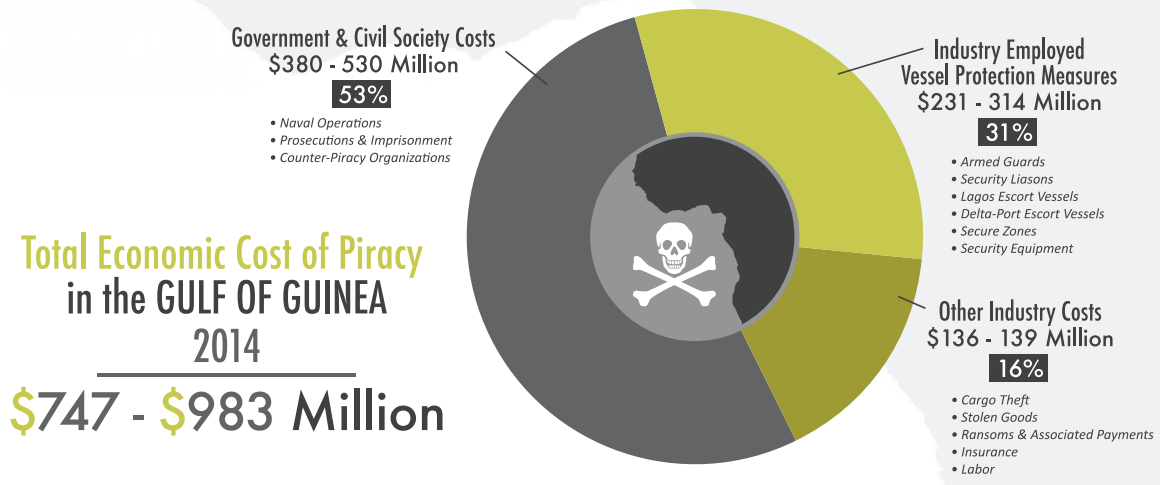
58% OF ATTACKS
OCCURRED IN
INTERNATIONAL WATERS

26/67 **39%**
ATTACK SUCCESS RATE

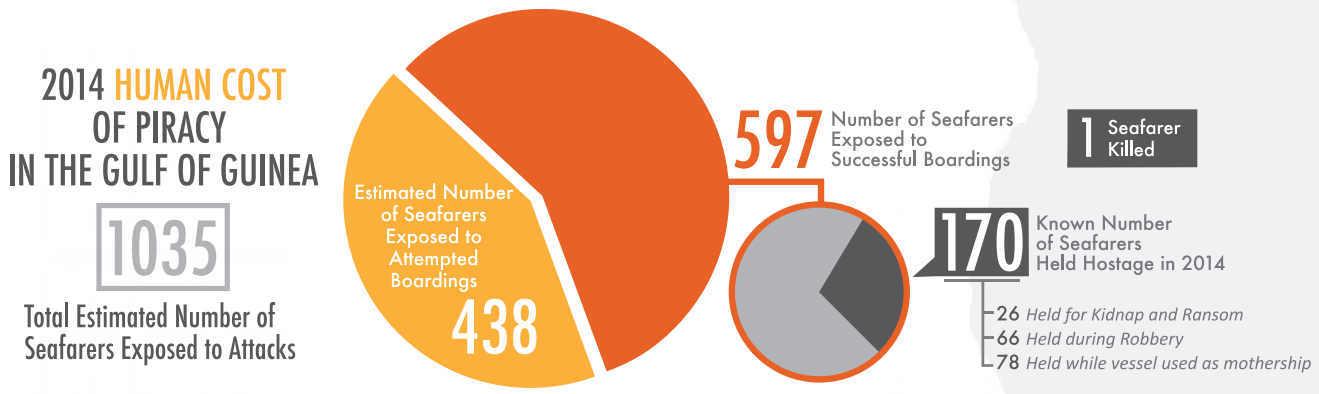
- Decline in reported attacks in 2014, but consistent with historical patterns of fluctuation in the region.
- As many as 70% of attacks go unreported (Pottengal Mukundan - Director, International Maritime Bureau - IMB).
- Increase in number of attacks in international waters represents piracy's expanding geographical range.
- 60% of piracy incidents occurred in the waters off Nigeria.

GULF OF GUINEA OVERVIEW

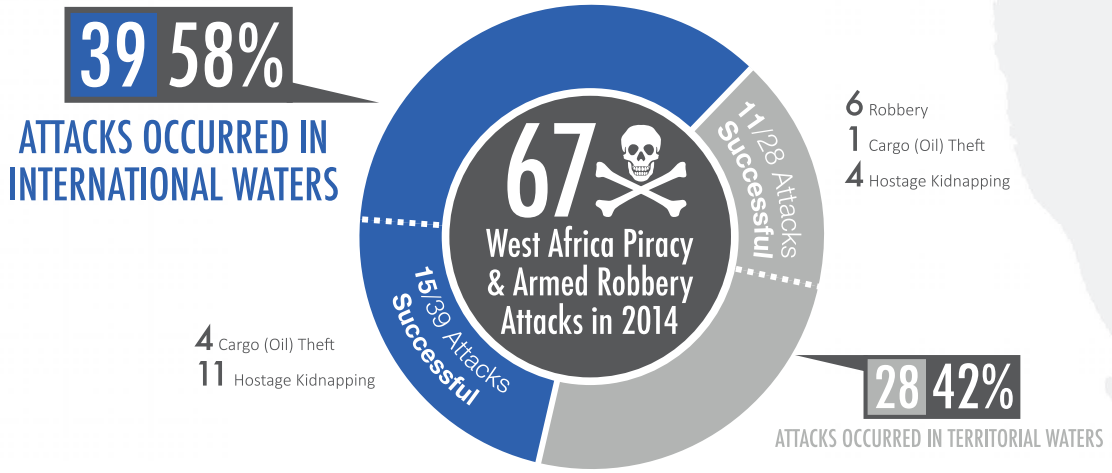
ECONOMIC COST BREAKDOWN:



HUMAN COST BREAKDOWN:



PIRATE ACTIVITY BREAKDOWN:



IMF forecast China's economy to grow 6.8% in 2015

IMF spelt out that China was facing slowing growth over the next two years amid their string of reforms and rebalance its economy to stem financial risks.

The IMF estimated that the world's second-largest economy would grow 6.8 % in 2015 before slowing to 6.3 % in 2016, maintaining its previous predictions from January. IMF was particularly concerned with China's financial risks. It pointed out that the economic vulnerabilities would continue to increase and the available policy space would shrink in case the pattern of growth remained unchanged. Meanwhile, the expected decline in growth from 2014's 7.4% came as previous excesses in real estate, credit, and investment continued to unwind. IMF highlights that an unsustainable pattern of growth in China has led to rising vulnerabilities in the corporate, financial, and government sectors.

The Chinese government in March announced an official growth target of about 7% for this year, below last year's objective of about 7.5%. The forecasts come as Beijing seeks to transition China's economy from its old model of investment-fuelled growth that resulted in years of double-digit GDP expansion but is now seen as unsustainable. Authorities have expressed a willingness to accept lower growth rates as they try to make consumer spending the key driver of activity. But investment remains crucial and the IMF cited its possible intensified deceleration, including in real estate, as a near-term risk, after a slowdown last year that followed a 2009-2012 boom.

China specifically called for resource allocation efficiency to be improved with reforms in financial and state-owned enterprises. And it is hoped that reforms in the pension system and other social safety net areas will

help shift the composition of growth toward domestic consumption, which is likely to prove more sustainable in the long term.

The IMF also forecasts that China's consumer inflation rate will fall to 1.2% this year after hitting 2% last year, before rebounding to 1.5% next year. Beijing is forecasting consumer inflation of about 3% for this year. Economists have expressed concerns about the risk of deflation in China, especially after January's slump in consumer inflation to 0.8%, the lowest since November 2009.

China shipyards' performance in Q1

China's shipyards saw new building orders slip in the first three months of this year, but production at the yard continued to rise, according to figures released by China Association of The National Shipbuilding Industry (Cansi).

From January to March, new orders at Chinese shipyards plunged by 76.8% year-on-year to 5.99m dwt, putting the existing order book at 144.93m dwt at the end of March, down 2.5% year-on-year. Completed tonnage, however, continued to increase by 27.5% to 9.47m dwt, with 8.54m dwt due for exports, Cansi figures showed. Based on figures from the 54 leading yards monitored by Cansi, they received new orders of 4.87m dwt in the first quarter, a drop of 80% compared to the same period of last year. The 54 leading yards sat on a combined existing order backlog of 142.88m dwt, largely stable compared to year-ago figures. Completed vessel tonnage came up to 7.88m dwt, up 23.3%.

On a wider scale, Cansi also monitors 88 main yards, which showed that they completed a combined vessel tonnage valued at RMB93.37bn (\$15.06bn) in the first three months, representing an increase of 8.4% year-on-year. The 88 main yards also drew in a total revenue of RMB64.67bn in the first quarter, an increase of 8.9% compared to the previous corresponding period. Net profit was recorded at RMB170m, down 87.8%. Cansi also revealed that between January and February this year, 1,486 Chinese shipyards generated a total revenue of RMB81.46bn, up 5.5% from year-ago figures. The profit was registered at RMB2.27bn, down 14.2%.

China's shipbuilding industry is currently experiencing a recession and undergoing a consolidation phase, where there are now a little more than 100 shipyards with active day-to-day operations, shrinking from approximately 300 during the second half of last year.

China bid to enhance clarity for ship arrest

The Supreme People's Court of PRC published the Regulations on Certain Issues Concerning the Application of Law Relating to Arrest and Auction of Ships ("The Regulations") which came into force on 1 March 2015.

With China being one of the mainstays of global trade, the number of ship arrest applications has increased continually; although China is still not regarded as a haven for ship arrest. The regulations are intended to extend the scope of the ships that can be subject to legal auction/sale after arrest, to clarify and simplify the ship arrest and auction/sale procedures, and increase the judicial efficiency of the legal sale/auction.



The key changes to the previous regime under the Regulations are highlighted as follows:

- According to Article 2 of the regulations, a maritime court can order the arrest of a ship which has already been arrested by itself or by other Chinese maritime courts. In addition, if the applicant for the first arrest does not then apply to auction the ship, the applicant for a subsequent arrest is entitled to make such an application, and will not need to wait for the previous arrest to be lifted.
- A ship arrested under a bareboat charter party can be auctioned or sold. According to the PRC Special Maritime Procedure Law, a ship under a bareboat charter party can be arrested if the bareboat charterer is responsible for the maritime claim against which the arrest is applied for. However, it was arguable whether a ship so arrested could be auctioned or sold if security was not duly provided to lift the arrest. The regulations confirm that a ship so arrested can be auctioned or sold in such circumstances.
- The regulations make it clear that, except for straightforward claims arising from crew contracts or personal injury/death, providing counter security for a ship arrest is a compulsory requirement; regardless of whether the application is filed before or after the commencement of litigation/arbitration. The regulations further provide that the amount of counter security should be equivalent to the amount of “*the various costs and expenses of maintenance of the ship that may be incurred during the arrest, the loss of earnings caused by the arrest, and the costs incurred by the respondent to provide security for lifting the arrest*”. Although it remains to be seen how the maritime

courts will apply the regulations, the Chinese maritime courts may still have considerable discretion when ascertaining the amount of any counter security.

- The regulations provide that, in the following 3 circumstances, the court could return the counter security to the applicant:
 - ▷ the respondent has agreed to the return
 - ▷ a binding legal document has ruled that the amount of compensation which the respondent should be liable for is approximately the same as that of the security demanded by the applicant; and
 - ▷ by the claimant’s application (for the return of the counter security) after issue of a corresponding and binding judgement, provided that the respondent fails to file an action for wrongful arrest within 30 days of being informed of the claimant’s application.
- The auction procedure has been simplified in various aspects under the regulations. In particular, if the first auction fails, the announcement period for the subsequent auction has been shortened from 30 days to 7 days.

With regard to the order of priority for the distribution of the proceeds of sale of a ship, the regulations have made it clear that, in circumstances where the maintenance costs incurred during the period when the ship was under arrest have been paid by parties other than the shipowner or the bareboat charterer, the said payments should be categorised as “litigation costs” and should enjoy the corresponding order of priority. In addition, with regard to “ordinary maritime claims” (i.e. claims which are not secured by maritime lien/possessory lien/

mortgage), those claims which are in relation to the ship will take priority over the other ordinary maritime claims.

A strong presence for Chinese steel exports this year

The China Iron & Steel Association (CISA) forecasts that China’s steel exports will remain competitive and are unlikely to fall much this year, as low prices and firm demand offset the scrapping of an export tax rebate on certain products.

China is determined to rein in exports to avoid increasing trade friction and, by cutting output, to reduce pollution, but a collapse in iron ore prices has helped Chinese steelmakers maintain the supply of cheap products for overseas markets. The government has removed a tax rebate for boron-added steel, originally introduced to encourage value-added products since the element gives a harder steel. Exporters have profited by claiming a rebate after adding minute amounts of the element. The removal has had some effect, and growing anti-dumping measures would also slow down growth in steel exports. Steel mills are looking to win a fresh export rebate by adding chrome to give their products more value and are targeting regions such as Southeast Asia and South America.

China boosted steel exports by around 50% last year to a record 94 million tonnes and Western industry bodies see little sign of a major rationalisation of the industry. Exports of steel products rose 41% in the first quarter from a year before to 25.78 million tonnes. (ZW) ■■

Editor’s Note: This report has been produced in co-operation with Reuters, CANSI, CISA and Clyde & Co.

Asia's business and regulatory leaders address industry challenges

This spring meetings in Korea and in Singapore saw business and regulatory leaders respectively meeting to address issues impacting the shipping industry both regionally and globally.

Asian Shipowners Forum

Under the theme 'One Asia', Asian Shipowners Forum (ASF) Chairman Mr. Youn Jae Lee opened the 24th annual session, including the AGM and an open shipping forum attended by BIMCO and other stakeholders to address issues affecting the shipping industry.

CO2 Emissions

The ASF was pleased to note that, at the 68th session of the IMO Marine Environment Protection Committee, steady progress has been made in discussions about monitoring, reporting & verification (MRV) of CO2 emissions being the next step in enhancing energy efficiency of international shipping.

The ASF was extremely disappointed, however, by the EU's unhelpful decision to preempt the current IMO negotiations by adopting a unilateral, regional regulation on the MRV of individual ship emissions which will apply to all ships entering EU waters.

"The EU's decision runs the risk of undermining discussions at the IMO," said Mr. Patrick Phoon. *"It is essential to have global regulations for global shipping developed through consensus at the IMO."*

Canal Tolls

The ASF meeting noted that, in 2015, the Suez Canal Authority refrained from implementing an annual toll increase that had been imposed in each of the previous three years, and the Panama Canal Authority reflected the shipping industry's opinion to a certain extent in its new toll structure/tariffs.

Mr Yasumi Kudo, Chairman of the Shipping Economics Review Committee, said, *"In order to prevent a recurrence of unilateral, sudden and irrational canal toll increases which would adversely affect a stable business environment, and to ensure safe transit, the ASF should do its utmost, in collaboration with international shipping organizations such as ICS, to establish an early and regular dialogue mechanism with canal authorities."*

Places of Refuge

In the aftermath of the Maritime Maisie incident, questions remain regarding the handling of places of refuge in the region. The ASF noted that whilst attention is focused on this issue when there is an incident, little seems to be discussed after the incident has been resolved. Delegates agreed that the consideration by a State to offer a place of refuge to a ship in distress with little knowledge of the protection available by way of the various IMO instruments would invariably provoke a strong local reaction against the place of refuge.

The ASF agreed that it is essential to continue the work of promotion and education, both to raise and maintain interest in the issue and to encourage governments to consider the issue in their local context.

Refugees & Migrants

The ASF expressed its deep concern at the humanitarian and political crisis involving migrants and refugees, both in the Mediterranean and in Asian waters. While merchant ships and their crews continue to rescue migrants and refugees distressed at

sea, the ASF notes that this is an increasingly serious issue for the maritime industry. Not only do seafarers face many risks when dealing with sick and injured people, but also refugees may seriously outnumber ships' crew. There is also the possibility that rescues at sea may be used as an avenue for terrorism.

The ASF urges Governments both in Europe and Asia to urgently address the issue in a humanitarian way, and encourages shipowners to take note of and act in accordance with the various industry publications on the subject.

Maritime Labour Convention 2006

The Maritime Labour Convention 2006, entered into force almost two years ago. To date, 66 ILO member States, including 7 ASF member states (Australia, Japan, Korea, Malaysia, Philippines, Singapore and Vietnam), representing more than 70% of global gross shipping tonnage, have ratified the convention.

ASF encourages all owners to pay due attention to the guidelines for implementing the Occupational Safety and Health Provisions of the Maritime Labour Convention 2006 to secure the well-being of seafarers aboard their vessels.

Ship Recycling

The ASF expressed its grave concern over the EU regulation which includes elements that are at variance with the Hong Kong Convention. Dr. Frank F. H. Lu, Chairman of the Ship Recycling Committee (SRC), emphasised that, *"The Hong Kong Convention is the only instrument for worldwide green ship recycling. We very much welcome recent movements of some EU member countries which request positive approaches to improve ship recycling facilities in South Asia, and oppose the exclusion of particular ship recycling methods. Through con-*



tinued dialogue, we encourage recyclers in major ship recycling countries to make further improvements towards compliance with the convention by way of a fair evaluation of their development, allowing for their topographical conditions.”

Global Maritime Leaders Programme launched in Singapore

The Maritime and Port Authority of Singapore (MPA) opened its inaugural Advanced Maritime Leaders Programme (AMLP) on 16 April, in conjunction with the 10th Singapore Maritime Week (SMW) 2015. The AMLP was attended by 13 senior maritime officials from Africa, Asia, the Caribbean, Europe, Middle East and Oceania.

Organised by the MPA Academy, the training arm of MPA, and in partnership with the Singapore Management University (SMU), and the Human Capital Leadership Institute and training and consultancy agency Strategic Moves, the AMLP is the first global leadership programme that focuses on leadership development, uniquely designed for senior maritime officials and their deputies heading maritime and port administrations in their respective countries.

The maritime industry is currently facing significant opportunities and challenges arising from evolving global trade patterns, technological advancement and growing concerns on sustainability issues. Amidst this backdrop, the AMLP aims to help equip senior maritime officials with the skills and knowledge to effectively lead and transform their organisations in an increasingly complex and globalised environment.

The five-day programme includes peer-to-peer sharing and learning, panel discussions, case studies and crisis communications exercises with a focus on transformational leadership. The AMLP also offers real and practical insights, with prominent industry

leaders sharing their thoughts on leadership as well as global challenges and trends in the maritime sector.

As an important programme of SMW 2015, AMLP participants will also have the opportunity to attend other key SMW events such as Sea Asia 2015, 9th Singapore Maritime Lecture, and networking events with maritime industry leaders.

Mr Andrew Tan, Chief Executive, MPA, said, *“In today’s fast-changing and challenging environment, new leadership skills are necessary to stay ahead of the industry. We are excited and proud to introduce the AMLP, the first global maritime leadership programme of its kind that leverages on peer-to-peer learning to enhance the leadership skills of senior maritime leaders to transform and take their organisations to the next level.”*

In addition to the AMLP, the MPA Academy also organises two other flagship programmes aimed at the maritime industry’s middle to senior management. They are the Maritime Public Leaders

Programme organised for directors in maritime and port administrations and the industry, and the port management programme aimed at port master, harbour master and middle management.

Piracy & Armed Robbery

Twenty-three days after the ReCAAP ISC Piracy Conference and just four days before the ASF AGM, the ICC International Maritime Bureau (IMB)’s piracy reporting centre in Kuala Lumpur reported that six fishing boats carrying about thirty pirates closed in on a tanker enroute from Singapore to Labuan.

The pirates boarded the ship about 61 nautical miles Northwest of Tanjung Sirik Lighthouse. The pirates then proceeded to hijack

the ship, taking her to a point about 104 nautical miles Northeast of Pulau Natuna Besar, Indonesia, where the oil cargo was transferred onto another ship. After damaging the ship’s equipment the pirates escaped at 02:30 local time. Fortunately, none of the crew were injured and the tanker was able to proceed to a safe port.

According to the IMB, on average a small coastal tanker is hijacked by pirates in South East Asia every two weeks. Presently South East Asia accounts for 55% of the world’s 54 piracy and armed robbery incidents since the start of 2015. After a steady drop in global piracy over the last few years, attacks rose 10% globally in the first quarter of 2015 on the same period of 2014.

Addressing the piracy threat in the region and the disturbing increase in the number of attacks, the ASF in particular noted with concern the increasing number of reports of fuel siphoning in Asian waters. ASF nonetheless expressed concern that some reports may have unduly overstated the severity of incidents in Asian waters.

The ASF is very appreciative of the good work done by regional states and intergovernmental bodies such as ReCAAP ISC in countering the threat of maritime crime in the region. In this respect, the ASF appreciates that timely and accurate reports are very helpful for the industry.

“The ASF recognises the commendable efforts of the ReCAAP ISC, and is comforted that Interpol is now integrated into the regional anti-piracy team. However, we are still concerned over the number of piracy and armed robbery incidents. In this regard, we urge states to do much more to address incidents that are occurring in their territorial waters,” said Mr Patrick Phoon, Chairman of the Safe Navigation & Environment Committee. (TT) ■■



Latest EU policy and regulation news

Migration at sea

The tragic loss of at least 800 lives in an accident that took place on 17-18 April, when a boat carrying migrants sank in the Mediterranean, triggered a series of events at European Union (EU) level. On 23 April, at an extraordinary summit of heads of state and government, EU leaders decided to triple the resources of Frontex's Operation Triton to match those of the now-defunct Italian Operation Mare Nostrum and considered the possibility of launching a naval operation to seek and destroy the boats used by smugglers in order to interrupt their business model.

On 13 May, the European Commission presented its Agenda on Migration, a holistic strategy document seeking to address the migrant crisis. It foresees action at EU level as well as in the countries of origin of the migrants. More importantly it echoes the EU leaders' decision to increase the assets and financial resources of Operation Triton, allowing it to conduct more search and rescue operations, while asking the High Representative for Foreign and Defence Policy, Federica Mogherini, to present various options with regard to an EU naval operation to destroy smugglers' boats.

A few days later, the EU foreign and defence ministers agreed to launch Operation EU NAVFOR Med. Its mandate and scope, however, remain unclear as much will depend on whether this new naval mission will be given a UN Security Council mandate to intervene in Libya's territorial waters and whether Libyan authorities will be willing to co-operate. To this day, officials in Libya have rejected the idea of EU intervention in Libyan territorial waters.

Review of EU White Paper on Transport

In March 2011, the European Commission presented its White Paper on transport,

a strategic document outlining the main characteristics of the EU transport system in 2050, setting intermediary goals and specifying measures to be taken to reach them.

The commission is currently conducting the mid-term review of the White Paper by means of a public consultation. BIMCO has contributed to the consultation and the results will be presented at a conference in Brussels, scheduled to be held on 21 September.

In the meantime, the European Parliament has undertaken an own initiative report on the mid-term review of the White Paper, with Wim van de Camp (Netherlands, EPP) appointed as rapporteur. The report is expected to be adopted by the Transport and Tourism Committee in July and in September by the Plenary.

The Transport Commissioner, Violeta Bulc, has announced that she intends to focus her services' work on a single transport mode each year. While 2015 would be dedicated to aviation and 2016 to road transport, 2017 would be the year when the commission could potentially come forward with a so-called "maritime package", the contents of which are at present unknown. That being said, the results of the White Paper mid-term review, and those of the mid-term review of the EU Maritime Transport Strategy as well as the report of the parliament, will probably serve as input to the 2017 maritime package and, to a certain extent, guide the commission's actions.

Monitoring, reporting and verification of CO2 emissions

The European Regulation (EU) 2015/757 on the monitoring, reporting and verification (MRV) of carbon dioxide emissions from maritime transport was published in

the EU Official Journal on 19 May 2015. Apart from data on CO2 emissions and distance sailed, the regulation also requires ships to report cargo-related information, in order to measure their energy efficiency.

The entry-into-force date of the EU Regulation is 1 July 2015, in preparation for the first monitoring year in 2018.

The formal implementation of the EU Regulation will now be considered through the establishment of two EU MRV subgroups within the European Sustainable Shipping Forum (ESSF): one dealing with verification and accreditation and a second one dealing with monitoring of cargo and fuel consumption. EU Member States and European/international experts from the shipping industry including BIMCO will be involved in this process towards spring 2016.

In a submission to the 68th session of the Marine Environment Protection Committee (MEPC) of the International Maritime Organization (IMO), the EU Member States and the commission stipulated that in light of the international nature of shipping, a global system is the EU's preferred option as it would be the most effective choice. It should be noted that the EU MRV Regulation has been negotiated with the development of international IMO rules in mind and that the experience with the EU MRV system can contribute to the development and implementation of a global system.

In this context, and with a view to facilitating the development of international rules within IMO, the EU will share relevant information on the implementation of the EU Regulation with the IMO and other relevant international bodies on a regular basis.



The shipping industry remains, however, concerned about the extent to which the EU MRV would genuinely be fully aligned with a global monitoring and reporting system.

Ship recycling

The shipping industry supports global efforts to improve the conditions applicable to recycling operations and has welcomed the fact that the requirements of the 2009 Hong Kong Convention (HKC) are reflected in the European Regulation on ship recycling.

The HKC sets up the necessary and ambitious framework to deliver the required sustainable level playing field in ship-recycling activities worldwide. The entry-into-force criteria reflect the balance between the interests of recycling states and environmental and social concerns.

European Member States must therefore as a matter of priority ratify the HKC and, in conjunction with the EU, strive to ensure that key recycling states and flag states follow suit.

With this purpose, the commission must ensure that the implementation of the EU Regulation provides any recycling yards with an incentive to increase their economic and environmental sustainability, representing a real opportunity to be included on the EU list of approved recycling facilities.

The commission's Directorate-General for the Environment (DG ENV) has authorised a study to be undertaken "on the feasibility of a financial instrument to facilitate safe and sound ship recycling" as required by the EU Regulation on ship recycling in order to assess the viability of establishing a mechanism (eg financial or alternative

incentives to comply and avoid reflagging) to encourage shipowners to recycle their ships in facilities on the EU list. The shipping industry is concerned about the complex and legally challenging process of establishing such a financial mechanism.

Status of seafarers under EU social directives

Following the adoption of the Council's general approach on the commission's proposal to repeal the existing derogations for shipping from four EU social directives in December last year, discussions took place in the Employment Committee of the European Parliament. The rapporteur, Morin-Chartier (France, EPP), issued her draft report end December, largely respecting the joint European Community Shipowners' Associations (ECSA) and European Transport Workers' Federation (ETF) agreement as reflected in the Council's general approach.

Following discussions of the rapporteur's draft report in January, the Employment Committee adopted a position in April. As with the Council, this position was largely based on the joint ECSA/ETF agreement.

In early May, the commission, the parliament and the Council held a triologue meeting to secure a compromise text, which will now be formally approved by the European Parliament's plenary session and the Council of Ministers. This adoption should be a formality. The compromise text is fully in line with the expectations and joint agreement of ECSA and ETF.

Once the agreed text enters into force, shipping companies will be bound by the rules laid down in the EU directives on information and consultation (Directive 2002/14/EC), European Works' Councils (Direc-

tive 2009/38/EC), collective redundancies (Directive 98/59/EC) and transfer of undertakings (Directive 2001/23/EC).

Cyber-security

At the EU level, discussions are ongoing regarding the Network and Information Security Directive (NIS Directive), which deals with cyber-security and which includes maritime carriers in its scope of application. Given developments at international level on maritime cyber-security and the fact that the rules in the NIS Directive are not fit for the maritime sector (hence potentially will have a serious negative impact on shipowners in terms of administrative burden, costs, liability and implementation), the EU shipping industry is pleading for its exclusion. Discussions are still ongoing.

Ports regulation

The parliament has resumed its work on the commission's proposal for a regulation on market access to port services and financial transparency of ports. The aim is to make significant progress on the file in 2015 in order to have legislation adopted as soon as possible.

While there is overall support for a framework at EU level that ensures financial transparency in ports, the rapporteur on the proposal is keen to delete the chapter with rules on market access to port services. There seems to be considerable support for this approach. ■

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



US ballast water situation complicated for shipping

The development in the US on BW is impacting shipping around the world. The main concern right now is the lack of US type approved systems. In the perfect world we would only have one global requirement, but in practice we are heading towards a system including the US BW rules and the International Maritime Organization (IMO) Ballast Water Management (BWM) Convention being quite similar but with important differences on type approved equipment. In general, US type approved equipment will fulfil the convention requirements but not the other way around. For many companies operating all over the world, a US type approved system is going to be their first choice. It is therefore crucial that this equipment is available in good time before the convention is ratified and implemented.

It is therefore with some concern BIMCO has been observing the delay in getting type approved equipment ready in the US, especially now that the ratification and implementation of the convention is getting closer.

BIMCO is told that at least nine systems are in queue and have begun testing, although neither the United States Coast Guard (USCG) nor the independent laboratories doing the testing are authorised to provide us with information about where these systems are in the testing process. With the inability to assess the stage at which these systems are in the testing process, it is impossible to predict when the first US type approval(s) would be issued, although the USCG is “hopeful” that the first ones will be issued in 2015.

It is important to recall that the USCG is not involved in the testing of these systems and will not be involved until such time as a completed test package is forwarded to them by the independent laboratories and the system manufacturer, at which time they will begin the review process to ensure the testing has

been done in an acceptable manner.

In regards to the development of a UV testing protocol acceptable to the USCG, work continues by an expert group of scientists attempting to validate the MPN (Most Probable Number) efficacy measurement process. The group has targeted summer 2015 for completion of their work, although it remains troublesome that the scientific community appears to be divided on whether this methodology can be validated in a manner acceptable to constitute an alternative measurement protocol for measuring BW water treatment system efficacy. For those who have not followed this debate, the challenge in developing an alternative measurement protocol for UV based systems is a result of the living/dead measurement protocol as defined in the convention versus the viable/non-viable delineation which has to be applied to UV systems which may render organisms “non-viable” even though they are “living”.

BIMCO understands that the USCG actually now has three test packages in hand from UV system manufacturers which have completed the US testing. The USCG has not shared information on the status of their review or when we could expect a response from their review. It is not a clear-cut way forward as the USCG has not yet approved any UV testing protocol. But the results from the test will make an argument for MPN if the data shows the MPN protocol can reliably produce verifiable results.

A key element in the coming time is when US type approved equipment will be ready for sale. In a perfect world the US type approved equipment would be available long before the convention would enter into force. This viewpoint simply reflects that, for some and perhaps even many owners, a US type approved system would be the safe choice as this will ensure that the ship is able to operate all over the world, including the US.

The latest development in BW regulation in the US

The current US BW development is not only about type approved equipment but also about fundamentally changing the US rules.

S. 373, the Vessel Incidental Discharge Act, was approved by the Senate Commerce Committee February 2015 on a strong bipartisan vote. Senator Boxer, a long-time opponent of this type of legislation, is no longer on the Committee; however, she would be expected to weigh in opposing this bill when it is scheduled for a floor vote sometime this year.

The bill would remove discharges incidental to the operation of commercial ships, including BW (save the usual exceptions including garbage, incinerator ash, oil/hazardous substances and sewage, which is regulated elsewhere in USCG regulations) from the current US Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System/Vessel General Permit (NPDES/VGP) programme and would mandate the creation of regulations relating to these discharges. As proposed, USCG would be the lead agency in promulgating these regulations but would coordinate these regulatory initiatives “in consultation” with EPA. For some, believing that certain elements of environmental regulations should be vested solely with EPA, this may be a potential problem but one which can arguably be solved with precise drafting to assure that ship-specific requirements are promulgated by USCG and only those requirements relating to water-quality standards and effluent limitations are vested with EPA.

The initial BW performance standard to be implemented is the convention standard contained in regulation D-2 of the convention which is defined as “best available technology economically achievable” at this point in time. Provisions are also included which would allow a state proposing more stringent standards to petition the USCG for review

of feasibility/achievability of the more stringent standard, and if the USCG agreed, the more stringent standard would supersede the less stringent national standard in place at the time. In addition, the legislation would require the USCG to issue a more stringent standard (100 times IMO) no later than 1 January 2022 if a feasibility review conducted by 1 January 2020 indicates that this more stringent standard is achievable. If the feasibility study indicates the ability of BW treatment systems to meet a performance standard higher than the initial (IMO) standard, but not capable of meeting the 100 times IMO standard, then the performance standard would be revised to reflect the capabilities of systems at that point in time. In the long term, the language in the legislation ties establishment of new performance standards to the capability of BW treatment technologies at the time feasibility reviews are conducted, eg best available technology. Criteria to be used in the feasibility review include improvements in the scientific understandings of invasion biology and ecology; improvements in treatment technology; capability of technologies to achieve a proposed more stringent performance standard; effectiveness and reliability of these technologies; compatibility of these technologies with the design and operation of ships by class, type and size; commercial availability of these technologies; safety; improvements in the detection, quantification and assessment protocols; and cost-effectiveness (comparison of cost of retaining current performance standard versus the cost of implementing a more stringent standard).

In regards to any future changes to the performance standards, an accelerated implementation schedule would be adopted which would provide at least 24 months' advance notice before the new implementation date takes effect. Although this text may provide some concern to the industry, it should be noted that the legislation contains adequate grandfathering text such that a ship on which a compliant (at the time of installation) BW treatment system is in operation, the ship may continue to use that system, regardless of future changes to the performance standards, until the expiration of the service life of the system.

The legislation also contains provisions of the issuance of compliance date extensions similar to the process currently in place as well as a US type approval ("certification") process also similar to the programme currently in place. The legislation contains two exceptions to the US type approval provisions which address (1) systems operating under the USCG Shipboard Technology Evaluation Program (STEP) and (2) systems which have been

type approved by other nations if the certification "demonstrates performance and safety of the treatment technology equivalent to" a system which has received a US type approval. These provisions arguably mirror the current Alternative Management System (AMS) programme but do not limit use of such systems to the current five-year period associated with AMS installations.

Consistent with existing practices, the legislation contains a number of situations where the performance standards do not apply, including operations within a geographically limited area, uptake/discharge exclusively within one captain of the port (COTP) zone, continuous ballasting using a flow-through system, use of shore-based drinking water as BW, use of an alternative compliance programme and ships which carry permanent BW in sealed tanks.

Regarding pre-emption of state requirements by federal requirements, hard pre-emption language is included in the bill in Section 10 ("Effect on State Authority") which prevents states from imposing additional specific requirements after the date of enactment. There is, however, a savings clause in Section 10(b) which recognises the legality of more stringent state requirements which are in effect at the date of enactment providing the USCG and EPA agree that these requirements are achievable, the technology is commercially available and the requirements "are consistent with obligations" under international law.

Although at first read, this may seem troublesome, it is believed the safety net of requiring USCG and EPA sign-off on any existing state provisions provides the necessary dose of reality to states which may choose to continue to live in the ideal world without regard for the realities of ship operations and practical limitations on treatment technologies.

US initiatives on cyber-security

Various agencies within the US government, including the USCG and sister agencies within the Department of Homeland Security are becoming quite active in providing guidance to private entities on cyber-security. As noted in an earlier BIMCO Bulletin, the USCG held a public meeting in mid-January seeking public comments on what elements should form the basis of guidance on maritime cyber-security standards. The public comment period for the USCG's "Guidance on Maritime Cyber-security Standards" was extended and ended on 15 April 2015. The Commandant of the USCG is expected to release the USCG's cyber-security strategy in June, though this has not been published.

Noting that most are in the infancy stages of tackling the cyber-security threat as it relates to the maritime industry, the Chamber of Shipping of America (CSA), the International Chamber of Shipping (ICS) and BIMCO are working together on international approaches to dealing with this problem including best management practices.

Liquefied natural gas (LNG) as fuel – new policy letters

In early 2014, the USCG published two draft policy letters relating to (1) LNG fuel transfer operations including training and (2) guidance and existing regulations applicable to ships and terminals conducting LNG fuel transfer operations. It should be noted that, but for the regulatory requirements references, the contents of these policy letters are recommendatory in nature, ie voluntary guidelines, which may be used by entities engaged in LNG fuel transfer operations. It is also notable that these guidelines do NOT apply to ships regulated as LNG carriers using boil-off as fuel.

Since early 2014, IMO has done much work on finalising international guidelines relating to LNG fuelling operations, and the USCG notes in this document that these guidelines attempt to align with what is expected to be the final IMO guidelines relating to this subject.

In review of the above-referenced Federal Register document, much discussion is provided relative to how the USCG responded to comments received and in most cases integrated appropriate text reflecting these comments into these final guidelines.

The USCG has now finalised the policy letters and published them as Policy Letter 01-15 and Policy Letter 02-15 respectively. Copies of the policy letters are available at <http://regulations.gov> and typing the docket number USCG-2013-1084 in the search box. Click on "open docket folder" and you will be provided with links to both documents via the first link in the "supporting documents" section. Both policy letters should be fully integrated into any planning by both ships and waterfront facilities which are now conducting or intend to conduct LNG fuelling operations in US waters. (MLU) ■■

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

Pirates steal cargo – transit loss?

Trafigura Beheer BV v Navigazione Montanari SpA (The “Valle di Cordoba”) – Court of Appeal (Longmore, Ryder and Briggs LJ) [2015] EWCA Civ 91 – 18 February 2015

Charterparty – In-transit loss – Vessel carrying cargo of oil from Abidjan to Lagos – Vessel seized by pirates – Pirates transferring cargo from vessel – Whether transferred cargo constituted “in-transit loss” – Whether owners strictly liable for lost cargo

Readers are referred to the summary of the High Court judgement, which appeared in BIMCO Bulletin 3/14 in which the Court held that the theft of the cargo did not amount to transit loss. The charterers appealed the decision but the Court of Appeal agreed with the decision of the Court below and said, inter alia:

Held (Briggs LJ dubitante), that the ITL clause only applied to shortage claims arising from a normal voyage. The fact that “in transit loss” was defined for the purposes of the clause as the difference between the volumes after loading and before unloading supported the conclusion that the clause was looking only to a short delivery loss of a kind encountered in a normal voyage. The result of the charterers’ argument was to make the owners liable for losses to a greater extent even than that of a common carrier since the common carrier was always excused if the loss was caused by the Queen’s enemies. That could hardly have been the intention of the parties. Accordingly, the words “in transit loss” connoted loss “incidental to the carriage of the cargo”. It was loss of a kind encountered on a normal voyage.

The court held unanimously that even if the charterers were right about the construction of the ITL clause, clause 46 would apply the Hague-Visby Rules, which would exempt the owners from liability under article IV rules 2(c), 2(f) or 2(q) (*The Olympic Brilliance* [1982] 2 Lloyd’s Rep 205, considered). ■

Editor’s Note: The above is a summary of a London judgment which appeared in Lloyd’s Maritime Law Newsletter No. 920 of 6 March 2015, and which is reproduced by kind permission of the publishers, Informa Law.



Demurrage claim – whether time barred

Kassiopi Maritime Co Ltd v FAL Shipping Co Ltd (The “Adventure”) – QBD (Comm Ct) (Hamblen J) [2015] EWHC 318 (Comm) – 19 February 2015

Demurrage – Time bar – Charterparty providing that demurrage claim should be presented with all supporting documentation within 90 days of the completion of discharge – Whether claim time-barred

The vessel *Adventure* was chartered on an amended BPVOY4 form dated 15 June 2011. The owners brought a claim for demurrage in the amount of US\$364,847.78 as a result of delays at both the load port, Sitra, and the discharge port, Port Sudan.

A formal demurrage claim was submitted by email on 5 August 2011, which attached a number of documents.

The charterers said that the claim was time-barred because the demurrage claim had not attached all of the necessary documents and the 90-day period to submit those documents had elapsed.

The charterparty provided:

“6. Notice of Readiness (NOR)

...
6.3.3 free pratique has been granted or is granted within six (6) hours of the Master tendering NOR. If free pratique is not granted within six (6) hours of the Master tendering NOR, through no fault of Owners, Agents, or those on board the Vessel, the Master shall issue a protest in writing (NOP) to the port authority and the facility at the port (Terminal) failing which lay time or, if the Vessel is on demurrage, demurrage shall only commence when free pratique has been granted;
...

19. PART A. LOADING AND DISCHARGE OF CARGO

...

19.7 No claim by Owners in respect of additional time used in the cargo operations carried out under this Clause 19 shall be considered by Charterers unless it is accompanied by the following supporting documentation:

19.7.1 the Vessel’s Pumping Log signed by a senior officer of the Vessel and a Terminal representative showing at hourly intervals the pressure maintained at the Vessel’s manifold throughout the cargo operations; and

19.7.2 copies of all NOPs issued, or received, by the Master in connection with the cargo operations; and

19.7.3 copies of all other documentation maintained by those on board the Vessel or by the Terminal in connection with the cargo operations
...

20. Claims Time Bar

20.1 Charterers shall be discharged and released from all liability in respect of any claim for demurrage, deviation or detention which Owners may have under this Charter unless a claim in writing has been presented to Charterers, together with all supporting documentation substantiating each and every constituent part of the claim, within ninety (90) days of the completion of discharge of the cargo carried hereunder.”

The dispute was referred to arbitration. The tribunal found that the documents presented by the owners with the 5 August 2011 email comprised:

- (a) An invoice for US\$364,847.78 dated 5 August 2011;
- (b) A laytime/demurrage calculation for Sitra and Port Sudan;
- (c) A notice of readiness for Sitra;
- (d) A statement of facts for Sitra;
- (e) Four Letters of Protest for Sitra;
- (f) A notice of readiness for Port Sudan;
- (g) A pumping record for Port Sudan;
- (h) A statement of facts for Port Sudan
- (i) Four Letters of Protest for Port Sudan;
- (j) An Empty Tank Certificate for Port Sudan.

The tribunal further found that a number of the Letters of Protest at Sitra referred to delays or stoppages recorded in the vessel’s port log and timesheets. The grant of free pratique was recorded in the statement of facts for Sitra but not that for Port Sudan.

Information as to the granting of free pratique at Port Sudan was not provided to the charterers until the owners produced a witness statement in February 2014 exhibiting an email sent by the master on 22 July 2011 indicating that free pratique had been granted at Port Sudan by VHF.

The tribunal held that the “documentation” contemplated by clause 19.7.3 included all such documentation as the owners would be required to disclose in an arbitration to determine whether time counted during loading or discharging operations. Such documents would have included the port log and timesheets, which would have contained relevant entries as the Letters of Protest had referred to them. They would also have included an email sent by the master on 22 July 2011 which referred to the granting of free pratique at Port Sudan. Since those documents had not been attached to the 5 August 2011 email the owners had not complied with the requirement in clause 19.7, with the consequence that no claim in respect of additional time used in “cargo operations” carried out under clause 19 could be considered by the charterers or by the tribunal. That did not conclude matters because there were other delays at Sitra and Port Sudan, which did not arise in the course of cargo operations and which were therefore not covered by clause 19.7.

In relation to clause 20.1 the tribunal held that the owners had failed to present “all supporting documentation” within the 90-day period, in particular, the port log and timesheets, and the email from the master sent on 22 July 2011. Accordingly, the charterers were “discharged and released from all liability” in respect of the demurrage claim (see *The Eagle Valencia* [2010] 2 Lloyd’s Rep 257).

As a result, the claim for demurrage was held to be partially barred by the failure to comply with clause 19.7 and wholly barred by the failure to comply with clause 20.1.

The owners appealed. As to clause 19.7.3, they submitted: (1) that the tribunal erred in stating that the owners had to attach all documents that would be required to be disclosed in an arbitration; and (2) that “one-off” documents, which were generated by the vessel in connection with the cargo operations, did not fall within the scope of “documentation maintained by those on board the Vessel ... in connection with the cargo operations ...”.

As to clause 20.1, the owners submitted that the clause only required presentation of “essential” supporting documentation, which generally meant the notice of readiness and statement of facts. Such documents had been presented with the 5 August 2011 email. The port log and timesheet were not required because all the information required for the purpose of the demurrage claim was set out in the signed statement of facts. The documents provided substantiated each and every constituent part of the claim

and there was no need to provide additional documentation which would simply provide further substantiation.

Held, that the court would accept the owners’ submission that compliance with clause 19.7.3 did not require the owners to provide copies of all documents which they would be required to disclose in an arbitration reference. The obligation of disclosure was likely to go far wider than merely “supporting documentation” and required a search which was considerably more rigorous than that contemplated by clause 19.7.3. Further, what disclosure required might vary as between different arbitration rules and as between arbitration and court. It might also vary between different arbitration proceedings conducted under the same rules. The clause could not have been intended to impose such a far-reaching and potentially unworkable obligation on the owners.

The documentation contemplated by clause 19.7.3 was contemporaneous records kept by the vessel relating to the cargo operation. The pumping log was the most obvious example but some vessels might keep similar but different records. As a matter of general guidance (rather than as a definition) the documents to be provided under the clause were those that were required to be kept or compiled on an ongoing, rather than a “one-off” basis. Contemporaneous records kept by the vessel relating to the cargo operation would often be kept on such an ongoing basis, but not necessarily so. Whether the port logs and timesheets in the present case were such records would be a matter for the tribunal to determine. If the court had ruled in the owners’ favour in relation to clause 20.1 it would accordingly have remitted the issue to the tribunal.

As to clause 20.1, the documents that were required to be presented were documents which objectively the charterers would or could have appreciated substantiated each and every part of the claim and which meant that they were thereby put in possession of the factual material which they required in order to satisfy themselves that the claim was well-founded, eg summary and detailed

demurrage reports, notices of readiness, port logs, statements of facts, master’s letters of protest, discharging logs, timesheets and pumping logs (*The Eagle Valencia* and *The Abqaiq* [2012] 1 Lloyd’s Rep 18 considered).

The owners’ submission that the port log and the timesheet were not required in the present case as all the information required for the purpose of the demurrage claim was set

out in the signed statement of facts would be rejected. Under clause 20.1 the owners were not merely to provide “supporting documentation” but “all” such documentation. Where the owners had available documentation from the load and discharge ports such as port logs and timesheets those were, as the tribunal found, “relevant” to the claim made.

The Letters of Protest relied upon referred to delays and stoppages recorded in the port log/timesheets. As such they were clearly supporting documentation for the claim made. In any event they were primary documents containing factual material which should be made available to the charterers so that they might satisfy themselves that the claim was well founded, consistent with the purpose of the clause.

In most cases secondary documentation such as the master’s email of 22 July 2011 would not be so required. However, in the present case the time when free pratique was granted was important to the commencement and proper calculation of laytime and there was no record in the documentation provided of when it was granted at Port Sudan (in contrast to Sitra where it was recorded in the statement of facts). In such circumstances it probably was to be regarded as a supporting document, as the owners so treated it and the tribunal so found.

It followed that the claim failed pursuant to clause 20.1 regardless of whether or not the claim was partially barred under clause 19.7.

The appeal would be dismissed.

Neil Henderson (Mills & Co) for the owners; Michael Davey QC (Bugden & Co) for the charterers. ||

Editor’s Note: The above is yet another reminder that time bar clauses are taken at face value. Readers are recommended to have a look at the “worth knowing” article entitled “Time bar clauses”, which members can find in BIMCO’s website here: https://www.bimco.org/Chartering/Voyage_Chartering/Clauses/06_Time_bar_clauses/01_Time_bar_clause.aspx.

The above is a summary of a London judgment which appeared in Lloyd’s Maritime Law Newsletter No. 921 of 20 March 2015, and which is reproduced by kind permission of the publishers, Informa Law.

Part cargo – readiness

Demurrage – Notice of readiness – Whether valid – Whether vessel legally ready to discharge part cargo – Whether laytime suspended due to “fault” on part of owners – Point of time at which laytime resumed

By a charterparty on an amended Gencon 94 form dated 14 May the claimant owners chartered the vessel to the respondent charterers for a voyage from India to Djibouti with a part cargo of 13,200 mt of petcoke in bulk.

The intended cargo was to be loaded in holds Nos 1 and 4. A completion wheat cargo was loaded in holds Nos 2, 3 and 5. Both cargoes were to be discharged in Djibouti. The petcoke cargo was loaded first but the receivers of that cargo did not negotiate a provision that it be discharged first, whereas the wheat charter contained a “last in, first out” provision.

The vessel arrived at Djibouti and anchored at 06.00 on 29 June, tendering notice of readiness in respect of the petcoke cargo on arrival (the first notice). The tribunal was not told specifically whether the vessel also tendered notice in respect of the wheat cargo at the same time, although there was an email saying “vsl tendered general nor for both cgoes”. The petcoke berth was occupied on the vessel’s arrival, as was the wheat berth. The charter was a berth charter but with provisions allowing notice of readiness to be tendered on arrival if the intended berth was occupied on arrival.

On 1 July the vessel shifted to the petcoke berth, berthing at 10.48, but, on instructions, the master kept the hatches closed and refused to allow discharge. At 11.36 on 2 July the vessel shifted back to the anchorage, anchoring at 13.45 “AS OWN-

ERS DECIDED TO DISCHARGE WHEAT CARGO FIRST”. From then until 14.45 on 16 July the vessel remained at the anchorage waiting for the wheat berth to become free. She berthed at the wheat berth at 16.48 on 16 July. According to the statement of facts discharge of the wheat cargo was completed at 08.40 on 4 August, but according to a further notice of readiness (the second notice) discharge of the wheat cargo was not completed until 10.45, which was also the time the second notice was tendered according to the master’s remarks on the statement of facts. On completion of discharge of the wheat cargo the vessel was left in the berth where that cargo was discharged for several days, the original intention being that she should shift directly back to the petcoke berth. In the event, that was not possible and she shifted to the anchorage on 9 August to wait for the petcoke berth to become available. The vessel left the anchorage at 19.45 on 10 August, berthing at 21.45 at the petcoke berth and completing discharge on 18 October.

The issues were:

- (1) whether laytime at the discharge port was triggered by the first notice of readiness but then suspended (as the charterers contended), or whether laytime was triggered by the second notice of readiness after the wheat cargo had been discharged (as the owners contended);
- (2) if laytime was triggered by the first

notice of readiness but then suspended, whether laytime resumed following completion of discharging the wheat cargo (as the owners contended) or when the vessel returned to the petcoke berth (as the charterers contended).

Held, that as to the validity of the first notice of readiness, the tribunal was not aware of any principle of law that required a master to tender notices of readiness for all accessible cargo on arrival at a port where such cargoes were to be discharged, nor had the parties suggested that there was such a rule. It was a matter for owners to decide what notices should be tendered taking into account what contractual arrangements had been entered into with the owners of the various cargoes.

In the present case, the vessel having reached its specified destination, the master did tender notice of arrival, albeit in so doing, he was in breach of the contractual arrangements between the owners and the charterers, under whose charter the wheat cargo was being carried.

What exactly happened when the vessel arrived was far from clear. There was an email dated 29 June saying the port authorities wanted the wheat cargo discharged first, but on 1 July they ordered the vessel to berth at the petcoke berth, which by then had become available. Presumably, in ordering the vessel to the petcoke berth, the port authorities had changed their minds or possibly responded to pres-

sure from the petcoke receivers. The owners said that that was against their wishes and they issued a protest and instructed the master not to discharge the petcoke cargo. It would have been helpful if there had been a witness statement from the agent explaining just what was going on in the first few days after the vessel's arrival. As discharge had not commenced, the vessel was shifted back to the anchorage on 2 July to await the wheat berth becoming available. That was presumably because it was clear that the vessel was not going to commence discharge of the petcoke cargo, but it might have been influenced by pressure from the wheat cargo receivers. There were extensive exchanges in an attempt to find a solution to allow the discharge of the petcoke cargo first, but they came to nothing.

The tribunal reminded itself that more than one notice was frequently tendered as per the advice of Donaldson J in *The Timna* [1970] 2 Lloyd's Rep 409 at page 411, when he advised masters to keep on tendering notices on the basis that one might be valid and found the basis of a claim for demurrage. However the charterers were right in that there could only be one valid notice of readiness and that any tendered after that were irrelevant.

The charterers relied on *The Helle Skou* [1976] 2 Lloyd's Rep 205. That case was authority for the proposition that once accepted, a notice of readiness could not be rejected by either side, whatever the accuracy of the notice.

The owners had referred to a statement by Roskill LJ in *The Tres Flores* [1973] 2 Lloyd's Rep 247 at page 252 col 1:

"A ship in order to be ready and thus be entitled to give valid notice of readiness must be ready to obey the charterer's order whenever they are given."

The owners said that that requirement was not satisfied because the vessel was obliged to discharge the wheat cargo first under the terms of that charter. The tribunal disagreed. The readiness to which Roskill LJ (and Lord Denning MR) referred was the physical and legal readiness of the vessel. There was no dispute about the physical readiness of the vessel. As to her legal readiness, when the first notice was tendered on arrival on 29 June, the ship's papers were in

order, there was no infection and no permits or consents that were not in place, were required and there was therefore no legal impediment to the commencement of discharge. The fact that if they had permitted discharge, the owners would have been in breach of their charter relating to the wheat cargo, did not mean that the vessel was not legally ready.

It followed that the commencement of laytime would have been triggered by the first notice. That notice was tendered at 06.00 but the charter required notice to be tendered in office hours; therefore it was deemed tendered at 08.00 so that laytime commenced at 20.00 on 29 June (*The Petr Schmidt* [1997] 1 Lloyd's Rep 284; (CA) [1998] 2 Lloyd's Rep 1).

Time spent shifting was excluded under the charter and the charterers said that laytime stopped when the vessel began shifting from the anchorage at 08.15 on 1 July and did not resume when the vessel berthed because the master refused to open the hatches and commence discharge. The tribunal was satisfied that that refusal amounted to "fault" on the part of the owners, so that laytime was suspended irrespective of the position of the port authorities.

The question was: when did that period of fault come to an end? Was it with completion of discharge of the wheat cargo, as the owners contended or was it when the vessel returned to the petcoke berth, as the charterers' claimed? In other words, which of the parties was to be responsible for the consequential delay after completion of discharge of the wheat cargo before the petcoke berth became once more available?

The answer to that question depended on the legal nature of "fault". Paragraph 4.20 of the 6th Edition of Schofield, *Laytime and Demurrage*, stated:

"Whether the delay occurs before or after laytime has expired, in both cases the defence of 'fault' of the owners appears to be a simple defence rather than a cross-claim by the charterers of an equal amount giving rise to a defence of circuity of action. The defence is an example of the more general principle that a plaintiff cannot claim damages if the claim is based on his own fault or default."

The authority cited for the proposition that it was a simple defence was *The Union Amsterdam* [1982] 2 Lloyd's Rep 432 at page 435 per Parker J.

The delay and the cause of the delay, ie the fault, had to be contemporaneous. Therefore like an off-hire clause in a time charter, where the period of off-hire came to an end when the particular off-hire causes ceased, so also in a voyage charter, when the fault ceased, time, whether laytime or demurrage, resumed. For laytime or demurrage to run, the vessel had to be continuously available for cargo operations (*The Stolt Spur* [2002] 1 Lloyd's Rep 786). It followed that, in the absence of some other clause excluding time, the loss of time was confined to the period when she was not so available. The tribunal was satisfied that the vessel was at the immediate disposition of the charterers after discharging the wheat cargo, even if she did remain at the wheat berth.

The second notice of readiness, although not valid in triggering laytime, was nevertheless evidence of when discharge of the wheat cargo finished and therefore when the vessel was once more available to the charterers. There was a slight difference between the statement of facts and the second notice of readiness as to the actual time discharge of the wheat cargo finished, and if it mattered the tribunal would accept the later time.

Accordingly, the owners were entitled to the demurrage claimed in respect of the consequential delay following completion of the discharge of the wheat cargo.

LMLN Editor's note: an application by the charterers for leave to appeal to the High Court under section 69 of the Arbitration Act 1996 was refused. ■■

Editor's Note: The above is a summary of a London Arbitration Award (No. 20/15) which appeared in Lloyd's Maritime Law Newsletter No. 915 of 29 December 2014 and which is reproduced by the kind permission of the publishers, Informa Law.

Asbatankvoy – cargo contamination claim

Panel majority dismisses cargo contamination claim of \$963,714.00 awards owner legal fees of \$840,000

In the Matter of the Arbitration

Invista S.a.r.l., as Charterer

Stolt Tankers B.V., as Owner of the
M/V STOLT PERSEVERANCE
under a Contract of Affreightment

dated December 2, 2011

Before: Jack Berg
Richard M. Ziccardi
David W. Martowski, Chair-
man

Appearances:

Invista S.a.r.l.
Cichanowicz Callan Keane
Vengrow & Textor, LLP

by: James M. Textor, Esq.,
and Jessica A DeVivo, Esq.

Stolt Tankers B.V.
Freehill Hogan Mahar LLP

by: Don P. Murnane, Jr., Esq.,
Manuel A Molina, Esq., Eric
J. Matheson, Esq., and Dan-
iel Carr, Esq. Associate Gen-
eral Counsel

between
and

Introduction

Invista S.a.r.l., as Charterer (Invista) sought to recover \$963,714.00 from Stolt Tankers B.V., as Owner (Stolt) for the alleged contamination of Hexamethylenediamine (HMO) carried on the *Stolt Perseverance* from Houston, Texas to Ulsan, Korea while performing under a Contract of Affreightment (based on the ASBATANKVOY form) dated December 2, 2011.

Stolt denied any liability and asserted a counterclaim for demurrage of \$85,583.33. Both parties seek interest, attorneys' fees and costs. Both parties are major participants in international trade.

Hexamethylenediamine (HMO) is a sensitive intermediate chemical used primarily in the manufacture of nylon and polyester. HMO 98% concentration is sometimes diluted at customers' request to HMO 90% by on board blending with DI water as the cargo is loaded at Odffjell Terminals Houston (OTH).

Both HMO 98% and 90% are sensitive to heat and cold and, as an MSDS corrosive, freeze solid "as an ice block" at normal room temperatures. Once solidified, HMO 98% will not thaw back into a liquid form until its temperature reaches about 40°C (104° F), which is relevant to this dispute.

Because of HMO's sensitivity, Invista

employed Chem-Coast, Inc. (Chem-Coast) as a liquid chemical cargo surveyor and consultant to prepare extensive HMO pre-loading vessel procedures and perform surveying supervision and vessel readiness auditing prior to and during loading of HMD at OTH. Chem-Coast also provides training and written standardized procedures for Invista and operates a full service laboratory near Houston. More specifically, Chem-Coast has prepared a 15-page detailed HMD Key Handling Requirements work instructions for its surveyors; issued in this case a detailed 7-page itemised list of HMD pre-loading written procedures and diagrams to the Vessel; inspected, tested and recorded the Vessel's pre-loading compliance with the instructions; and provided the Vessel with three pages of strict instructions for monitoring and handling HMD during the voyage.

Background

The underlying facts are generally undisputed. The HMO 98% in issue was manufactured at Invista's Orange, Texas plant and transported by barge to OTH, stored in Shore Tank 6-73 and thereafter loaded on board the vessel on December 24-25, 2011 into Tanks 7S and 8CF scheduled for delivery to Rhodia at Ulsan, Korea.

The Vessel arrived at Ulsan, Korea on February 12, 2012 where Tanks 7S and 8CF were tested and found on-specification with

respect to all contractually agreed specifications. However, with respect to the HMO's UVT value, Tank 8CF tank was determined to have a UVT of 90 while Tank 7S tank had a UVT of 80, which was considered to be too low by the receiver. Rhodia, the receiver and buyer, refused to accept the HMO in Tank 7S solely on the basis of the UVT reading. (There was no specification for UVT in the sales contract)

While the vessel was thereafter travelling to Singapore, Invista negotiated the on-carriage of the rejected product to Rotterdam. Samples of product were taken at Singapore and additional samples including coffee dam water were taken at Rotterdam for testing. The rejected HMO was ultimately returned to the United States on the vessel and distilled at Invista's Victoria plant.

Stolt's in-house counsel communicated its position to Invista in the early stages of the dispute that the cargo was off-spec as a result of either a pre-existing condition or as a matter of inherent vice.

Invista seeks to recover Stolt's freight, OTH storage and railroad charges, surveying costs, customs brokerage and its plant reclamation charges. Stolt claims demurrage incurred during these events.

Proceedings

The ASBATANKVOY form provided for arbitration of disputes "in New York under US law using Society of Maritime Arbitrators, Inc. (SMA) rules, fourth edition 2003". In due course a panel was formed consisting of Jack Berg, Richard Ziccardi and Daavid Martowski (Chairman).

Eight hearings were held at which fact and expert witnesses gave testimony. In addition voluminous documentary evidence was provided.

Contentions:

There were several contentions raised by the parties. However the major dispute concerned the condition of the cargo at the time of loading.

Good Order and Condition at Loading

Invista contended that it did establish by

a preponderance of factual and expert evidence and testimony that the parcel of 90% HMO was loaded into Tank 7S in internal good order and condition at the OTH and found to be off-specification with respect to its UVT value on outturn at Ulsan, Korea, relying on testing of pre-loading, post loading and discharge cargo samples and well-established precedent that arguably supports its position.

Stolt contended that the HMO was off-specification at loading due to a pre-shipment impurity. The cargo was loaded on a particularly cold day (6-8 degrees C) for Houston and it argues that the alleged contamination was activated by thermal degradation caused by the terminal personnel's aggressive application of excessive steam thawing to the frozen blockage in the terminal's loading line.

It contends that this triggered a Vogel Reaction (hydrolysis of nitriles) in vessel Tank 7S, which, over time, reduced the UVT value after the vessel sailed from Houston. Stolt concludes that since the reaction was not complete when the post-loading samples were drawn, these samples are not representative of the condition of the cargo and therefore Invista has not established the cargo's internal good order and condition at loading.

2. Damage at Outturn

Discussion and Decision

The matter before the Panel requires a determination whether Invista's cargo contamination claim prevails over Stolt's asserted defences in the context of well-established COGSA burdens of proof.

Testimony and documentation introduced late in these proceedings have established that the HMD produced at Invista's Orange plant had a history known since 2009 of impurities that appeared in Invista's tests as "fifth little peaks" or "mystery blips" reflected in their Gas Chromatography Mass Spectrometry (GCMS). This dispute turns on the identification of these pre-shipment impurities and effect they had, if any, on the UVT value of the HMD 90% carried in Tank 7S; specifically, whether a chemical reaction known as the "Vogel

Reaction" triggered the alleged contamination days after the vessel sailed from OTH for Ulsan. Both parties have introduced expert testimony focusing on the identification and possible effect of the pre-shipment HMD "impurities which arguably supports their respective positions.

Stolt presented the testimony of Dr. Sheila Marshman, an independent expert, who holds degrees that include a PhD in Chemistry, a Master of Science in Analytical Chemistry, and a Bachelor of Science in Applied Chemistry. Dr. Marshman possesses 40 years of experience in the interpretation and analysis of Gas Chromatography Mass Spectrometry (GCMS).

Referencing the Periodic Table of the Elements, Dr. Marshman described the calculation of molecular weight and thereafter how molecular weight relates to GCMS. Molecular weight provides one of the key indicia in interpreting GCMS as it is an indication of where actual "peaks" will appear on the GC graph.

Dr. Marshman testified that HMD is comprised of 6 Carbon atoms, 2 Nitrogen atoms, and 16 Hydrogen atoms (C₆ H₁₆ N₂), and has a molecular weight of 116. The molecule is not rigid.

Utilising a report by Invista's Wyatt Allen that was produced just prior to the last hearing upon directive of the Panel, Dr. Marshman indicated that the "mystery peak" (that existed in the pre-loading sample from shore tank 6-73 and in the HMO sampled from Tank 7S after loading and which appears approximately at 15 minutes in the GC graphs in Invista Ford Exhibits 27 and 33A), can be identified by its molecular weight. Specifically, her analysis of the GC graph contained in the Wyatt Allen report (pg. 7, Invista McDonald Supplemental Ex. 18) that the peak at 168 represents a compound with a molecular weight of 168 resulted in her conclusion that the unknown impurity is the molecule Amino-decanenitrile.

In reaching this conclusion, Dr. Marshman eliminated for various reasons other peaks on the graph as possible contami-

nants, including peaks at 167, 169, 183, 195 and 209. Significantly, her analysis also rejected Mr. McDonald's testimony that the unknown impurity was a C10 diamine, explaining that a C10 diamine has 10 methylene groups and a molecular weight of 172. There is no peak at 172 on the graph referenced on page 7 of the Wyatt Allen report, which report indicates that the unknown impurity is likely an isomer with a molecular weight of at least 154. "Isomer" according to Dr. Marshman is a term applied to those molecules that are comprised of the same types and numbers of individual atoms but which are arranged in a different, non-straight chain way, also known as a branch chain molecule. Dr. Marshman testified conclusively that her analysis of the graph establishes the peak at 15 minutes cannot be a C10 diamine.

She reviewed the various GCMS graphs of the samples she determined that the unknown impurity was Aminodecanenitrile, Dr. Marshman described a well-documented chemical reaction known as the "Vogel Reaction". When Aminodecanenitrile is heated and added to water, a reaction ensues that results in a final molecule named Aminodecaneamide. To roughly summarize the chemistry, Aminodecanenitrile is mixed with and splits the water H2O molecule; the H-O group from the water then attaches to the C; the H-ion from the water then attaches to the N; the H from the OH migrates to the NH (a process known as "tautomerization"); and the stable end molecule is Aminodecaneamide. The presence of Aminodecaneamide in HMD reduces the ultraviolet transmissivity (UVT) at 277nm wavelength.

Dr. Marshman testified that the Vogel Reaction in the cargo in Tank 7S would take two to three days and will vary with heat and the amount of Aminodecanenitrile. In the present case, she opined, as the amount of Aminodecanenitrile is quite small, the reaction is going to go slower. Thus, the product of the Vogel reaction explains the reduction in UVT in the HMD in Tank 7S; but the change in UVT would not have been apparent in samples taken upon conclusion of loading at OTH.

In Dr. Marshman's expert opinion, this reaction was the most probable, "extremely probable", cause of the lowered UVT at out-turn.

The Panel Majority found her evidence persuasive.

While the issue to be decided is a close one, the majority consisting of Messrs. Ziccardi and Martowski found Dr. Marshman a highly persuasive and credible expert witness with excellent credentials. Her testimony, as to the identification of the unknown pre-shipment impurity in Invista's HMD and the Vogel Reaction with respect to the facts of this voyage, leads to a conclusion that it is more likely than not that the pre-existing impurity, Aminodecanenitrile, when heated prior to shipment, triggered the Vogel

Reaction upon contact with DI water in Tank 7S, and that this reaction was the cause of the drop in UVT which was manifested several days after sailing from Houston. In our view, Invista failed to rebut the evidence of the Vogel reaction. In so finding, we accept Stolt's legal position on the burden of proof standard.

Accordingly, the Majority concludes that Invista has not established the internal good order and condition of the HMD loaded at OTH as a product fit for the voyage intended. Upon this finding there is no need to decide the issues of the effect of Invista's verbal agreement with Rhodia on UVT specifications or whether Stolt exercised due diligence in preparing the vessel for the contemplated voyages.

We find this evidence meets the burden of proof standard and mandates a conclusion that the Vogel reaction was the "extremely probable" cause of the contamination. Invista's claim is denied. Invista does not dispute the amount of Stolt's demurrage claim and it is awarded in full. Mr. Berg's Dissent is attached as Appendix A

Fees and costs.

Under New York practice and pursuant to the clauses in the SMA Rules and the ASBATANKVOY, THE Panel can award

fees and costs to the prevailing part. The majority has carefully considered the facts and circumstances, the nature and value of the claim and counterclaim, the relative level of effort, the reasonableness of the expenditures and Stolt's level of success as the prevailing party, and concludes that it is entitled to an allowance of \$840,000 towards its attorneys' fees and costs. The parties are directed to equally share the Panel's fees and expenses set forth in Appendix 8, which forms an integral part of this Final Award.

Interest

Interest is awarded to Stolt at the prime-lending rate published by the Federal Reserve Bank from June 30, 2012 to the date of this Final Award.

Award

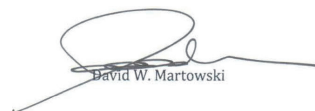
Invista's claim is denied and Stolt is hereby awarded on its claim the sum of \$929,812.67, which is calculated as follows:

Demurrage	\$ 85,583.33
Interest	4,229.34
Attorneys' Fees	840,000.00
Total due	\$ 929,812.67

If this award is not satisfied within 30 days from the date hereof, interest at the prime lending rate published by the Federal Reserve Bank will resume accruing until the Award shall be fully satisfied or reduced to judgment, whichever first occurs. Dissent by Mr. Berg

This Award is final and binding and may be made a rule of the Court in accordance with Clause 24 of the ASBATANKVOY.

Berg
(Dissenting)



David W. Martowski



Richard M. Ziccardi

New York, New York, February 25, 2015

APPENDIX A DISSENTING OPINION

The panel majority has denied Invista's cargo damage claim, concluding the HMD cargo loaded into cargo tank 2S was not in good order and condition when loaded at Houston. It is the panel majority's opinion that the depressed UVT which rendered the cargo unacceptable to the cargo receiver in Ulsan was the result of a hydrolysis of nitriles (Vogel Reaction). I don't believe the evidence supports such a conclusion.

I, therefore, disagree with the panel majority's conclusion. The panel majority opinion fairly sets forth the background material so I need not repeat much of what has already been said. My dissenting opinion now follows. The issue which is at the heart of Invista's claim and Stolt's defense is whether the cargo was loaded in good order and condition. There is no argument that the cargo did, in fact, arrive in a damaged condition in Korea and that Invista's buyer refused to accept the goods.

THE EXPERT WITNESS EVIDENCE

The evidence given by Dr. Marshman has been summarized in the Majority award and will not be repeated here. Mr. McDonald, an Invista chemist with extensive experience the chemistry and production of HMD offered expert testimony on behalf of Invista. He testified that the Vogel reaction theory asserted by Stolt fails, firstly because, Dr. Marshman incorrectly identified the benign fifth peak component as AMN, and secondly, assuming Dr. Marshman's identification was correct, the AMN would have been revealed by Invista's TVB test for nitriles, ammonia and amines.

He further stated that if a Vogel reaction had occurred it would have resulted in the production of ammonia which would have been picked up by the TVB test. The evidence is that there was no significant change in the TVB readings between loading and discharge. Mr. McDonald further testified that if the unknown component was AMN, it would have contained a nitrile molecule which would have been clearly evidenced in Invista's stringent testing program. Nitriles are contaminants which affect the downstream production stream, therefore, sensitive tests for nitriles are an important element of assuring prod-

uct quality. Mr. McDonald further stated that the HMD component that Dr. Marshman incorrectly identified as AMN, is and was routinely present in all other cargoes of HMD shipped over many years. This unidentified benign component was known by Rhodia and other buyers and acceptable by them without reservation. Lastly, Mr. McDonald pointed to Invista's extensive handling and shipping experience with 90% diluted and 98% HMD loaded to vessels, at colder than ambient temperatures, with no evidence of depressed UVT due to a Vogel reaction or other contaminations.

CONCLUSION

Quite apart from the panel majority's finding in this case, there is nothing on the record to indicate that any other chemical cargo, anywhere, was ever affected or damaged by the results of a Vogel reaction. So, if the panel majority is correct in its conclusion that the depressed UVT in the HMD cargo was caused by a Vogel reaction it would be the first of its kind ever.

It's important to note that in order for a Vogel reaction to take place there must be an extraordinary confluence of events. First, one must find the presence of a nitrile, and then there must a combination of sufficient heat and water to fuel the damaged by the results of a Vogel reaction. So, if the panel majority is correct in its conclusion that the depressed UVT in the HMD cargo was caused by a Vogel reaction it would be the first of its kind ever.

It's important to note that in order for a Vogel reaction to take place there must be an extraordinary confluence of events. First, one must find the presence of a nitrile, and then there must a combination of sufficient heat and water to fuel the reaction. Furthermore, one must then conclude that the chemical result of the Vogel reaction is so slight that it remains undetected by the sensitive and sophisticated tests of the various samples routinely taken at various stages of loading and thereafter.

Dr. Marshman concluded that the unknown fifth peak in the GCMS scan was AMN based upon her reading of the molecular weight of the trace. Invista's expert's opinion was that it was not AMN based upon the boiling point data and other characteristics

of the scan. So, the experts have differed on an extremely important point, and that is whether the fifth peak was a nitrile. Without question, it is understood in the trade that nitriles are detrimental to the production of the finished products, such as nylon, and the record reflects that the product is, therefore, tested at various stages to ensure its integrity. Invista's PRI and TVB tests are extremely sensitive and are designed to detect nitriles and ammonia in any given sample to determine if an untoward reaction has occurred in the product. The various tests of cargo samples taken at loading and the many samples taken in Korea and elsewhere along the way failed to indicate the presence of nitriles, ammonia or any other evidence to suggest that a Vogel reaction had occurred.

The nature of the fifth peak on the GCMS scan, and what it represents, goes to the heart of Stolt's position, which is that the HMD loaded to the *Stolt Perseverance* was not in good order and condition when loaded to the vessel. However, the evidence is that DuPont, as the predecessor to Invista, and thereafter

Invista itself performed thousands of other HMD liftings to Ulsan and elsewhere, shipping product showing the same GCMS fifth peak without experiencing depressed UVT results in the HMD.

In summary, I cannot accept the panel majority's conclusion that the depressed UVT of the HMD shipped on the *Stolt Perseverance* was the result of a Vogel reaction. The many sample tests and the history of Invista's many shipments over the years without incident say otherwise. There was nothing unique about the circumstances of this shipment that would support Stolt's position.



Jack Berg

New York, New York, February 25, 2015 ■■

Editor's Note: This article is submitted by Patrick v. Martin, Esq., counsel to the Society of Maritime Arbitrators



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