TANKEROperator

APRIL 2013

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- Beware West Africa
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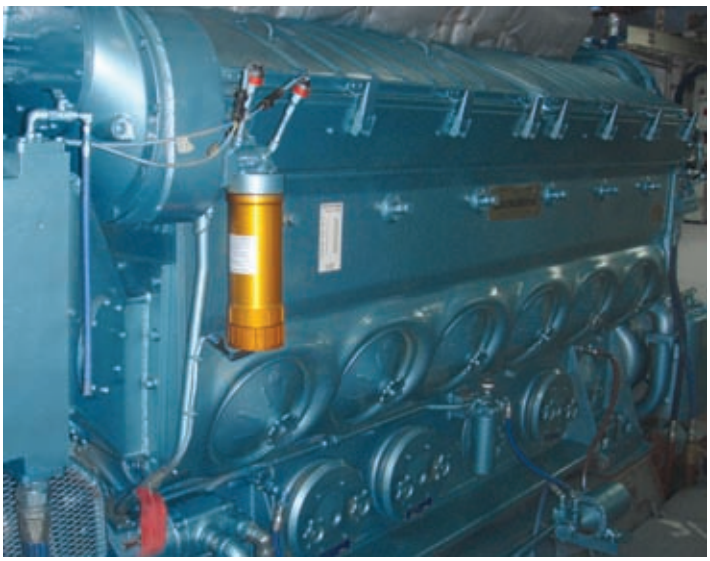

Front cover photo

On 16th February, the 107,123 dwt AET-owned Aframax 'Eagle Turin' arrived at Portugal's Lisnave for refit work for the second time, thus becoming the 100th tanker managed by the company to enter the yard. This total was achieved over a period of 15 years.

Will everybody follow Fredriksen?

Why commit $2.6 bill on newbuildings in today's uncertain world?

This is just what John Fredriksen has done through his new shipping vehicle – Frontline 2012. In the company's recent report, it was said that there could still be more to come, as fixed price contract options were also negotiated at the same time.

By the end of last year, Frontline 2012 had firmed up 16 newbuildings, but since then the number of firm contracts have shot up to 53. The new orders include crude and product tankers, LPG and drybulk carriers.

The company said that it is targeting newbuildings for delivery in 2014 and 2015. Do they know something we don't?

Perhaps now is the time to reserve your slot at shipyards, as very competitive prices can be negotiated with a shipbuilding industry approaching crisis point, due to a lack of orders.

In addition, new designs have become significantly more economic than even vessels designed and built only five years, or so, ago.

Frontline 2012 said that its vision was to build the leading global commodity shipping company within three years at historically low newbuilding prices with sole focus on high quality, modern, fuel efficient tonnage.

The target is to position the company ready for an anticipated recovery of the shipping markets in the next two to three years- so they do know something we don't.

As well as the newbuildings, Frontline 2012 said that it would also consider secondhand modern tonnage, but this is not likely to be a central part of the strategy, the company said.

Explaining its startling investment, the company said that the current historically low newbuilding prices and the significant fuel efficiency of the new tonnage materially reduced the financial risks involved.

Most of the tonnage that the company has ordered will, based on the improved fuel efficiency and low capital cost, be profitable at rate levels where existing tonnage barely covers operating costs, Frontline 2012 said.

Indeed, the global interest in the newbuilding market has recently increased, although from a very low level. The low and, in some cases, negative margins for the shipyards has led to a significant scale down of yard capacity, particularly in China and Japan.

To help pay for the newbuildings, Frontline 2012 will seek a listing in New York within 10 - 16 months. As markets develop, the company will look to refine the fleet profile through the sale of assets, or spin offs.

Diverse fleet

Fredriksen has a diverse portfolio of companies, which encompass tankers, drilling units, gas carriers, drybulk carriers and containerships. However, his first love were large tankers in which sector, he still has a large fleet through his investments in Frontline and Frontline 2012.

During the past few years, VLCCs and Suezmaxes have taken a battering in the charter markets with the latest estimated daily TCE average for the first quarter of this year being only $1,250 for VLCCs and $12,000 for Suezmaxes.

On a positive note, the IEA estimated that world oil demand for 2013 will be 90.7 mill barrels per day, slightly up the 89.8 mill barrels per day recorded last year.

According to Fearnley's, at the end of last year, the VLCC fleet totalled 622 vessels, while the orderbook stood at 81 vessels. The current order book represented around 13% of the VLCC fleet. The single hull fleet accounted for 17 vessels.

As for Suezmaxes, the fleet totalled 468 vessels at the end of 2012. The order book consisted of 72 vessels, which represented 15% of the total fleet. According to Fearnley's, the single hull fleet was reduced from nine to five vessels by the end of the year.

At the same time, the MR fleet totalled 1,513 vessels with the orderbook accounting for a further 142 vessels, which represented about 10% of the MR fleet.

Perhaps a glimmer of light for VLCC owners is the growing demand for older tonnage, both single and double hull, from oil producers and engineering contractors alike to convert well maintained hulls into FPSOs.

For example, during a recent visit to a new SBM joint venture in Brazil, the company told *Tanker Operator* that they were looking to purchase two to three VLCCs per year on a speculative basis for possible conversion projects.

With Petrobras embarking upon the largest floating production projects in the world, there is hope that some of the newer vessels could command reasonable prices, if the market is not saturated.

Indeed, former Frontline VLCCs have found their way to China, Singapore and Brazilian shipyards to feed this growing market in the past couple of years, as have others. TO

TANKEROperator

Vol 12 No 5
Tanker Operator Magazine Ltd
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Venezuelan oil production post Chavez

The recent announcement of Hugo Chavez's passing has opened up a host of questions about the future leadership of Venezuela and the potential impact this leadership transition could have on Venezuelan oil production and global oil markets.*

Venezuela is one of the largest oil and natural gas resource holders in the world. It is among the world's largest oil producers (13th) and exporters (10th) and has historically been one of the US' largest sources of oil imports (fourth behind Canada, Saudi Arabia and Mexico).

Ever since the failed coup and the subsequent strike that brought about a short collapse in oil production in 2002, followed by nationalisation of the oil sector, onlookers have been waiting for indications that the regime's approach to energy production would either fail once and for all, or that some political change would bring about reform and rejuvenation of the energy sector.

A political transition in Venezuela is now upon us but how it evolves could mean a lot for the energy sector and global energy markets.

Despite its enormous oil resources, Venezuela's oil production (regardless of whose figures you use) has long been in steady decline. In 2011, liquids production was 2.47 mill barrels per day , down by 1 mill barrels per day since 1999. Some of this is reflected in the changing cost and economics of Venezuelan oil production but field decline is significant and expertise and reinvestment are questionable and looking harder to come by.

The internal technical and managerial capabilities of state run oil and gas company PDVSA have deteriorated since the 2002 strike and aftermath. Increasingly, PDVSA relies on contractors, as well as other private company partners, to keep the fields in production but reports state that contractors have not been paid in months and that the political uncertainty in the country has even driven routine decision making to a halt.

The sustained political uncertainty has also slowed investment; Russian and Indian companies were planning to invest in Venezuela's oil fields but so far have withheld incremental new money. China has not announced a new line of credit or extensions on its development-linked financing since April, 2012.

The winds of change are once again blowing in Venezuela.

At the same time that production is dropping, highly subsidised domestic consumption of oil is increasing while revenue from exports is also declining. The US remains the largest recipient of Venezuelan oil exports at 950,000 barrels per day in 2011, roughly 40%, plus another 185,000 barrels per day from the Caribbean that was Venezuelan sourced but those volumes have dropped as US demand has declined and other crudes have become available.

Venezuela's next largest export destinations are the Caribbean (31%) and then China (around 10%). Venezuela sells to many of its Caribbean neighbours at below market rates, due to extremely preferential financing relationships, including additional heavy subsidies for Cuban exports. All of this culminates in an outlook for continued decline in oil production and a worsening economic outlook for Venezuela during a politically difficult time.

However, conventional wisdom argues that maintaining oil production is in the interest of any regime. Revenue from oil production is such a large part of Venezuela's government balance sheet that no leadership could survive for long without a sustained cash flow that oil exports bring.

The converse of this argument is that revenues generated by the energy sector are such an important source of power and influence in Venezuela that there is potential for infighting over control of the sector. Moreover, the potential for strikes, or instability among groups involved in the sector (some of whom have not been paid) could have additional negative impacts on production.

While oil markets have so far taken the news of Chavez's demise in their stride (many claim because the news was largely expected, others because the political outcome is still so uncertain) an actual disruption in Venezuelan production could add pressure to an already difficult market outlook.

Last year produced a number of supply disruptions around the world from OPEC, the Middle East North Africa region, as well as non-OPEC sources. If the economic outlook continues to improve and yield an increase global energy demand, if Iran sanctions remain in place and if Venezuelan production is compromised, then oil prices would experience much more significant upside pressure from any new disruptions.

Even under the best of circumstances, reform in the energy sector will take a long time to emerge. The damage that has been done to not only PDVSA but also to the institutions of the state and civil society could take years to rehabilitate. A few key reasons for this include:

1) Revenue from the oil and gas sector that is diverted for political purposes and not reinvested in a way that will drive new production will be hard to direct back to useful investment in the sector.
2) Much of the private sector has been driven away from investment in Venezuela and may be reluctant to return, or for the companies in the country to re-invest in the short-term given their experience in the 2000s.
3) Oil field mismanagement and damage may have likely occurred over the last decade and it will take time and investment to revitalise.
4) Many of Venezuela's core assets are in technologically complex and capital-intensive heavy oil projects that take time and resources to develop and must now be

viewed in light of the global array of upstream options that are now on the table for international oil investors as compared to a decade ago.

5) Some of Venezuela's current commercial relationships on the upstream or export side may have to be revisited in light of a more commercially-based hydrocarbon policy.
6) Venezuela's energy sector is dominated by the state's decisions and management and it will take time to replace the managerial competency that once existed.
7) Highly subsidised oil is a key feature of Venezuelan society and the political will to reform the entire energy sector into one that is more market-based and open to private investment will necessarily have to feed into the domestic demand side of that equation.

What about Venezuela's relationship with the US? Over the last 10 years, the sustained trading relationship between the US and Venezuela has been one of the stabilising forces in an otherwise contentious and sometimes volatile relationship. US refineries in the Gulf Coast are specifically designed to process Venezuela's sour and medium to heavy crude and serves as its natural market.

Despite oil production being down, the US still imports just under a million barrels of crude per day from Venezuela (down from a peak of 1.4 mill barrels per day in 1997) and, as stated earlier, the government of Venezuela is highly dependent on those revenues for their ongoing stability, especially as revenue from other exports and domestic consumption decline.

As we look ahead to another period of transition in Venezuela, it is important to be mindful of the potential for disruption and to look for ways to mitigate the impacts of such disruption, but it is equally important to remember the trade ties that bind the two countries for the time being and to find opportunities to drive change in a positive direction.

Time may be limited in this regard because the US domestic production outlook is changing thanks to tight oil development in the country and the influx of Canadian oil sands, both of which are giving US refiners more options in terms of the crudes they use and more decisions to make about how they want to configure their refineries going forward. A future in which Venezuela is no longer as competitive in its natural market in the US would change the outlook for Venezuelan crude marketing decisions.

The long-term outlook for Venezuela's continued oil market production is changing both in commercial and political terms. The situation has looked unsustainable for a long period of time but has managed to persist longer than most people thought it would. Only time will tell if the upcoming leadership changes will bring a new chapter for Venezuela. TO

This article was taken from Commentary, written by Sarah Ladislaw, co-director and senior fellow, Energy and National Security Program, and Frank Verrastro, senior vice president and James Schlesinger Chair for Energy & Geopolitics at the Center for Strategic and International Studies (CSIS) based in Washington (DC)

Commentary is published by CSIS, a private, tax-exempt institution focusing on international public policy issues.

No tipping for economic forecasters

We continue our series of articles specially written for *Tanker Operator* by Marine Traffic Forecasts, this time analysing the lack of tipping points in forecasting*.

To every seafarer, the tipping point is surely evocative of the point at which a vessel starts an inexorable slide to, for example, capsize, or swamping.

Scientists will say it is a matter of mainstream physics. But it is surprising and serious that this concept is ignored, avoided, or over–simplified in many areas of analysis and especially forecasting.

Our interest and that of many is the forecasting of critical maritime metrics, such as traffic volumes. These include weather and related climatic drivers and it is informative that even this area, despite being a part of physics, has suffered from ignoring of tipping point effects, or more pertinently setting up experiments, or forecasting models, that do not permit tipping points.

The rapid shrinking of the permanent Arctic ice cap was poorly forecast because the models had assumed that an unchanging recovery mechanism takes effect after each set-back to the ice coverage and thickness.

We now know that the accumulated effect of a sustained period of global warming was undermining that recovery mechanism. In the mid -2000s, the system was dragged below a tipping point after which the ice takes longer to recover from small set-backs. This in turn leads to an acceleration of the trend decline in sea ice coverage.

When most economists and in particular econometricians get engaged in forecasting the world, which is critical to the population and activities, such as port investment, vessel purchase and route planning, it is tragic to note that they have achieved much less than the climate scientists. Tipping points are noticeably absent in models used to forecast maritime traffic.

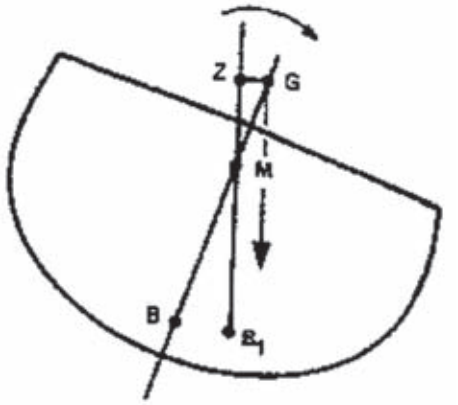
A simple explanation and forecast model is used for traffic volumes. In most cases, consultants use an unchanging relationship of volume to a sole driver (GDP); which is nothing short of unprofessional. They ignore for example the impact that any structural changes in economies will have on the future pattern and level of trade.

As all seafarers know, adverse conditions, such as large waves will 'rock the boat' which can lead to delays. But occasionally, unusual combinations can produce extreme conditions with, for example, 'superwaves' that cause severe damage, or worse; especially if the vessel is not prepared for these conditions.

Economic 'superwave'

So too with economics and hence the knock-on effect on traffic volumes and vessel prices. One such hidden 'superwave' built up in peripheral Europe as weak economies were encouraged to push the boat out with interest rates from the Euro that were too low for their situations even at the outset.

The general maritime forecasters and many of their clients were happy with simple GDP/volume relationships because it supported their investment strategies.



The tipping point.

But the actual GDP numbers did not show, or foreshadow, the distortions building up, nor were the tipping point dangers identified before the point when the 'superwave' arrived.

Clearly illustrated here are the major boom build-ups of construction activity in a southern European country over 40 years in relation to the movements of GDP. The medium and small waves that occurred in the mid-1970s and around 1990 led to disruption and damage. But the 'superwave' that broke in 2009 on the other hand smashed the normal recovery mechanism into disfunction.

As the effect of this was repeated in several

The rapid shrinking of the permanent Arctic ice cap was poorly forecast.

Construction Industry Activity in relation to movement in GDP. Source: Maritime Traffic Forecasts

A potential economic capsize.

other countries regionally, it pushed maritime trade into a dark place on which no conventional models shine a light. We will show in a future article how straightforward forecasting and data analysis techniques can show up all these effects with a clear view of potential economic capsize and the very non-standard consequences that this can have.

In the meantime, don't expect the pre-crisis pattern of trade to resume. This fundamental assumption has been quoted by both central banks and economic forecasters, but as we will show, it can be a fundamentally flawed presumption due to the damage caused by an economic 'superwave'. TO

**By Graham Cox, economist, Maritime Traffic Forecasts - www.maricasts.com*

Planning the most efficient route

Gone are the days where weather routing companies can simply recommend for earliest, safe arrival and expect to give their clients a cost-effective voyage*.

Costs of cargo heating and ECA zones can dilute any savings, which might be earned by an earlier arrival. However, the North Atlantic in winter can override everything else.

In this example, a chemical tanker was sailing from northern France to New York. The Master's intended route was via the English Channel, great circle 42N 50W, then rhumb line to New York, as shown on many routing charts.

This route was expected to encounter two periods of 10 m plus head waves while crossing the Atlantic; hence the north-about route was recommended by Applied Weather Technology (AWT) and followed by the Master after obtaining the appropriate charts.

Using AWT's recommended route and ignoring all other factors, the vessel was expected to save about 54 hours of steaming time. With the tanker consuming 20 tonnes per day in the main engine, this would equate to a savings of 45 tonnes of fuel oil.

However, this must be adjusted for an extra 24 hours in the northern Europe ECA zone, as well as an extra 48 hours in the North American ECA zone. In addition, when cargo heating is required, this must be accounted for when calculating voyage costs.

In such a case, AWT will methodically review the voyage and can give the client the relevant information per the following template:

This template clearly shows the impact of the ECA zones on the route in addition to the various other factors. With this level of detail from AWT, clients can achieve maximum savings, the company claimed.

In addition, the sea surface temperature information can be analysed, as shown in the following BVS image below.

	Main Route	Alternate Route
DISTANCE (NM)		
TIME (HRS)		
AVG SPEED (KTS)		
WEATHER FACTOR (KTS)		
CURRENT FACTOR (KTS)		
CALM SEA SPEED (KTS)		
NORTH AMERICA EC ECA		
ECA Distance (NM)		
ECA Time (HRS)		
Total LS IFO Cons (MT)		
NORTH SEA ECA		
ECA Distance (NM)		
ECA Time (HRS)		
Total LS IFO Cons (MT)		
ECA SUMMARY		
TOT ECA Distance (NM)		
TOT ECA Time (HRS)		
Total LS IFO Cons (MT)		
Total HS IFO Cons (MT)		
Total IFO Cons (MT)		

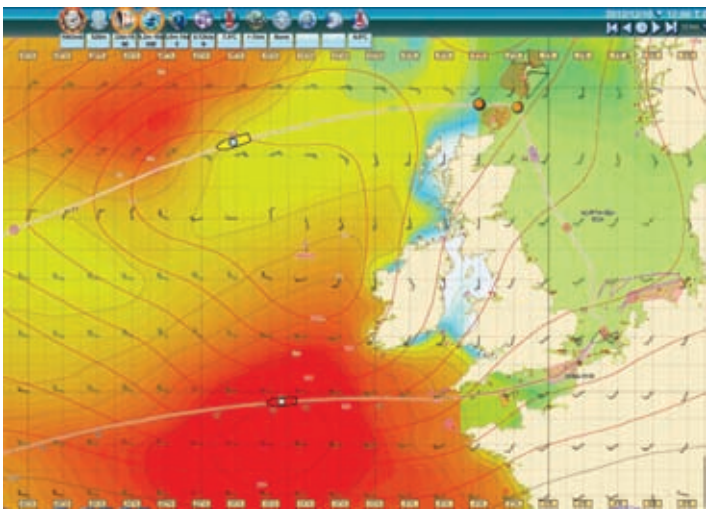
Voyage analysis template.

With close communication with the Master and/or client, the requirements of cargo heating can then be estimated. Ship routing companies are not necessarily given access to sensitive hire and fuel cost information by clients, but, in an example such as this, this information is essential to recommend the most safe and fuel-efficient voyage.

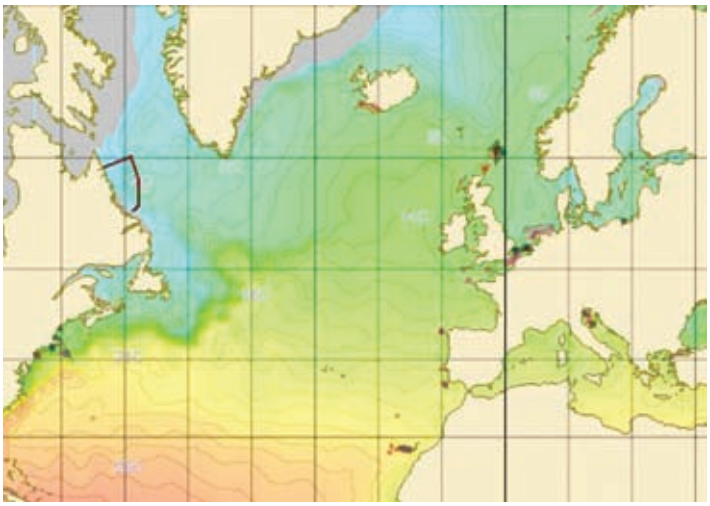
With this complete information in hand, we are clearly able to calculate which route was the most efficient. For this voyage, the final results showed a savings of 2.5 sailing days with 27 tonnes less fuel consumed, even after taking cargo heating and ECA zones into account.

Based on the current market, total savings would be around $50,000. TO

**This article was reproduced from the AWT newsletter and was written by George Schlinkert, vice president, operations.*



Northbound route recommended, due to wave heights.



Temperature information can be analysed.

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Solving the challenges of husbandry invoices

DA-Desk has upgraded its PortSpend management service to include the non-commercial aspects of a port call.

The original service was launched to fully automate the disbursement account (DA) process by way of streamlining and speeding up DA operations to eliminate thousands of pieces of paper from the operator's desk over the course of a year.

The non-commercial, or husbandry costs, include services that a shipowner, manager, or Master must arrange at a particular port in order to be able to complete the voyage without incident or delay.

These include the costs incurred taking care of the everyday needs of the crew, such as doctor and dentist visits, crew changes and 'cash to master'. They can also include some vessel maintenance costs, ship spares delivery and arranging surveyors and technicians.

Costs can vary widely depending on the duration of the port call and on the location of the port. While these costs may only comprise a small portion of the total port cost, they can be time-sensitive and complex to manage on a daily basis.

Internally, there is generally no fixed process in place to handle advances, proforma disbursement accounts (PDAs), or final disbursement accounts (FDAs) for husbandry costs. Although the invoices are the responsibility of the owners, the agent may not separate out the non-commercial invoices, but instead sends them to the commercial operator - sometimes not until months after the vessel has left the port. This can lead to issues with the accrual accounting and period reporting inaccuracy, until the FDA figures are finalised.

If this situation occurs, it is up to the operator to separate the bills and forward the appropriate invoices to the owner. There may be limited querying of agents on FDAs and no follow up due to time constraints.

DA-Husbandry puts a process in place that solves this issue for vessel managers, operators and technical staff by taking the husbandry invoices off their desks. This allows them to concentrate on running the vessel safely, efficiently and on budget.

Through the new service, an agent is appointed by the shipowner, or manager, in a similar way to a commercial call. The appointment however is made to the agent under a term such as 'husbandry agent', or 'owners protective agent'. The agent is therefore employed to look after the non-commercial interests of the shipowner, manager and Master.

Upon submission of the husbandry FDA, the DA-Husbandry team checks each charge on each invoice, clarifies any and all issues and scans every invoice into the online application. This scrutiny can result in some savings being deducted directly from the FDA.

It is enables auditors, internal control staff and owners to find any voucher, or invoice and all related cost control comments online, which saves them precious time. It is a fee-based service with a fixed cost for each port call. There are no upfront, consulting or training costs.

Added benefits

Customers who use DA-Husbandry also can use the DA-Desk system as a contract management tool. DA-Desk reports on key performance indicators (KPIs), including process timelines, cash flow savings, credit notes obtained, agent and terminal administrative performance and if necessary, internal compliance. These KPIs help all departments manage the budget and timelines more effectively.

Compliance is an additional benefit. DA-Desk will check every invoice and supporting documentation through DACOMPLIANCE, which has a singular goal of maintaining the necessary systems and processes to minimise customers' exposure to legal, financial, and

DA-Desk's Ken Anderson.

operational risks involving the following key areas:

1) Bank account verification;
2) Payment approval and transaction monitoring;
3) Sarbanes-Oxley Act;
4) Anti-money laundering and anti-corruption;
5) Automatic check for trade and economic sanctions in Dow Jones database;
6) Information technology systems.

The bottom line is that the DA-Husbandry PortSpend service saves customers valuable time checking and following up on invoice issues - which in turn allows customers to focus on other more critical tasks. TO

**This article was written by Ken Anderson, operations director, DA-Desk who is responsible for company strategy and operations.*

He joined the company in 2003 and has more than 30 years' experience in the shipping industry, having held positions with vessel operators (British Steel), shipping agencies (Denholms and British Steel), shipping accounts and demurrage settlement (British Steel), marine engine building and the spares sector, initially with JG Kincaid.

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'Simplicity is the key to Success'

Oil and gas driving the shipping industry

In late 2011, Brazilian shipyards started to deliver the first tankers in a massive R$10.8 bill investment programme of 49 ships ordered by Transpetro, the shipping arm of Petrobras.

This vast newbuilding programme, which effectively started in 2003, is being undertaken against a backdrop of accusations of a lack of yard quality and management, especially in the larger size ranges. The orders range from 48,000 dwt MRs to 157,000 dwt Suezmaxes.

A few months ago, at least one the yards constructing the Suezmaxes has replaced its technology partner Samsung with IHI, bringing back memories of Ishibras, which was a joint venture shipbuilding yard back in the Brazilian vessel construction boom times of the 1970s and 1980s.

Ten Suezmaxes were ordered at Atlântico Sul Shipyard (EAS) in Pernambuco State, the first of which - *João Cândido* – was the subject of a fine for late delivery last year, under the terms of the newbuilding contract. This yard will be joined by STX Promar currently under construction and due to start operations in a couple of months and the other yards of Mauá and Eisa, which are already in operation.

Another smaller yard in Sao Paulo State is also being built to construct inland waterway tugs and barges, which could number more than 200.

In its first operation in May 2012, *João Cândido* loaded oil from the Campos Basin to the Almirante Barroso Terminal (Tebar) in São Sebastião (Sao Paulo).

The vessel had reached an index of 70% of national content, higher than the 65% stipulated in the first phase of the Promef programme (see below). This was a regulation essentially brought in to safeguard Brazilian industry and jobs in the wake of the country's huge expansion plans in the oil and gas sector. It is normally pitched at around 65% but does vary depending on the vessel type and other factors taken into consideration.

The *João Cândido* was the second ship in the newbuilding programme to enter service. The first, the 48,000 dwt MR *Celso Furtado*, was delivered to Transpetro in November 2011 by the Mauá Shipyard in Rio de Janeiro. The next vessel was the product tanker *Sérgio Buarque de Holanda,* also built at Mauá, which successfully completed its sea trials on 16th May last year.

All of the vessels were ordered under the auspices of the Transpetro fleet modernisation

> "Promef was created in 2004 to oversee three areas - to build vessels in Brazil, to ensure a local content of at least 65% and to achieve international competitiveness in shipbuilding once the learning curve had been successfully negotiated."

and expansion programme (Promef), which in turn is part of the Federal Government's Growth Acceleration Program (GAP).

Promef was created in 2004 to oversee three areas - to build vessels in Brazil, to ensure a local content of at least 65% and to achieve international competitiveness in shipbuilding once the learning curve had been successfully negotiated. With the first two phases underway, the organisation is now tackling the perceived inertia in the domestic shipbuilding industry.

To achieve international status for the shipyards and to look after its newbuilding interests, Transpetro formed a production monitoring sector (SAP), whose job it is to assess the yards' production processes and to suggest alternatives to improve productivity.

Since the domestic shipbuilding industry declined more than 20 years ago, the country has lost its yard technical and management expertise it originally built up with outside help in the ship construction boom.

Today, thanks to Transpetro's huge ordering spree, Brazil has the fourth largest shipbuilding portfolio worldwide. Brazilian shipyards, which had less than 2,000 workers at the turn of the century, now employ around 62,000 people, which could rise to 100,000 by 2016, as more shipyards come on stream. These estimated figures were produced by ABENAV (Brazilian Association of Shipbuilding and Offshore Companies).

"We are leaving the phase of inactivity. We are now moving into the phase of productivity. We will complete the third pillar of this programme, because we have already finished the two first phases: producing new ships in Brazil, and reaching 65% nationalisation. We now have to work together to ensure productivity and sustainability. That's how we will place the Brazilian naval industry in the global scenario," Transpetro CEO Sergio Machado said at a vessel delivery ceremony last year.

This newbuilding programme has also been responsible for the generation of jobs. Over 15,000 direct jobs have already been created and this number should reach 40,000 direct and 160,000 indirect jobs in the not too distant future.

Promef 1

During the first phase of Promef's programme, the following ships have been ordered, some of which have already been delivered -

- Estaleiro Atlântico Sul (PE) = 10 Suezmaxes.
- Estaleiro Atlântico Sul (PE) = five Aframaxes.
- Estaleiro Ilha (Eisa) (RJ) = four Panamaxes.
- Estaleiro Mauá (RJ) = Four product carriers

Promef 2

During the second phase, the following ships will be built:

- Estaleiro Atlântico Sul (PE) = Four DP Suezmaxes.
- Estaleiro Atlântico Sul (PE) =Three DP Aframaxes.
- Estaleiro Promar (PE) = Eight gas ships (LPG).
- Estaleiro Superpesa (RJ) = Three bunker tankers.
- Estaleiro Ilha (Eisa) (RJ) = Eight product carriers.

Today, Transpetro has 61 tankers capable of carrying 3.6 mill tonnes of oil and products. These include 18 crude oil tankers to offload from production platforms offshore; eight ships to carry fuel oil and bunkers; 20 tankers for clear products; seven for diesel oil and gasoline; six LPG carriers; one FSO and one support vessel.

The tankers' co-ordination comes under the banner of the Maritime Transportation Managements (Getrams), which is split into six divisions-:

Getram 1 – This department commercially manages the ships that offload crude oil and fuel for coastal navigation. It is also involved in the export of fuel oil to Argentina.

Getram 2 – No 2 is responsible for the operation of gas ships, carrying chemical gases and liquefied petroleum gas, both coastal and long-haul and for the export and import of gas products. In addition, this division operates a storage unit - *FSO Avaré* – and an AHTS.

Getram 3 – This department looks after the shipments of dark-coloured products and by-products (fuel oils in general and maritime fuel oils) and the distribution of oil produced from the Urucu Field (through the Terminal in Coari – AM) and the Campos and Santos Basins and also in the import and export of fuel oil, mainly to Argentina and Uruguay.

No 3 also manages DP tankers used to distribute crude from the offshore production terminals to Angra dos Reis (RJ), São Sebastião (SP), São Francisco do Sul (SC) and Tramandaí (RS).

Getram 4 – This arm is responsible for tankers to be used in lift light-coloured oil by-products, which operate between the domestic refineries and the ports on the Brazilian coast. It is also responsible for diesel oil imports, the export of gasoline and the supply of diesel oil to the vessels in the Campos and Santos Basins.

Getram 5 – No 5 administers the dynamic-positioning (DP) ships to be used to ship oil from the offshore oil production facilities to the terminals at Angra dos Reis (RJ), São Sebastião (SP), São Francisco do Sul (SC), Salvador (BA) and Tramandaí (RS).

Getram 6 – The sixth arm is responsible for the tankers to be used for the shipping of light-coloured oil by-products, which carry out operations between the terminals linked to the domestic refineries and the ports on the Brazilian coast that are not directly serviced by refineries.

The company is also involved with the import of light-coloured by-products and in the supply of diesel oil to the vessels in the Campos and Santos Basins and supports the pre-salt layer operations.

In 1998, Transpetro was the first company involved with derivatives and offshore oil transportation to obtain the environmental management certificate ISO 14,001, issued by Bureau Veritas Quality International.

> "On any one day, the oil giant operates 250 tankers in all categories"

The tanker company can trace its history back to the National Oil Tankers Fleet (Fronape), which was created on 25th April 1950. With a large market, Fronape started to carrying out all the cabotage trades and took part in the long haul shipments of both imports and exports, supporting the national oil policy of the day.

In 1972, it became involved in the transportation of ores and chemicals. A year later, the first two specialist ships were ordered. Also in the beginning of that decade, contracts were signed with Japanese shipyards for the construction of VLCCs and, in January 1974, Fronape took delivery of the 250,000 dwt *José Bonifácio.* In the same year, two more VLCCs joined the fleet, thus increasing Petrobras' participation in the import of crude oil. Later, between 1978 and 1980, four more VLCCs were delivered but this time built in Brazil.

In 1998, Fronape's vessels were incorporated into the newly created Petrobras Transporte - Transpetro.

Today, as well as tankers, Brazil's rapid evolvement into an oil and gas producer will see the country develop what is claimed to be the world's largest exploration and production investment programme during the period 2012-2020.

To meet this target, Petrobras will need 38 production platforms/FPSOs, 50 drilling rigs, more than 500 offshore support vessels and 80 tankers. In Brazil, this expansion plan has led to the opening of 47 shipyards with 11 new yards still under construction. These are building, or converting 18 offshore oil platforms, 28 offshore deepwater drilling rigs with another seven under negotiation, plus the 49 Promef/Transpetro tankers and 568 offshore support vessels.

Oil resverves

Why all this excitement? As of December last year, Petrobras' proven reserves stood at 15.7 bill barrels of oil equivalent in Brazil and another 0.7 bill overseas with potential growth of another 15.8 bill barrels of oil equivalent. By 2030, the country forecasts that it will reach the world's highest growth production among non-OPEC producers.

In the tanker sector and with a plethora of other vessel types needed for the huge offshore expansion programme, problems have been identified, such as the general lack of repair facilities in Brazilian ports.

Transpetro told *Tanker Operator* that to drydock its tankers, the company has to bid for cargoes heading for Asia, or the Caribbean. As for the larger AHTS', they have to go to South Africa, Las Palmas, or even further afield. However, a newly built floating dock should arrive at Niteroi in the next couple of months to handle the larger support vessels.

Negotiations were believed to be underway with interested third party shiprepairers to set up repair bases around the coast. However, as with all non-domestic concerns, a joint venture needs to be set up with a local concern to operate any new facilities.

Of course, Transpetro-managed tankers are not the only source of transportation open to Petrobras. On any one day, the oil giant operates 250 tankers in all categories. Shuttle tankers are chartered in from Stena, Teekay, Knutsen/NYK and others. Long term chartered new deliveries include DP2 shuttles from Tsakos, Teekay and the BG Group, among others.

Other players

Petrobras is also not the only major player off the coast, as Statoil has invested in the Pellegrino Field, buying a Maersk Offshore FPSO, formerly the VLCC *Maersk Nova* and chartering in nine conventional Aframaxes from Teekay and Sovcomflot for periods of between two, three and five years. They are operated by Statoil in the US and sub-chartered to a Brazilian company.

The Aframaxes are used to lift 650,000 barrel cargoes from the FPSO for export to US, Canada, Asia and India. They load by using hose connections amidships directly into the tankers' manifolds. Ship-to-ship transfers are not permitted around the Brazilian coast.

It was explained that a more traditional Aframax was much cheaper to operate than its DP counterpart. The tankers are held in place by an offshore support vessel attached to the stern and the whole operation can weathervane as necessary.

TO

West Africa - the growing menace

"We cannot put armed men on board in Nigeria. There will be an escort vessel task only. There will be nobody on board any vessels in Nigeria." This is a stark warning given by Florida-based Armed-Piracy-Defence/World MarSec Union Services.

Maritime crime has been present in West Africa for many years and vessel operators familiar with the region will be well aware of crimes, such as robbery from vessels at anchorages and other local practices such as routine shortage claims.

The high risk area (HRA) encompasses the Gulf of Guinea, the Bight of Benin and the Bight of Bonny. This includes the territorial waters of Togo, Benin, and Nigeria. There has been recent expansion by suspected Nigerian pirates into the waters of the Ivory Coast.

Piracy is rising in the Gulf of Guinea, with 58 incidents recorded in 2012, including 10 hijackings, and 207 crew companies taken hostage. Pirates in this area are particularly violent, with guns reported in at least 37 of the attacks.

Nigeria accounted for 27 incidents in 2012, with four vessels hijacked, 13 vessels boarded, eight fired upon and two attempted attacks. Togo has also seen an increase from five reports in 2011 to 15 in 2012, including four hijackings.

Off the Ivory Coast, five incidents were reported in 2012, up from one in 2011. In the last quarter of 2012, a Panamax product tanker was hijacked by suspected Nigerian pirates off Abidjan, the first such recorded vessel hijacking off the Ivory Coast. This shows the increased range of Nigerian pirates.

It should be noted that it is widely believed that there is significant under reporting of maritime criminal incidents occurring in West Africa, Armed-Piracy-Defence said.

Who are the criminals?

There is a wide spectrum of potential maritime criminals in West Africa. They range from opportunistic thieves looking to rob vessels at anchor and stevedores stealing small amounts of cargo, to highly large amounts of cargo, to highly sophisticated criminal gangs that can operate across national boundaries.

These gangs have the ability to identify, track and hijack specific vessels and conduct ship-to-ship transfers of petroleum cargoes offshore. Added to the criminal mix are politically motivated militias who regard maritime assets, in particular those connected to the local oil industry, as legitimate targets.

Heavily armed militants and criminals use manoeuvrable speedboats to attack vulnerable targets.

Types of West African maritime crime include -

- Kidnap for ransom in the Niger Delta region, including offshore platforms, support vessels and other vessels.
- Theft of crude oil and fuel oil, particularly in Nigeria's coastal and offshore regions
- Cargo smuggling and fraud, particularly refined petroleum products.
- Cargo theft, of various other commodities.
- Robbery of vessels at anchor. Items taken can include cash, valuables and personal possessions.
- Vessel hijack for the purpose of cargo theft. The primary targets are refined petroleum products, particularly gasoline.

All of these criminal activities are serious in nature but the kidnap for ransom of vessel crews, and the hijack of vessels for the purpose of cargo theft are perhaps of most concern to ship operators and their crews.

Vessel surveillance

Good surveillance of, and communications with, the vessel, particularly when it is in a vulnerable area, will improve an operator's ability to warn and utilise those local military/law enforcement agencies that are assessed as being capable of providing timely, effective support.

However, the effectiveness of local agencies and military can vary greatly from location to location and expert advice may be required to assess the effectiveness of these forces in a vessel's area of operation. An emergency surveillance and tracking plan should be developed before the vessel enters the HRA.

Vessel hardening

Vessels operating in West Africa are often required to spend lengthy periods either drifting, or at anchorages. A stationary vessel is an easy target for pirates. Vessel hardening techniques used to protect moving vessels in the Indian Ocean are not likely to prove effective for stationary vessels.

When considering physical defences for a stationary vessel, it may be more appropriate to think about the type of defences a land facility would require to make it secure from attack by armed gangs. Obviously, this type of hardening can require considerable forward planning and cost and is another area where expert advice may prove invaluable.

Armed guards

While the use of armed guards in the Indian Ocean is becoming routine, the West African situation is much less developed. There are a number of complications, such as local legislation, operating across national boundaries and the more complex types of operation that may be taking place, such as offshore support and STS operations.

Local laws require that armed guards should be from the local government security forces. This introduces potential safety, security and political issues with the use of such guards, particularly if a vessel needs to operate in the territorial waters of more than one coastal state in the region.

Employment of local security force armed guards customarily takes place via a local agency. As a result, operators should seek to ensure that the agency they use is employing local security forces that are on duty and as such an informed and legitimate part of the local intelligence/military network.

Companies should also be aware of the practice of using a reputable security provider, such as those employed in the Gulf of Aden, to facilitate the use of armed guards in West Africa. Such providers can source legitimate companies of the security forces and provide personnel to act as a liaison between the Master and the Nigerian forces once embarked on a vessel.

Obviously, given the potential problems, companies should exercise extra care when assessing whether, or not to use armed guards for West African operations, Armed- Piracy-Defence, warned.

TO

West African complexities

Several initiatives in the form of advice and specific action are being put together by various security forms to combat the growing threat of pirate activity in the Gulf of Guinea. *Tanker Operator* has put together just a few of the ideas and services being offered.

MAST Maritime Asset Security and Training (MAST) has developed new guidelines for shipowners engaging maritime security services in West Africa.

The company developed the guidelines in support of new directions published on the 5th February by North P&I Club which highlighted that: *'Members should also be aware of the practice of using a reputable security provider, such as those employed in the Gulf of Aden, to facilitate the use of armed guards in West Africa. Such providers can source legitimate members of the security forces and provide personnel to act as a liaison between the Master and the Nigerian forces once embarked on a vessel.'*

The new guidance issued by the P&I club aims to raise awareness of the potential problems of operating in the region and is supported by MAST who said that shipowners and charterers are putting themselves at risk by hiring low-cost, unregulated security services.

Philip Cable, MAST CEO said: "West Africa is a very different environment for PMSCs (Private Maritime Security Companies) to operate in compared to the Indian Ocean. For example, armed security can only be provided by the national armed forces of each country in its own territorial waters. Also, it is illegal for PMSCs to carry firearms in any of the West African territorial waters and it is illegal for PMSCs to transit firearms through any of these countries.

"The Gulf of Guinea is a very complex legal and operating environment. Given the global nature of the shipping industry many shipowners mistakenly assume that they can apply the same principles of anti-piracy that they use in other parts of the world. But failure to understand the unique nature of West Africa could put ships and lives at risk, a fact highlighted by the tragic death of a crew member on board the chemical tanker, *Pyxis Delta,* shot and killed during an attack by pirates off the coast of Lagos, Nigeria.

"In the Gulf of Aden the GUARDCON contract is rightly held as the industry standard, but MAST believes it is not entirely suited to the West African region and recommends that shipowners/charterers use an amended version of the Guardcon contract which is available and approved by the International Group of Clubs," he warned.

Given the unique challenges of operating in the West Africa region MAST recommended the following:

1) When evaluating the cost of PMSCs services offered, shipowners/charterers should consider the size of armed teams, level of accreditations, range of support services and track record in reregulation to working within the law.
2) Ensure a PMSC has appropriate insurance and liability cover and has the appropriate infrastructure in place to support its teams on the ground.
3) It is advisable to use experienced unarmed team leaders from regulated PMSCs who can work alongside the serving members of the various national armed forces. They will provide a critical liaison between the Master of the vessel and the local armed forces, providing guidance on use of the rules of force and operating on a commercial vessel.
4) Shipping companies should ensure that their vessels implement BMP 4 (Best Management Practice for protection against Somali based piracy) on all their vessels entering High Risk Areas.
5) As a large number of attacks/robberies take place around the Nigerian ports and terminals it is advisable to retain the security team until the vessel departs the 150 nautical mile point.
6) Shipowners and charterers should be extremely cautious of shipping agents, or security companies offering to provide national armed forces into any territory other than their own territorial waters and if in doubt should seek the advice and services of regulated private maritime security companies who are ICOC signatures – where the company commits to adhering to international humanitarian and human rights law.

Vessel protection

Meanwhile **Eos Risk Management** has launched a new maritime security service that it claims is unlike any other provided by a western security company.

The West Africa service is aimed at protecting vessels on their way through the notoriously unstable region of the Gulf of Guinea, which has been designated a High Risk Area for piracy and other hostile incidents.

This fully licensed service supplies ex-forces armed operatives, using the latest equipment and trained in advanced conflict management techniques that will protect these vessels as they travel through this area, from the Ivory Coast to Cameroon.

Over the last 18 months this area has seen an increase in pirate attacks from groups operating out of Nigeria who have turned to oil tankers in order to steal the cargo, which is then sold on the black market. The profits from this are then channeled into criminal activities, such as people trafficking, drug/arms smuggling and terrorism.

This rise in attacks corresponds with a decrease in Somali piracy, which confirms the suspicions held by many international authorities who have noted the growth in piracy off the coast of West Africa. This rise in attacks, which includes hijackings, poses a threat to shipping in that area and requires a professional risk-assessed response, Eos said.

In addition, there is an increased threat of violence from these pirates, as compared to their Somali counterparts who are keen to take hostages and hold them for ransom. These pirates from the Gulf of Guinea are more interested in the cargo and will physically attack and kill crew members in order to gain access to this.

Many western security firms have to engage the services of the Nigerian and West African armies to provide armed protection but Eos supplies its own teams and weapons, the company said.

Another company tackling the problem off West Africa is **Oxberry Risk Strategies.**

Last February, the company published *Gulf of Guinea: Beyond Intelligence,* a report on security and piracy in the Gulf of Guinea.

The report not only provided an overview of the security situation and evolving piracy threat in the region but also is the first to give the reader a detailed insight into how pirates in West Africa are utilising intelligence to target commercial vessels, the company claimed. .

It provides shipowners, managers and charterers with advice on how to best protect their vessels and crew against piracy in the Gulf of Guinea. The emphasis is on enabling the reader to consider their options and gain a greater insight into why and how intelligence is being utilised by the criminal gangs that predominantly carry out these attacks.

Operations director Darren Nixon said "*Gulf of Guinea: Beyond Intelligence* is an in-depth advisory report specifically designed to provide vessel operators with a unique insight into how intelligence is being used by pirates to target vessels in the Gulf of Guinea.

"There is plenty of open source intelligence focused on the Gulf of Guinea, however there is limited information available that actually addresses how intelligence is being used by the pirates, what owners and operators can do to improve information assurance or what physical security options are available to them. We felt that there is a distinct lack of detailed information that enables vessel owners and operators to make a more informed decision when it comes to the security of their vessels and crew operating in the region," he said.

Intelligence

James Bellamy, commercial director of Oxberry Risk Strategies, added: "For many CSOs and DPAs, maritime intelligence is normally interpreted as being something they might receive from a recognised maritime source. However, these sources often simply just identify a problem. In this specialist report we cover new and difficult to access information and intelligence and provide advice that will enable Masters and crew to put into practice some new techniques and procedures that will assist in significantly reducing risk."

Oxberry has teamed up with Dryad Maritime to launch of the first Gulf of Guinea Anti-Piracy Workshop, which will be held in London in May 2013.

This workshop will focus on providing an in-depth overview of the complex operating environment that vessel owners and operators face when trading in the region and guidance on what can be implemented to mitigate the risk of being targeted.

"This workshop provides a great opportunity to put recent and historic developments in the Gulf of Guinea under the microscope. We look forward to working with all those who have an interest in reducing risk in this dangerous region and look forward to sharing the full depth of our knowledge and experience" said Karen Jacques, Dryad Maritime COO.

Bellamy explained: "We are also delighted to announce that Stephen Askins of international law firm Ince & Co will be a guest speaker at our first Gulf of Guinea Anti-Piracy Workshop. Stephen was part of the GUARDCON drafting committee and has worked on numerous high profile maritime casualty and hijacking cases off both east and west Africa, so we are grateful to have involvement from Ince & Co who have an extensive and enviable track record of dealing with cases related to piracy and marine hijack in both the Gulf of Aden and Gulf of Guinea." TO

Security and service pool formed

Maritime security experts and service providers worldwide have teamed up to form the World MarSec Union, whose members aim to deliver price reductions by bulk purchasing logistics and services from specific providers in each port.

Each service provider has agreed to lower prices for each member company based on a group rate. The idea is to offer a small service company the same cost savings advantage that can be negotiated by a large corporation.

The Union is a membership organisation, which claims to be able to reduce the cost of armed guards by about 15% per leg on each voyage.

Savings can double for those teams that are disembarking at Galle, or any of the other 34 ports that are signed up to the Union, creating a 15% saving per transit, or $1,800-$2,300 from an initial $25,000-$35,000 estimation.

Using Port Suez, a major embarkation point for MarSec operators, as an example, standard market costs for embarking a team runs to around $6,000-$6,500 per transit. Airport transfers, visas, shuttle fees and armoury costs make up a huge chunk of the overall transit fee, which eats into profits.

Service and equipment suppliers joining the membership scheme can take advantage of a call centre and marketing service in real time at no additional cost, other than the cost of membership.

There will be up to a 20% in reduction to the rental prices across the board. As a MarSec member, companies can get secure and legal back office support that before was only available to the top multi-nationals of the industry, the organisers claimed.

For example, in order to place unused weapons across the HRA and to reduce armory costs, MarSec can contact all of its members, offering the kit and custodian at a rate that is claimed to be fair and competitive on a 24/7 basis.

This in turn could save thousands of dollars in armoury costs, allows work for at least one of a company's team members while the other MarSec member is able to make a transit, which in other circumstances the company would have had to refuse in some cases, due to lack of operational kit.

Another advantage claimed is that rather than disembarking a team and having to fly them out of country, the Union can arrange a return leg back to the port of origin for a $4,000 handling fee.

The Union will take care of the transfer details and costs and even control the logistics and operational needs during the exchange from its 24/7 operations centres based in Florida US, Valletta, Malta and Helsinki, Finland.

From its control and command centre in Florida, the Union can monitor and report the progress of a transit for a flat fee of $650 per mission. The operations support team will arrange all the logistics involved in embarking and disembarking, share intelligence with the team on the vessel and a company's own operations manager and relay all necessary transit information to the client.

The Union's operations support team consists of three full time intelligence analysts and one section commander for live operational support. This includes Sat-phone linkup, UKMTO and MSCHOA reporting dialogue every six hours, live real time intelligence gathering from government sources and human intelligence from key partners strategically placed in the HRA.

For help in areas such as Lagos, West Africa, Beira, East Africa, or Male in the Maldives, the Union offers a legal solution for weapons and guards. MarSec said that it is familiar with the logistical problems faced when sourcing a fastball transit. "Clients require more and more from their MarSec providers and time frames are seldom respected let alone followed," the Union said.

All members of the World MarSec Union are offered a backup plan should they face a major problem. For example, stuck in red tape at customs, or if the team is grounded at an airport due to bad weather, visa problems, or team sickness, the Union can cover these eventualities for the service provider and its client.

General vessel emergencies can also be covered, including -

- Live 24/7 medical advice, or medivac if needed.
- Repair advice on line for weapons and vessel.
- Order of parts & spare parts to suppliers.
- Dispatch of parts, by sea/air.
- Fueling and bunkering in 35 locations.
- Salvage emergencies.
- Hard/soft, toxic/non-toxic waste disposal.
- Shiprepair at sea and in nearest port.
- Crew manning.
- Provision suppliers.
- Vessel hardening material.

Although these duties very rarely fall into the realm of the MarSec provider the company said that it had circumstances where the Master has had no other choice than to turn to the team leader for advice and counsel.

The Union can also provide third party liability, employer's liability, professional liability, personal accident and travel insurance at affordable rates. With its insurer, an operator can save up to 25% per transit with a Union insurance solution. Single insurance coverage is also available for a specific mission.

MarSec now offers armed transit support vessels and is able to embark and disembark teams in the troubled Western African HRA, including, Cape Verde, Ghana, Liberia, Togo, and Nigeria.

An in-house legal support team is on hand to offer various flag state approvals. The Union undertakes this by standardising the application process and tailoring the existing paper work and certificates with MarSec's pre-approved application template.

The local legal representatives will then take the case, which can save both time and money in exchanges between different legal bodies.

Another service offered is a K&R insurance transit. For a shipowner without armed guards, this can cost as much as $250,000 per transit and with a regular armed team, up to $23,000 per transit.

By using the Union's insurance deals, the additional cost per transit is usually less than $13,000. TO

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Ambrey Risk training sets new standards

Maritime security specialist, Ambrey Risk, based in Hereford UK, has put training at the top of its agenda.

The company has conducted a comprehensive training needs analysis (TNA) of all its courses - as well as identifying the key operational performance standards (OPS). This background work led the company to be awarded the City & Guilds' Centre of Excellence Status in February.

In addition, the company has also expanded its training programme and appointed Mick Clifford OBE as director of training and recruitment and risk mitigation expert Ian Kelly as training manager.

Mick Clifford, OBE.

As a result, Ambrey now operates a comprehensive training department offering several different courses in addition to maritime security operative (MSO) training options. A wide range of security training solutions are offered, including maritime and land-based security courses.

The new recruitment and training opportunities include enhanced maritime and land-based training courses concentrating specifically on security/risk mitigation management, security surveying, close protection, health and safety training, teaching qualifications and medical training.

As well as being accredited by City and Guilds and the UK Maritime and Coastguard Agency (MCA), each course will be compliant with international land and maritime law conventions, including the International Voluntary Code of Conduct for Private Security Service Providers (ICoC), UNCLOS, SUA and SOLAS, plus the ISPS code to meet international training course standards.

The company will also offer bespoke training packages for corporate and private clients with specific personnel training requirements. The training department is due to start the new portfolio of courses in June of this year.

Ambrey has already completed its first set of MCA accredited courses - SSO (Ships Security Officer) and all four modules of the STCW 95 course.

Clifford is currently working with the City & Guilds to create a national standard for training MSOs in line with ISO 28007. He has had extensive experience in the selection and training of the officers and soldiers of the Special Air Service (SAS). Ian Kelly also has an extensive background in specialist training and risk mitigation services.

Ambrey employs over 50 full-time staff, has more than 100 deployed personnel at any one time and retains around 400 security personnel vetted and available for deployment. The company has recently been vetted by Gray Page on behalf of North of England P&I Club.

Complimentary

Ambrey explained the synergies that exist between the company's core output of maritime security and the training standard required for those in the industry mean that they are complimentary. Therefore, the level of the standards, as a leading training organisation, means that the company is well placed to deliver and roll out quality training across other elements of the security sector, Ambrey claimed.

Business management director James Gasson-Hargeaves, said; "It is using the standard delivered by the training business to convey the sector standard for the industry, including links between City and Guilds accreditation, the MCA and ISO 2807 standard".

Ambrey Risk Training receives candidates from across the security sector for training in both maritime and land-based services. Ambrey thus selects the very best from those who are successful in their training and tries to find alternative opportunities for the remainder. The company has reached Stage 1 of SAMI's accreditation programme and is awaiting the organisation's Stage 2 to be launched.

In the meantime, Ambrey have been focusing on the development of national standards by gaining City and Guilds Centre of Excellence status and MCA approval. While continuing to focus attention, through the security and complex environments group, on leading the industry towards ISO 28007.

Turning to events off West Africa, James Gasson-Hargreaves said: "West Africa is a very different environment to operate from than the Indian Ocean. Armed security can only be provided by the national armed forces of each country in their own territorial waters.

Any Shipowner that engages with the provision of security by a local unregulated security provider/shipping agent offering a service that deviates from this basic principle is putting their crew, operation and vessel at risk. We have a number of lines in development, most interesting of which is working in partnership with our clients to develop a solution, which best meets the shipping industries needs," he said.

As well as being accredited by Cyprus, the UK and Panama flag administrations, the company is constantly working with various flag states and its clients to understand their needs and, as a result, watches with interest the development of maritime security as the industry matures.

Of note at the moment, the company said, is the Far East Asian appetite for LNG, in particular Japanese legislation anticipated in the third quarter of this year, which may present further opportunities. TO

Cadets gaining sea time - a major problem

In a wide ranging interview, InterManager's secretary general Capt Kuba Szymanski gave his and his association's views on the main issues of today.

The overriding problem in the shipping industry today is the lack of cadets gaining sea time. This is a worldwide problem and not just confined to one area.

"If we don't train today, we will have no Masters and Chief Engineers in 10 years time", warned Capt Szymanski. "There will also be no superintendents in 20 years from now."

He illustrated his warning by saying that InterManager's members pledged to provide accommodation for at least two cadets per vessel. He said that member shipmanagers had provided the two berths needed, but this is not enough to support the whole industry.

"Europe needs to wake up. We have a great numbers of Irish, British and Polish cadets coming through the universities and colleges, but we are struggling to provide them with sea time," he said.

InterManager is preparing a new project – investor in cadets – where shipping companies could pool their resources to train cadets and be recognised for their initiatives.

For junior officers, mentoring is needed. The Nautical Institute is championing this idea, which InterManager fully supports. "The young generation needs to learn from role models. We want to encourage more mentoring and recognize those who work well, but also pass on their knowledge to the junior officers," Capt Szymanski said.

Capt Kuba Szymanski.

InterManager has started a 'junior executives' initiative by which junior shore personnel can become involved in international shipping. Networking and self-support feature very highly in this initiative, which is aimed at preparing the new generation of managers for their challenging duties ashore.

"Presently, we seem to have an oversupply of officers –despite some people in the industry shouting that there is a shortage. My answer to this cry is – a shortage of cheap labour is not a shortage of qualified seafarers," Capt Szymanski explained.

"Any owner who is prepared to pay decent wages will get a decent work force. Those who lower wages have to face the nagging truth – they are lowering quality standards," he said.

Expanding on the theme of the perceived officer shortage Capt Szymanski said that this was "absolutely not true. Garbage in – garbage out – no money no quality," he said.

Anyone who really wants quality will have very good European and also Indian and Filipino officers, but not those who don't want to pay for it. "There are too many cadets who cannot find jobs – how can anybody claim that there is a lack of good material," he stressed.

He also said that there is no shortage of officers waiting for employment, even on the more specialised vessels, such as gas carriers and specialist tankers. "There are plenty of officers waiting for employment and they are very eager to get on board and work," he said.

"We (the industry) need to realise that in order to get good officers, we need to train and mentor, thus provide the young generation with the opportunity to get their feet wet. Young people of today are very eager to work hard and contribute to our industry – they need to be given a chance," Capt Szymanski said.

InterManager recently enrolled a Ukrainian manning agency and Szymanski said that the organisation recognises the importance of the manning sector, hence a number of manning agencies had joined.

"They are very important stakeholders in our industry and need to be represented. Shipmanagers and crew managers work hand-in-hand to provide quality services to the owner. It is great when these services are being recognised," he said.

Capt Szymanski also explained that all members were treated the same in that there are stringent criteria for all, but that the quality operators had no problem in meeting the membership criteria.

All members have to be ISO certified, have to sign up to InterManager's 'cadet policy' and have to be recommended by two other companies. "InterManager's selection committee runs due diligence and checks and recommends candidates to the executive committee, which has the last word," he explained.

At present, crew managers are full members and represent around 8% of the total membership. Ship agencies are allowed to join as associate members.

Turning to the thorny question of ECDIS training, among other industry problems, Szymanski said that this is a headache as the shipping industry is being led by the manufacturers' lobby through the IMO.

ECDIS had become an issue due to the type specific training now necessary, which requires every navigating officer to be in possession of at least 36 certificates, which would allow him or her to navigate the vessel.

He likened this situation to the highway code requiring a driving license for each make of car.

"It is a huge headache for the seafarers – in order to be employable, I have to collect (pass) all those driving licenses – ridiculous!! InterManager along with its associations plus The Nautical Institute, is trying to provide a common sense approach," Capt Szymanski said.

Addressing the anti-piracy initiatives, Szymanski said that InterManager supports and co-operates with organizations, such as SAMI. "All our members run very thorough due diligence processes before employing any sub-contractor and security guards are no different," he explained. "Strict adherence to BMP4, which InterManager members helped to draft, is the backbone of the success." TO

Videotel updates its anti-piracy offering

Videotel has updated its piracy and armed robbery programme in the light of changing piracy activity.

As yet more crew are kidnapped in another raid on a vessel off the coast of Nigeria, shipowners, shipmanagers and operators are once again forcibly reminded of the need to take steps to protect the safety of their crew, their cargo and their vessels.

Nigel Cleave, CEO of Videotel, said. "In the last few years alone the number of alternatives available in the arsenal of anti-piracy measures has increased, but all have their benefits and drawbacks and the legal implications of many of these options to the shipowner are considerable. This is why Videotel has completely revised and updated its Piracy and Armed Robbery training programme.

"We have seen significant changes in the pattern of piracy behaviour, which have been reflected in the response from the shipping industry, governments and other organisations. There has been the use of armed and unarmed guards, as well as citadels and anti-embarkation measures.

"Recent years have also seen an increase of pirate attacks in West Africa – as well as other locations – and the industry standard guidelines, BMP (Best Management Practices for Protection Against Somalia Based Piracy), need to be adapted for the different circumstances encountered today," he said.

Videotel's updated programme is designed to help shipping companies and their crews to safely transit pirate zones anywhere in the world. It provides a broad understanding of piracy today and how the shipping industry and governments are responding to it, placing emphasis on BMP as the core tool helping ships avoid, deter and delay pirate attacks.

The programme, available in all multimedia formats including Videotel On Demand (VOD), features ships making preparations prior to transiting the Indian Ocean High Risk Area (HRA), interviews with senior shipping industry personnel and representatives from naval/ military forces as well as other organisations.

Nigel Cleave

Maps showing the concentration of piracy incidents and graphics illustrating how ships can make evasive manoeuvres are also included. TO

Walport tackles the human element

Walport Maritime Training Films has launched its latest film - *The Human Element.*

The film, which has been approved by the UK's Maritime & Coastguard Agency (MCA), offers an insight into the role of human behaviour in safety at sea.

The Human Element has been developed jointly with Pukka Films, from a book, published in 2010 by the MCA; it takes the concepts of the book and presents them in a more concise manner, making them easy for the seafarer to put to practical use, Walport claimed.

The film is also claimed to be unique in that takes a holistic approach to safety. Walport Training Producer, Chris Young explained: "The premise of the film encompasses the idea that safety is not in the poster on the wall, or in the safety handbook. Instead, it is a living thing that emerges moment by moment from our collective behaviour."

The film has been produced in conjunction with the MCA, The Standard Club, BP and Teekay and both the film and its comprehensive facilitators' notes aim to create greater operational mindfulness, thereby allowing safety, rather than danger, to emerge from human behaviour.

Walport said that this new concept in safety training films is suitable for crew members and shore staff at all levels.

Walport Maritime Training Films from Headland Media provides fleets around the world with a range of maritime safety training films to support the regular on board seafarer training.

The brand started life in the 1950s, sending movies to crew around the world. However, by the 1990s, the company had identified a requirement for safety training videos that were competitively priced, easily understood by any nationality and, equally important, that were interesting.

In 2008, Walport International was acquired by Headland Media, which has provided services to ships since 1984 and is an international media company that provides news, sport, entertainment and training content to the shipping industry, as well as other sectors. TO

MLC 2006- don't get caught out

MLC 2006 is nearly upon us. As a result there are several initiatives on the market to help seafarers and ship operators/managers alike cope with this piece of legislation.

For example, the ITF has launched a new generation of free apps, including one to help seafarers and charterers support and build on the fair employment provisions of MLC 2006.

A second app helps seafarers find a trade union and their nearest ITF inspector, while the organisation's charity arm, the ITF Seafarers' Trust, is offering an app to put users in touch with the nearest seafarers' centre.

ITF acting general secretary Steve Cotton explained: "The Look up a Ship app for the first time allows seafarers to easily find out about a ship before embarking on it and allows charterers to check that a ship has an ITF agreement in place before proceeding with a charter. The Look up an Inspector app offers immediate sources of help and advice, while its Seafarers' Trust sister app Shore Leave does the same for seafarers' centres and missions.

"These new tools put key information in the hands of users with just a few clicks. They reflect the opportunities offered by new technologies, the real advances that the Maritime Labour Convention offers and the changing needs of those working at sea," he said.

Look up a Ship has been developed to provide seafarers and charterers with the ability to look at basic information about the vessel they are sailing on, intend to sail on or are considering chartering. It will show:

- Ship name .
- IMO number.
- Ship's flag.
- Whether or not an ITF agreement is in place on the ship.

Where an ITF agreement exists or has existed, the application will show:

- The status of the agreement.
- When the agreement starts and ends.
- Who the agreement is signed by (company and union).

It will also show the latest:

- Crew list summary (date, number and nationality).
- ITF Inspection details (visit date, port and country).

Look up an Inspector informs seafarers where they can obtain assistance from an ITF inspector or Union. Each entry lists the country, port, inspector's name and contact details including:

- Mobile and office telephone numbers.
- Fax number.
- Email address.

Also included is the telephone number of the ITF sponsored 'SeafarerHelp' helpline, which provides a 24 hour a day, seven days a week service (Toll Free: 00 800 7323 2737; Direct dial: 020 73232737; Send text to: 076 24 818 405).

> "These new tools put key information in the hands of user with just a few clicks"

MLC – Food and catering addressed

Earlier this year, the Singapore Maritime and Port Authority (MPA) issued a circular reminding owners, operators, cooks and Masters of requirements of MLC 2006 pertaining to the training of cooks and the provision of food on ships.

MLC Standard A3.2 contains the following mandatory requirements on food and catering that shipowners must ensure on board their ships:

(a) Food and drinking water supplies, having regard to the number of seafarers on board, their religious requirements and cultural practices as they pertain to food, and the duration and nature of voyage shall be suitable in respect of quantity, nutritional value, quality and variety;

(b) The organisation and equipment of the catering department, shall be such as to permit the provision to seafarers of adequate, varied and nutritious meals prepared and served in hygienic conditions;

(c) Catering staff shall be properly trained or instructed for their positions.

Shipowners shall also ensure that their seafarers are provided with food and drinking water free of charge during the period of engagement.

Companies are recommended to check the qualifications of crew who are currently working as ship's cooks, or trainee cooks. They are strongly recommended to arrange for each cook to attend courses to comply with the MLC requirements and obtain certificates before the August 2013 deadline.

> "Shipowners/operators/managers are also recommended to undertake promotional activities to educate ships' Masters and crew on nutrition, health, hygiene, storage of food and related activities."

Shipowners/operators/managers are also recommended to undertake promotional activities to educate ships' Masters and crew on nutrition, health, hygiene, storage of food and related activities.

Companies may use relevant material from Singapore's Health Promotion Board, the IMO, the World Health Organisation (WHO), or ILO, to help. A relevant publication is the WHO Guide to Ship Sanitation (3rd edition), which contains information and detailed guidance on the areas of food, water and catering, the MPA advised. TO

Report highlights differences between perception and reality

The latest 'Maritime Employment Report' published by specialist recruiter, Faststream, placed a sharp focus on the gap that exists between perception and reality across the industry.

Not surprisingly, seafarers seeking a shore career tend to focus on the traditional and more accessible roles, such as superintendents, fleet managers and harbour masters.

They perceive the more remote professions of law, or insurance to be out of their reach despite a large proportion of their shore based colleagues stating the importance of having a seafarer in the office.

The report also revealed the gap between perceived and achievable starting salaries for seafarers coming ashore after 10-15 years. Almost all underestimated how much they would be paid if they moved ashore to a related maritime role.

Elsewhere in the report, shore-based respondents were asked to comment on where future opportunities would lie and what they thought the pay differences were between regions.

Interestingly, those in Europe and the US believed that they earned more than their Asian counterparts when the reality is somewhat different. Workers in the US and in Asia were largely happy with their earnings, while those in Europe were more disgruntled with their pay.

Other key findings from the report were:

- 69% of all respondents would follow the same career path again, if given a second chance – but only half of deck officers would.
- 92% of shoreside workers think it is at least 'quite important' to have ex seafarers in the office, while 35% say it is vital.
- Engineering officers think it is much easier to get a job ashore that deck officers do.
- The least attractive shoreside professions to seafarers are in the legal, insurance and shipbroking sectors.
- 37% of maritime professionals think that Southeast Asia offers the best career opportunities over the next 10 years.

Commenting on the results, Faststream Group CEO Mark Charman said: "The maritime industry is complex for employees and employers alike and there are some surprising similarities and differences to be found in each region and each business sector

"This ground-breaking report has thrown up some remarkable findings that will help employers better understand the employment landscape and plan their recruitment campaigns more effectively. There is a fine line between perception and reality and this report helps us understand some of the more obscure factors that influence the career choice of our potential employees," he said.

Over 2,000 shore and sea staff responded to this global survey and further perception-based reports will be published later in the year. TO

A seafarers lot is not a happy one

The Seafarers Research Institute Centre (SIRC) at Cardiff University has reported that life at sea is a stressful environment for seafarers with bleak conditions, a lack of comfort, and poor living space.

Maritime recruitment agency Spinnaker has reviewed the report in its newsletter and said that it was interesting to look at its findings when the Maritime Labour Convention (MLC) will be coming in force this August.

The seafarers interviewed said that working conditions were unsatisfactory, there was too much noise and disruption within their cabins and that the little job security from contract work caused even more pressure. The report covered mostly seafarers serving on drybulk, cargo vessels and tankers and the research showed some enlightening results, Spinnaker said.

Some 61% of seafarers interviewed said they had no access to the internet while on board ships, making communication to loved ones limited. There were also notably poorer communications facilities for those Chinese seafarers interviewed.

"This is such disappointing news for us to hear; we know how important good communication is while at sea," Spinnaker said.

Most of the seafarers were satisfied with the size of their cabins, but many could not block out natural light during rest times and had restricted views from their cabins.

"It's something to ponder on; why are over half of these seafarers complaining about a lack of recreational facilities on board? It seems like a staggering result that over 72% reported work-related stress and even more worrying that 42% complained about a lack of training. It'll be really interesting to see how another survey like this comes back after the MLC comes into play," Spinnaker concluded. TO

ECDIS centres ramp up operations

The huge effort to get the thousands navigators trained on type specific ECDIS equipment goes on. Here we highlight two company's initiatives.

UK based ECDIS training and consultancy company ECDIS Ltd has launched a new on board familiarisation course specifically for Kelvin Hughes' MantaDigital widescreen software.

Kelvin Hughes' latest ECDIS software has been on the market since 2012 and as a result, ECDIS Ltd has now produced its own training solution, which meets the requirement of the ISM code and Safety Management System training requirements.

John Ritchie, ECDIS Course Manager at ECDIS Ltd, said, "Kelvin Hughes are constantly evolving, and a particularly strong example of this is the new MantaDigital Widescreen software. We are delighted to be their international independent training partner and will continue to match the development of their ECDIS software with the highest standard of professional courses."

Natalie Robson, Marketing Manager at ECDIS Ltd, added, "It has been a real pleasure getting to know another ECDIS system, allowing us to provide a realistic and balanced training course for the mariner. The MantaDigital Widescreen has taken a fresh approach to ECDIS bearing little resemblance to the previous versions, highlighting the need for mariners to be trained in each system."

Meanwhile, FURUNO has established training facilities in India and the Philippines through close co-operation with the newly established Moloobhoy Training Centre in Mumbai and the Veritas and Compass training centres in the Philippines.

The three training centres have started to provide the two-day FURUNO type specific ECDIS training course under the NavSkills umbrella having their instructors trained in Denmark and under the subsequent on-site training syllabus provided by FURUNO INS Training Centre also located in Denmark.

This means that the two training centres offer the identical training to the training provided

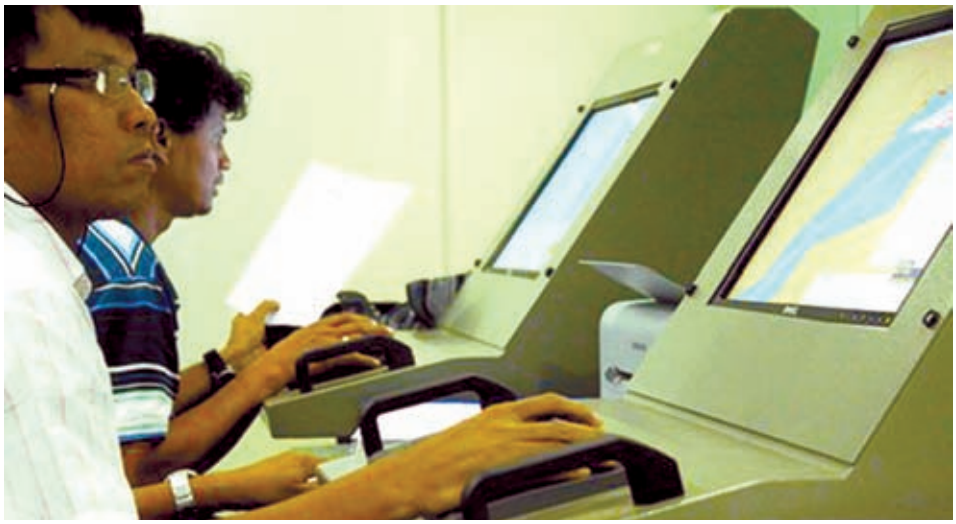
from FURUNO's own training centres in Denmark and Singapore, as well as other NavSkills training centres already established.

"It is a good step forward in providing type specific ECDIS training locally in Asia and by adding these three major hubs to our training network we are able to service our good customers even better," said managing director Yutaka Wada, head of FURUNO's training organisation. "We look forward to this new co-operation and we rest assure that our customers will experience many advantages out of it."

AS Moloobhoy has been FURUNO's national distributor in India for several years with offices in Mumbai, Chennai, Kolkata and many other places in India. The company has been servicing the maritime industry in India for more than 100 years and has now established the first training centre in its Mumbai headquarters.

This training centre can accommodate up to six navigators per training course and the centre is providing the training on real FURUNO equipment, which allows for a better familiarisation. The FURUNO type specific ECDIS training course is approved by ClassNK.

Compass Training Centre is located in Manila and has been providing training to the maritime industry for two years. This centre was carefully selected by FURUNO as a partner to provide type specific ECDIS training based on its experience as a training provider and its high standards in training services, which fully met FURUNO's criteria to become an accredited training provider. Compass has a wide range of training courses.



FURUNO has expanded its ECDIS type specifc training outreach.

The other Manila-based training centre, Veritas Maritime Training Center, has also joined the FURUNO NavSkills network.

Since December 2012, Veritas MTC has provided FURUNO type specific ECDIS training to navigators under the NavSkills training contract.

Under the NavSkills agreement Veritas MTC will accommodate a total of six training workstations: Four ECDIS FEA-2107 workstations and two next generation, state-of-the-art FMD-3200 workstations with three training instructors certified by FURUNO to conduct FURUNO type specific ECDIS training.

This training centre is a part of Epsilon Hellas (Overseas) and was established in January 2012. The company is engaged in providing training to Philippine shipboard personnel on seagoing vessels.

More specifically, the training centre is committed to provide quality training programmes, facilities, instructors and other necessary resources that will ensure skill advancement of maritime professionals, FURUNO said.

Under the NavSkills contract, the training centre is able to provide modern, state-of-the-art training equipment with constantly updated learning content and software to comply with current training standards and regulations.

The type specific ECDIS training is provided in accordance with the standard set by FURUNO, which is in compliance with currently known requirements from various flag states and other stakeholders.

The NavSkills training concept ensures that the training course is conducted in the same way, with the same content and duration and using the same teaching methods as employed by FURUNO in its own training centres in Denmark and Singapore. This way a shipowner can use any accredited NavSkills training centre without having to worry about the quality of the training provided, the company claimed.

FURUNO believes that the best results are derived from classroom training provided by training centres where the trainees have the opportunity of having direct two-way communication with the instructor, who can guide and advise them on the various topics.

With the addition of these new NavSkills training facilities, FURUNO is able to provide type specific ECDIS training in Germany, Turkey, Greece, Singapore, India, The Philippines, China and Denmark.

In addition, FURUNO is currently working on further expanding the training network by establishing similar co-operations with training centres in the US, Europe, Africa and Asia. TO

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Polar Code - where are we now?

Much has been written about the impending Polar Code, not least in *Tanker Operator* and the *Ice Class Tanker Report*, published last year.

Similar to many projects run by committees, the introduction of the Polar Code has slipped back to at least 2014, if not beyond.

It was originally due out last year having been approved as a new agenda for IMO's MSC 86 meeting in May 2009, based on proposals put forward by Denmark, Norway and the US.

This article is based on a presentation given by the Norwegian Maritime Authority at the 13th meeting of the International Ice Charting Working Group held last year, which gives a succinct roundup of the position thus far..

In 2009, the Guidelines for ships operating in Polar Waters was adopted and was recommended for use from 1st January, 2011. By this time, it had been agreed that the IMO sub-committee on ship design and equipment (DE) would co-ordinate the work of putting together the Code.

Thus far, the Code's draft contents include a preamble, general regulations (application, definitions, certification), Part A - mandatory requirements and Part B – additional guidance.

Part A will contain the main thrust of the Code with 15 chapters dedicated to:-

- Chapter 1 - Polar water operational manual.
- Chapter 2 - Structural integrity and deck machinery.
- Chapter 3 - Stability and sub-division.
- Chapter 4 - Watertight and weathertight integrity.
- Chapter 5 – Machinery.
- Chapter 6 - Accommodation and escape measures.
- Chapter 7 - Fire safety/protection.
- Chapter 8 - Life saving appliances and arrangements.
- Chapter 9 – Navigation.
- Chapter 10 – Communications.
- Chapter 11 - Alternative design.
- Chapter 12 - Operational requirements.
- Chapter 13 - Manning, qualification and training.
- Chapter 14 - Emergency control.
- Chapter 15 - Environmental protection.

At the DE 56 meeting held between 30th January and 2nd February last year a work plan was developed. It was generally agreed on the contents goal and functional requirements of the various chapters.

Chapters that needed referral to other committees were identified and questions and guidance for those committees were formulated. A 'work explanation' was developed pertaining to the concept of the categories.

It was decided to defer the discussions regarding the environmental chapter (15) to DE 57, which was due to be held during the middle of March this year, after *Tanker Operator* had gone to press.

The work plan for the DE correspondence group to further develop in 2012-2013 included the introduction and Chapters 1, 2, 5, 6, 11, 12 and 14. Other committees became involved in Chapters 3 and 4 (SLF), 7 (FP), 9 (NAV), 10 (COMSAR), and 13 (STW).

At DE 57, the working group will further develop the Code incorporating the feedback from the other committees. This year and next, the DE correspondence group will finalise the Code's content.

In 2014, at DE 58, the drafting group will finalise the Code's text for referral to MSC and MEPC for their approval and subsequent adoption.

Three categories

As mentioned before, vessels operating in Polar Waters will be split into three categories.

Category A – A vessel with ice strengthening in accordance with the IACS Unified Requirements for Polar class vessels, or an acceptable alternative. The vessel will operate with due caution in severe ice conditions.

Mild winter hits earnings

According to Gibson Research, there are 523 Ice Class tankers above 25,000 dwt including 18 chemical carriers.

As for this winter's weather, which can affect charter rates, the ice season was poor for owners in the Baltic during February.

Despite an increase in Aframax cargoes, as Primorsk emerged from its maintenance schedule, the market remained unshaken, as the numbers of ice class tankers in the area outweighed demand.

Even though a slight surge at the end of February gave some hope to owners, the monthly average rate from the Baltic remained at its lowest since November 2012.

There have been no delays and no premiums paid for fixtures out of this area. This market is very much dominated by ST Shipping and Vitol who control most of the Aframax tonnage in the region, Gibson explained.

For the Handysize range, if there was a premium to be had, this would have been around WS10-15 points above the 'non-ice' rate.

Turning to the cost of a newbuildings, this would normally be greater than a non-ice class tanker in terms of the extra steel and machinery needed.

However, today no one is ordering ice class tonnage, due to the earnings required to recover the purchase price, operating costs, etc.

According to Gibson's records, Scorpio currently have six Ice Class 1A 38,000 dwt on order at Hyundai Mipo, all for delivery in 2014.

These are new orders and not newbuilding resales and they are the only vessels in this size range with ice class on the orderbook, Gibson confirmed. ■

Category B – A vessel with the same level of ice strengthening as a Category A ship. It will operate with due caution in first year ice conditions and will avoid structurally dangerous types and concentrations of ice.

Category C – A vessel with no ice strengthening. It will operate with due caution in only very thin, or new, ice and will avoid structurally dangerous ice.

A standard SOLAS vessel may operate in Polar Waters that are ice free with no special measures taken, only subject to the vessel's ability to check and confirm on a regular basis that no ice is present along its intended route and that it is not subjected to extreme environmental conditions that will compromise the functionality of its safety equipment.

There were three options open to the IMO's legal division on how to make the Code mandatory- through SOLAS, MARPOL and SOLAS and via a new convention.

In February 2012, MEPC 62 decided to use the MARPOl and SOLAS option.

In the Code's development, there were a few challenges thrown up.

These included geographical limitations, opinions on additional risks possibly leading to additional requirements, the mitigation of these risks (including the level of details), the need for additional environmental protection measures and how to implement them, which requirements shall apply to existing vessels, ice strengthening requirements/thresholds, a sailing permit system in addition to certification and opinions on time and progress to expedite the Code in a thorough manner.

The IMO's NAV sub-committee was asked to look at Chapter 9 of the draft proposal to identify certain risks and also to introduce any other risk that had been omitted. This was primarily in the scope of: -

Gilles Longueve and Mike Lacey seen at the IMO (see page 32).

1) A higher probability of occurrence of hull damage due to floating ice in ice-infested waters;
2) A higher probability of occurrence of grounding in coastal waters, due to limited hydrography, lack of navigation aids and other navigational issues;
3) A higher probability of occurrence topside icing, due to low temperatures and strong winds; and
4) Unique hazards associated with potential lack of functionality of certain equipment in high latitudes.

These were coupled with potentially more severe consequences, due to remoteness and the associated problems of emergency response and search and rescue operations.

NAV was further requested to comment on the additional consequences of adopting the measures that could adversely affect their cost/benefit.

In Chapter 9.2, the functional requirements were laid down.

1) Systems for providing reference headings and position fixing shall be suitable for the intended areas.
2) The navigational equipment and systems shall be designed, constructed, and installed to remain operational considering the operational limitations of the ship.
3) Appropriate level of redundancy shall be provided for the navigation equipment and systems.

Exerts from Chapter 9.3 were given as an example for navigation purposes in ice -

Chapter 9.3.1 it was stated that all ships shall be fitted with Class A automatic identification system (AIS).

Chapter 9.3.2 – All ships shall have access to ice information.

Chapter 9.3.3 - Ships, as appropriate, shall be equipped with means for ice detection.

Chapter 9.3.4 says that the following equipment shall [as a minimum] be installed on board, as follows:

A) Equipment capable of receiving and displaying ice imagery;
(Note: SOLAS chapter IV requires reception of weather information, including ice warnings, but this information is only available as text and is not displayed as charted information).

B) At least one radar should be fitted on board with an enhanced ice detection capability.

“‘Salvage-friendly’ is a phrase describing a vessel, which with permanently installed on board solutions to help stop leakages from tanks, keeping the pollutants inside the ship and facilitating the recovery and evacuation of these pollutants by salvors.”

Salvage friendly

ISU salvage expert Mike Lacey and Maritime Passive Safety Association President Gilles Longuève unveiled a ‘salvage-friendly’ ship to the IMO in March.

The session took place during IMO’s 57th Design & Equipment sub-committee meeting, which was discussing the Polar Code, among other issues.

‘Salvage-friendly’ is a phrase describing a vessel, which with permanently installed on board solutions to help stop leakages from tanks, keeping the pollutants inside the ship and facilitating the recovery and evacuation of these pollutants by salvors.

Inclusion of ‘salvage-friendly’ measures is proposed in the latest round of talks regarding the Polar Code, which is due to be finalised by next year to help ensure safety of shipping in the Arctic and Antarctic areas.

Lacey, the former ISU general secretary and senior salvage advisor, pointed out the issues faced by the salvors when dealing with post-accident situations. He emphasised the growing need for ships to be prepared for salvage operations, especially in the most remote Polar Regions where salvage capabilities are virtually non-existent and the time ultimately needed to mobilise appropriate resources.

He said: “Ships have become more complex in terms of their design and layout. What is needed are systems that will come into play when there is a casualty to minimise the risk of an escape of pollutants. Systems, which will simplify access to bunker, or cargo tanks and will enable the rapid transfer of bunkers and/or oil cargoes and systems, which will reduce the inherent risks associated with any transfer of pollutants in a casualty situation.

“Vessels trading to the Polar Regions should therefore be fitted with equipment that will provide an element of ‘self-help’ and will go towards making such ships ‘salvage-friendly’. The passive safety systems will undoubtedly assist salvors in minimising the consequences of the casualty,” he said.

Gilles Longuève, president of the Maritime Passive Safety Association provided further details on the existing solutions, permanently installed on board ships, which eventually respond to the needs of the salvors.

“Certified solutions exist,” he explained; “They include leak preventers, DO venting valves, magnetic patches and fast oil recovery systems. They all have the same purpose: if we manage to extend the time period before oil gets in the waters and enable a smoother and faster salvage operation, then half the battle is won. These solutions have been developed with the salvors. While they can’t eradicate all oil spills, they ensure they are not a fatality anymore.”

Incorporating a cluster of suppliers, the Maritime Passive Safety Association does not advocates for a specific technology but rather provides information about the existing solutions, which respond to the challenges expressed by the salvors. Its mission is to make sure ships are prepared for salvage operations in case an incident, or an accident occurs.

The concept of ‘salvage-friendly’ was discussed by the Polar Code Correspondence Group members, as it is included in the Chapter 14 draft on ‘Emergency control’. TO

** The DE 57 meeting was due to be held as Tanker Operator went to press.*

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2015 is fast approaching

The average price of 380 cst this year to date (22nd March) hovered around $635 per tonne. The impact of bunker fuels on vessel operational costs is substantial and has caused considerable damage to shipowner's profitability, said Gibson Research in a recent report.

However, with even tougher regulations and emission targets on the way, how will these changes affect the shipping industry?

As seaborne trade continues to grow, shipping plays a larger part in adding to the world's so called 'greenhouse gases'. Following political pressure to further reduce emissions from shipping, new sulphur requirements within MARPOL Annex VI will be implemented on 1st January 2015.

Permissible sulphur levels in bunker fuel will be capped at 0.1%, from the current maximum off 1% within existing Emission Control Areas (ECAs).

Bunker prices have fluctuated more than two fold in the last five years.

Although the European bunker market handled previous reductions in sulphur limits much better than expected, a common view is that the same cannot be envisaged in 2015; the UK Chamber of Shipping has said "….shipping needs more time to prepare [before the 2015 cap]", adding that neither time nor sufficient technology is currently available to support the changes.

The shift in 2015 will mean most ships will use marine gas oil (MGO) while operating in ECAs, instead of heavy fuel oil. The premium of MGO over 1% 380 cst low sulphur fuel oil currently stands at around 40% in Rotterdam.

Although the price of this fuel is hard to project to 2015, it is expected that supply may not grow as quickly as demand and will therefore command an even higher premium during the initial stages after the 2015 deadline, Gibson warned.

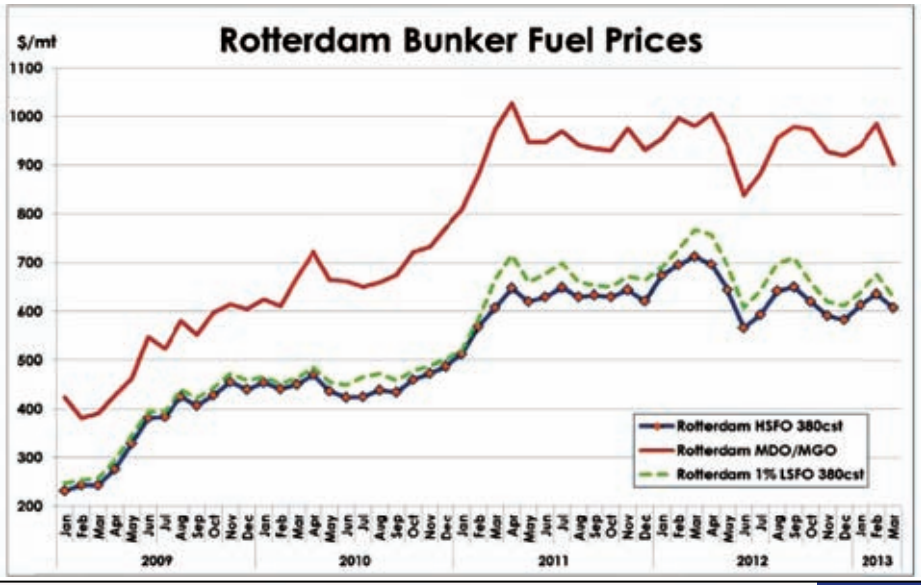
The increase in products available for export from the US could offer the solution to lacking supplies, but the country itself will need more MGO to meet its own new ECA requirements. As various countries in the world compete for global supplies of sub 0.1% sulphur fuels, this could provide a boost for the MR tanker market.

Next hurdle

The next major issue is the proposed IMO legislation to supply all bunkers to less than 0.5% sulphur content, due to be introduced globally in 2020. Lack of investment in Europe's refining sector suggests it is highly unlikely there will be sufficient availability of low sulphur fuel oil to meet this requirement.

The use of new technologies - like scrubbers and LNG as the main fuel for propulsion - to meet the strict sulphur regulations may offer shipowners an alternative, but the shipping community needs to push the development of such technologies to capitalise on their potential and make them a commercially viable solution.

While there is huge uncertainty surrounding the scale of impact the new fuel regulations will have on the shipping industry, it appears the only certainty is that this issue is not going to go away anytime soon, Gibson concluded. TO



Gulf of Mexico expansion

Last month, OW Bunker introduced the company's second bunker supply vessel in the Gulf of Mexico.

The 2002-built double-hulled *Wappen von Hamburg* has been deployed in the Gulf of Mexico since March.

The 8,182 dwt vessel, managed by Wappen Reederei, has been taken on a long-term timecharter. The vessel and its operators are claimed to be highly experienced in offshore bunker supply.

She is equipped with dedicated tanks to provide complete segregation of low sulphur fuel oil (LSFO), heavy fuel oil (HFO) and marine gas oil (MGO) is able to supply all vessel classes, including tankers, gas carriers, as well as offshore service and supply vessels.

"The introduction of *Wappen von Hamburg* provides us with the ability to provide all our customers, no matter what their vessel type, with a comprehensive offshore fuel supply solution," said Adrian Tolson, regional manager, physical operation, OW Bunker.

"In conjunction with our other vessel *Elisalex Schulte*, we now have the most modern vessel with the fastest pumping rates, as well as the most versatile and the most experienced vessel operating in the region. Combining service excellence with the assurity of quality products on the best terms and at the best prices is a powerful proposition for our customers who are looking at every opportunity to take costs out of their supply chain. This is where we can really help them."

OW Bunker has chartered in a sophisticated product tanker for bunker duties.

Wappen von Hamburg joins the larger 2011-built BSM-managed 16,427 dwt *Elisalex Schulte*, operating in international waters off both the Texas and Louisiana coastlines for the bunker supplier and trader.

Tolson concluded; "Our specialist offshore service means that customers can avoid costly deviations and port calls to other bunkering locations. In particular, *Wappen von Hamburg's* versatility in being able to supply all vessel types, specifically bulkers that are so prevalent in the region, will make a real difference to improving efficiencies and optimising fuel supply for our customers." TO

Fuel management system unveiled

US-based W&O Engineered Solutions has introduced FuelProof, which is claimed to be an advanced purpose-built vessel fuel accountability and management system.

It was designed to provide owners and operators with a new and highly innovative means to accurately measure, record, report and display the fuel consumption and fuel efficiency of vessels' diesel engines.

It is based on proven measurement, automation and software technologies in a format that is configurable and completely scalable to meet any customer's needs, from single-bunker barge measurement to fleet-fuel consumption-and-emissions optimisation, the company claimed.

Using precision stainless-steel coriolis flow meters that compensate for temperature, pulsation and other factors, the system measures fuel consumption and stores a large amount of data in a user-friendly, dedicated bridge or engine room system that can be emailed ashore.

The system has been designed for all types of commercial vessels, including tankers.

The system's features include:

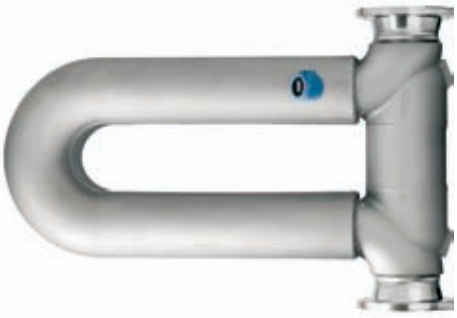
- Customisable configuration for each vessel.
- Real-time bridge display of fuel consumption and efficiency parameters.
- Optimisation of fuel usage for any given weather or sea conditions.
- Logging of fuel consumption and efficiency data for analysis.
- Stainless-steel flow meter construction with fail-open geometry for uncompromised vessel safety.
- Excellent speed of response.
- Repeatability of ± 0.05%.
- Temperature-compensated fuel-flow meter measurement accuracy better than ± 0.25%.

It provides a monitoring package that allows vessel- and shore-based personnel to measure the effectiveness of fuel-saving strategies through precise time-tagged trending and position-tagged displays.

The data recorded can be integrated into scheduled engine maintenance, record air emissions statistics and used to create ISO 14000 records, which all vessels are required to maintain.

The measurement technology has been designed, manufactured, and supported by Emerson Micromotion, a W&O partner and a global supplier of flow measurement applications in petrochemical, commercial and custody transfer.

W&O said that the system will work with all types of gas, oils, and heavy fuels, as well as LNG. A sister product, FuelProof Fusion, is used on vessels fitted with diesel engines, such as that found on smaller vessels. The flow meters on the smaller system are sized for main engines between 1,000 hp and 5,000 hp and for diesel generators of 750 kW to 3,730 kW.

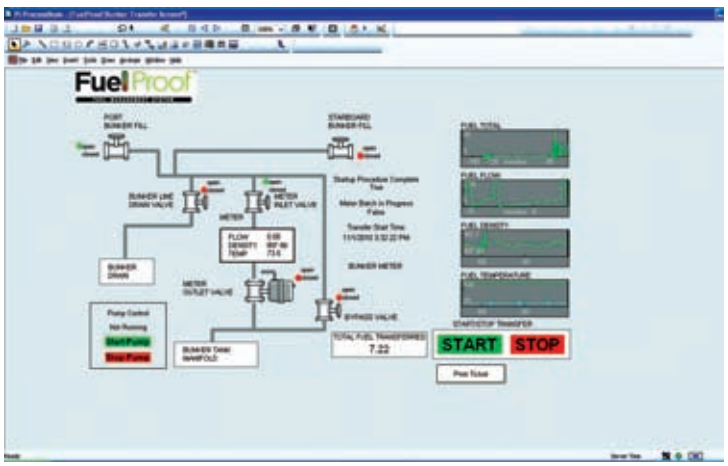


Bunker meter.

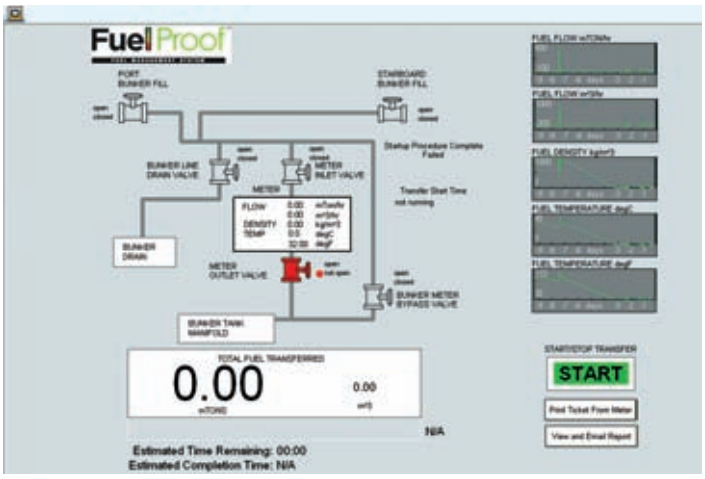
The measurements are based on mass and not volume. The company said that new sensors can easily be added to the system in order to comply with new regulations and IMO requirements. These could include emissions and other measurement instruments.

Data can be transferred to shore using the ships normal lines of ship- to-office communications, such as an Internet connection, satellite, email, etc.

W&O said that it did not have plans to create a complete voyage package. However, the FuelProof system can be easily integrated into weather routeing types of voyage packages to provide real time data. TO



Transfer screen.



Completed screen.

V-Marine Fuels formed

As a result of Vitol's recent acquisition of 50% of the Cockett Group, the trading and physical supply activities have been separated.

With effect from 1st March 2013, all physical activities now operate as V-Marine Fuels.

The former physical activities, Associated Bunkeroil Contractors (ABC) and Cockett Marine Oil Supplies (CMOS) were absorbed into the new division. This move provided V-Marine Fuels the autonomy to expand its current footprint and range of physical supply services globally, the company said.

V-Marine Fuels said that it will capitalise on the strength of its parent companies Vitol & Grindrod. The company plans to develop and strengthen its positions in the Rotterdam and UK/English Channel markets.

As part of its expansion drive, V-Marine Fuels has entered the US bunker market, commencing physical operations in Houston and the nearby ports of Texas City and Galveston, including Bolivar Roads on 1st March, 2013.

V-Marine Fuels sources product from Vitol, claimed to be the world's largest independent energy trader, offering a complete range of ISO 8217-2010 marine fuels.

One barge is operated thus far, capable of delivering low and high sulphur fuels and the company will have access to additional barges to meet customer's demands as necessary.

The new US venture is managed by Steve Leonard, supported by a very experienced team, the company said. TO

Maersk's search for alternative fuels

Shipping has not thus far benefited from the research and development that has turned biomass into one of the world's most important sources of renewable energy.

Two projects involving Maersk aim to change that, the giant group claimed.

With an annual fuel bill of $7 bill for vessel operations, the Maersk Group said that it must continually consider ways to reduce its bunker fuel consumption. Greater efficiency is the primary way of achieving this; alternative fuels are another.

Two current projects are focused on realising the marine fuel potential of one of the world's most abundant and sustainable biomass resources - lignin.

> "Two current projects are focused on realising the marine fuel potential of one of the world's most abundant and sustainable biomass resources - lignin."

In nature, lignin is a complex organic polymer found in plants. The more lignin there is in wood, the sturdier and stronger it is and the more efficiently it burns. But lignin is also released in large quantities as a residue during the production process of paper, as well as advanced bio-ethanol.

"Lignin has a variety of industrial uses already because of its chemical characteristics, energy content and its abundance; yet its potential as a marine diesel fuel is a relatively uncharted area," said Peter Normark Sørensen, with Maersk Oil Trading, the Maersk Group's oil buying arm.

In February, Maersk signed a memorandum of understanding (MOU) with Progression Industry - a spin-off company of Eindhoven University of Technology - to develop a viable marine fuel from lignin that meets stringent parameters on price, technical performance, sustainability and emissions.

Biomass

A separate project called 'Biomass for the 21st Century' is co-funded by the Danish National Advanced Technology Foundation and involves Maersk , DONG Energy and several other companies and academic institutions.

Professor Claus Felby at the University of Copenhagen is leading the project, which is also looking at lignin as a potential marine fuel, as well as other sustainable sources of biofuel with consideration for logistics and scale production challenges.

A detailed report released in September outlined the scope of the project.

"If either of these projects is able to make a biofuel that meets our requirements that would be very exciting and could let the industry and markets focus on the challenges that would follow—the scale and logistics required to make it a commercial alternative," said Normark.

The agreement signed between Maersk and Progression Industry states that if Progression can produce a lignin based fuel that meets Maersk's criteria then the group will buy 50,000 tonnes of this fuel.

"For the past 75 years, the shipping companies have used oil, but looking at the next 75 years this is likely to change. In the longer term, oil is simply going to run out, so we need to start looking for alternatives," said Jacob Sterling, head of environment and CSR at Maersk Line. "The great thing about biofuels is that they would not only secure a future fuel supply, they will also greatly reduce our CO2 and SOx emissions."

TO

Inatech up in the clouds

Inatech, the global cloud-enabled software and IT service company, has launched Ship^{TECH} shipping solution for the cloud.

This solution offers shipping companies a 'game-changing' real-time management solution that will help them enhance their fuel procurement process, reduce fuel costs and effectively manage risk, the company claimed.

The cloud version is easy to integrate (and scale) with other standard shipping and bunkering technology management systems. It enables shipping companies to move away from making old fashioned capital expenditure investments in technology towards adopting an operational expenditure model, the company said.

Ship^{TECH} is claimed to be a feature-rich, cost-efficient, integrated solution designed specifically to address the bunker procurement needs of modern shipping companies.

Developed to integrate easily with third party applications, it provides sophisticated analytical and reporting tools and efficient workflows and processes for key functions, including bunker procurement, claims management, trading and risk management.

Bunker procurement is central to shipping operations, as the industry spends over $180 bill in fuel costs per year, which represents up to 60% of the total cost of shipping companies' operations. Moreover fuel price volatility has a direct impact on the total cost of a ship's voyage and large fleets spend several billion dollars a year on bunker buying. So the opportunity to save a fraction of one per cent by implementing the Ship^{TECH} solution can add millions of dollars directly to their bottom line, Inatech said.

In the absence of an end to end, integrated software system, shipping companies can face a number of issues, such as - vessels bunkering in ports where fuel prices are high even though alternative ports are holding lower prices; under utilisation of vessel capacity; late receipt by traders for bunker requests to procure fuel; bunkering more fuel than required for the round trip.

Ship^{TECH} is designed to help shipping companies avoid these costly errors by providing a fully integrated cloud-based software solution capable of efficiently handling key processes and providing decision support via real-time data and analysis tools.

Jean-Herve Jenn, Inatech CEO said; "The global economic crisis has caused the shipping sector to undergo 'change' unlike any other it has experienced in recent years. Last year the sector reported flat revenues and this year it is going to get even worse because the market is going to remain flat at best and the pressure to reduce costs is going to increase.

"As a consequence of this the industry has been forced to consider how it can increase profits through monitoring its costs. Controlling emissions and dealing with changes in the sulphur regulations relating to fuel procurement, as well as increases in fuel costs of both low and high sulphur grades, are all responsible for the increased pressure on profitability.

"Therefore, to solve these challenges, more efficient procurement methods will become absolutely vital for shipping companies if they want to maintain profitability," he concluded. TO

Complete package for MARPOL Annex V offered

Finnish-based water and waste water management system supplier EVAC claims to offer a complete solution to the new MARPOL requirements.

Having equipped around 12,000 vessels with equipment, including waste and sanitary systems, EVAC said that it can provide a single source for all on board waste management systems.

On 1st January 2013, new requirements relating to the management of waste from ships entered into force. All waste on board, except food waste, has to be collected, or incinerated, according to the new IMO MARPOL Annex V regulations.

This requires storage space for waste on board. In case there is not enough space, compactors and other waste handling systems have to be acquired. Incinerators can be used, but not in all areas. For example, their use is forbidden in the Baltic.

In short, the revisions to MARPOL Annex V as contained in resolution MEPC.201(62) prohibit the discharge of all garbage into the sea, except as expressly permitted under specified circumstances for discharge of food waters, cargo residues, deck wash waters and animal carcasses.

Every ship of 100 gt and above and every ship certified to carry 15 persons, or more, shall carry a garbage management plan, which needs to be brought into compliance with this resolution with a designated person to be in charge.

In addition, every ship of 400 gt and above and every ship certified to carry 15 persons, or more engaged in voyages to ports, or offshore terminals under the jurisdiction of another party to MARPOL and every fixed, or floating platform, must carry a garbage record book.

Also posters to notify the crew on the discharge requirements are to be installed on ships of 12 m, or more in length and on fixed floating platforms.

This means that discharge at sea of most ship-generated garbage is now prohibited. Raw food waste can be discharged when not comminuted, or ground outside a 'special area' when more than 12 miles from nearest land and when comminuted and ground to less than 25 mm when more than three miles from nearest land. Inside a 'special area' discharge is possible if more than 12 miles from nearest land and when ground to less than 25 mm.

It is recommended that whenever practicable ships use, as a primary means, port reception facilities. To minimise the generation of waste, provisioning practices should be reviewed with ship's suppliers in order to determine the optimum packaging for the products.

Options include:

- Reusable packaging and use of containers. Disposable cups, utensils, dishes, towels and rags and other convenience items should be limited and replaced by washable items when possible.
- Where practical options exist, provisions packaged in or made of materials other than disposable plastic should be selected to replenish ship's supplies unless a reusable plastic alternative is available.
- Stowage systems and methods that reuse coverings, dunnage, shoring, lining and packing materials.
- Dunnage, lining and packaging materials generated in port during cargo activities should be disposed of at the port reception facilities as discharge into the sea is not permitted.
- Discharge of cargo hold cleaning agents and additives classified as being harmful to the marine environment contained in hold wash water is prohibited.

Discharge

Discharge into the sea has been strictly limited under Annex V and discharge of garbage to port reception facilities is the primary solution. Table 1 summarises the requirements for garbage permitted to be discharged into the sea.

Food waste collection

Outside 'special areas', ships operating primarily beyond three miles from the nearest land are encouraged to install and use comminuters to grind food wastes to a particle size capable of passing through a screen with openings no larger than 25 mm. Such a process is recommended even beyond 12 miles because the particle size hastens assimilation into the marine environment.

When operating inside a 'special area', all food wastes must be comminuted or ground prior to discharge in to the sea. All discharges are to be as far as practicable and not less than 12 miles from the nearest land, or ice-shelf.

To support the MARPOL Annex, EVAC has launched what it calls the EVAC food waste collection system. The company can now supply the entire waste handling system for vessels, covering both dry and wet waste, from food waste handling to on board sanitary and wastewater treatment systems.

EVAC can provide a complete food waste handling and processing system, designed to handle waste from small to mid-size vessels. The system is claimed to be ideal for commercial vessels.

The use of macerators, comminuters, shredders compactors, incinerators and other devices for shipboard garbage processing equipment makes it possible to reduce shipboard space requirements for storing garbage for discharge in ports. EVAC said that its range of waste management products provides a convenient solution.

EVAC's food waste handling and processing systems are based on vacuum conveying technology allowing segregated conveying of the food waste generated on board. The entirely closed system is completely automatic.

It conveys food waste by pipe transportation into a cyclone, which feeds the food waste to a water extracting station, where water is removed from the waste. The vacuum system is generated through a two stage patent pending pump process, one pump for air and one pump for liquid.

This generates and guarantees a stronger and more reliable vacuum, a big advantage in avoiding unwanted blockages in the piping, the company said. The footprint of the EVAC vacuum pump unit and holding tank is claimed to be small and the water and energy consumption is low.

Although some of the equipment listed may not be suitable for the tanker sector, it is worth listing what is available using the schematic below.

1) Infeed stations with macerator

Food waste in-feed stations are freestanding. Manufactured entirely of stainless steel they come with all necessary fittings housed in a suitable framework. The hopper is connected to the vacuum collecting system and welded to

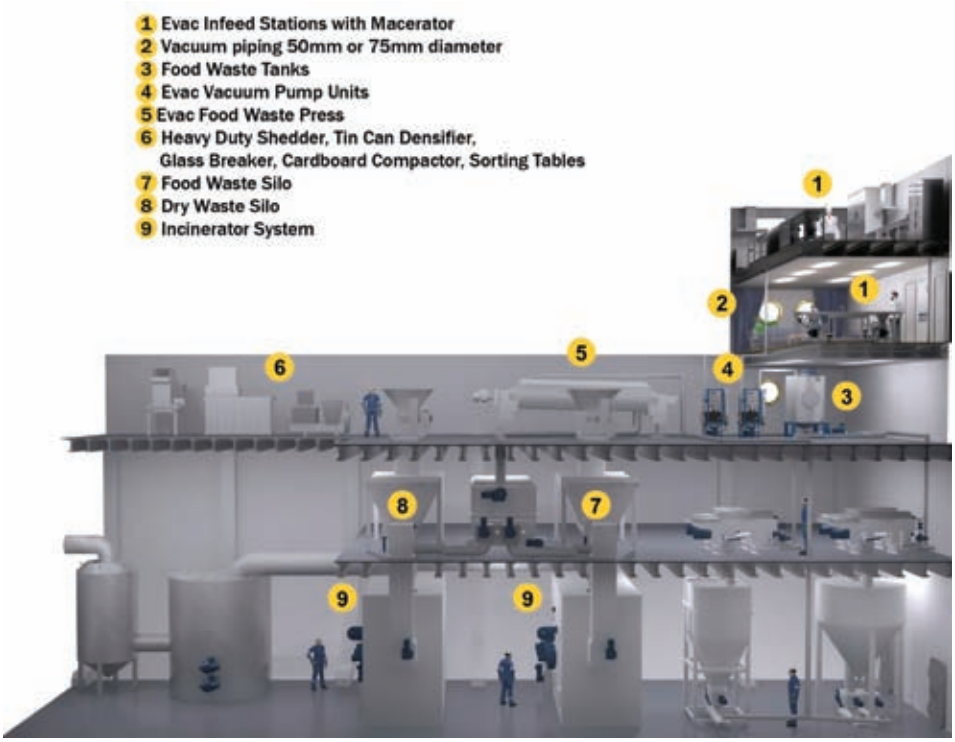


Table 1. For the full text of the respective discharge requirements please refer to the text of the revised MARPOL Annex V, and for more detailed guidance please consult the 2012 Guidelines for the Implementation of MARPOL Annex V (resolution MEPC.219(63).
1 These substances must not be harmful to the marine environment.
2 According to regulation 6.1.2 of MARPOL Annex V, the discharge shall only be allowed if: (a) both the port of departure and the next port of destination are within the special area and the ship will not transit outside the special area between these ports (regulation 6.1.2.2); and (b) if no adequate reception facilities are available at those ports (regulation 6.1.2.3). (Source: EVAC, IMO)

the tabletop. The tabletop is equipped with a drain sieve and an overflow to limit the amount of free flowing water in the collecting system. Cleaning nozzles are installed on each hopper. The unit connects to the vacuum pipeline using a DN125 quick clamp connection. It can be isolated for maintenance.

2) Vacuum piping

The system is designed for two different pipe diameters 50 mm and 75 mm depending on the demand and the holding tank capacity.

3-4) Food waste tanks, vacuum generation

Vacuum is generated by a vacuum pump unit. It is measured by a sensor transmitter in the unit and controlled by an automation logic system. The vacuum is created in the pipeline prior to the vacuum conveying, when a discharge is requested at a feeding station. When a vacuum of 250 mbars is reached, the feeding station opens a gate valve and the food waste is conveyed all the way to the food waste tank.

Benefits of this system include a powerful vacuum that will not lead to any piping blockages. Also the piping can be run more flexibly than in other systems. The collecting tank (3) can be sized according to space and holding capacity need. The tank is equipped with a mixing unit.

5) EVAC food waste press

The average dry solids content of the shredded and collected waste is around 5-7%. Before it is suitable for disposal at the incinerator, it must reach a final DS of about 20%. To achieve this condition, the food waste (FW) is fed into a screw type dewatering unit, which squeezes the liquid out of the FW to separate the excess water from the food waste.

6) Heavy duty shredder, tin can densifier, glass breaker, cardboard compactor, sorting tables

Compactors reduce the volume of garbage. Typically the output from the compactor is a block of material which facilitates the shipboard storage of garbage and its discharging of the material in a port facility.

EVAC can provide a complete range of heavy duty shredders, tin can densifiers, glass breakers and cardboard compactors as well as sorting tables.

7- 9) Food and dry waste silos, EVAC incinerators

Incineration conducted in a shipboard incinerator significantly reduces the need to store garbage on board the ship. Shipboard incinerators are designed, constructed, operated and maintained in accordance with the IMO Standard Specification for Shipboard Incinerators (IMO Resolution MEPC.76(40) as amended).

EVAC's incinerator is a furnace designed for burning dry waste, wet waste, sludge oil and most kinds of solid waste. Combustion takes place in a semi-pyrolytic process with the addition of combustion air in order to achieve smoke-free combustion. The shredded burnable waste is fed by gravity into the incinerator feeding chamber.

Complete packages

The company's waste management solutions, including all the above components, come in a complete package making installation simple and efficient. It provides the shipyard and shipowner with a reliable and integrated solution with low installation and operational costs, EVAC claimed.

The Company also offers automation systems for the management and control of the waste water process on board. These are available for all types of ships. TO

Lasting protection against cavitation and corrosion

If a rudder is not given the proper protection against cavitation and the resulting erosion and corrosion damage, the financial consequences can be substantial for the owner*.

Cavitation is a fluid dynamics phenomenon where tiny bubbles are created in the water and then collapse forcefully on the metal surfaces of the ship. This is caused by the movement of the propeller blades. The effect is comparable to a steel tipped hammer that is repeatedly hit against a steel surface at exactly the same location; after a while damage will occur.

Due to their position just behind the propellers, rudders are particularly prone to cavitation forces and damage. The cavities created by the cavitation will then grow deeper and deeper and in the end can eat right through the rudder (or other affected areas). Besides the mechanical damage caused directly by the cavitation process, it immediately opens the door for corrosion damage.

What needs to be done is either prevent the cavitation, or make sure that it has no damaging effect. Efforts to prevent cavitation through design changes to ships have had some effect but have not solved the problem. This leaves proper protection, as the workable avenue.

For example, the Ecospeed glass-reinforced ship hull coating has been found to provide a very thorough and lasting protection against cavitation and corrosion, the company claimed. The coating provides the rudder with an impenetrable protective layer while its flexibility enables absorption of the forces that are produced by cavitation, thereby preventing the damage normally caused by this phenomenon. If the cavitation cannot pierce the coating then no erosion of the steel can occur and no corrosion can follow.

Tests conducted in a flow channel have confirmed that Ecospeed performs extremely well under severe cavitation. These tests were divided into six stages during which the coating was exposed to an increasing pressure drop, creating a growing cavitation force. Even after the last stage no erosion was present on the test patch coated with Ecospeed. The tests were organised by the French Ministry of Defense and were carried out in Grenoble.

Strict procedures

When a vessel comes into drydock, the maintenance of its stern area, especially cavitation damage repair, can take a long time. There are strict procedures concerning blasting, painting, welding and propeller and stern tube seal work. This makes it impossible to carry out most of the repairs that need to be done in these areas simultaneously. Painting is then usually assigned to the end of the schedule. As a consequence it may not get done at all, or else prolongs the stay in drydock. Taking into account the tight drydock schedule of most vessels, this is often problematic.

With an Ecospeed application these problems can be avoided from day one because no full repaint of the underwater hull will be needed during drydocking and that includes the rudder, the company claimed. The coating will remain intact for the lifetime of the vessel and is guaranteed for 10 years. At most, touch-ups amounting to less than 1% of the surface area will be required.

The newbuild phase is the perfect time to apply Ecospeed, however, the coating can also be used to protect vessels that have been in service for some time and are already facing cavitation and corrosion damage.

The company said that Ecospeed's flexibility makes it easy to adapt the application schedule to the rest of the activities scheduled at the shipyard, or drydock, in a way which does not interfere with the schedules. Overcoating time can be as short as three hours, which means that for smaller surfaces, such as rudders, or bow thrusters, the two coats required can usually be applied in one day.

A large number of rudders have now been coated with Ecospeed with 100% success, the company said. In all cases where Ecospeed has been standardly applied, the rudders suffered no cavitation damage and did not need to be recoated. TO

"When a vessel comes into drydock, the maintenance of its stern area, especially cavitation damage repair, can take a long time ....taking into account the tight drydock schedule of most vessels, this is often problematic."

**This article was supplied by Belgian hull protection concern Ecospeed.*

Alfa Laval targets tanker sector

Alfa Laval has launched its third generation chemical-free system for ballast water treatment- PureBallast 3.0.

PureBallast, whose core technology was developed in co-operation with Wallenius Water, was originally launched in 2006, as the world's very first commercially available ballast water treatment system.

Since then it has been enhanced, evolving into an updated PureBallast 2.0 version with EX options for tankers in 2010.

"This time we've completely rewritten the book when it comes to PureBallast," said Per Warg, Alfa Laval's business manager responsible for the system. "We've achieved space savings of 50%, energy savings of up to 60% and huge improvements in flexibility and flow capacity. But we've also learned a great deal that can be of impact for ballast water treatment in general."

PureBallast 3.0's development began almost immediately after the release of its predecessor, with Alfa Laval returning to the drawing board in early 2011. Jonas Alván, product development manager for PureBallast, pointed out that this was really a new start for the system. "The original construction had been streamlined as much as was possible, which meant we were forced to think in new ways to move forward."

The original concept had been decided upon at a time when no supplier knew what would be needed to pass the IMO tests. Not being a company to take risks with compliance, Alfa Laval had thus created PureBallast with a good margin of error in terms of biological efficiency.

Drawing on real experience from around 100 PureBallast systems commissioned and some 350 sold, it was possible to re-evaluate the design. So the development team set tough goals for the new system, especially when it came to energy efficiency.

Identifying potential parameters

The key component in a UV-based system like PureBallast is its reactor, the chamber where UV treatment actually occurs. So the development team asked itself one fundamental question: What factors determine the effectiveness of a UV reactor to be used with seawater at a high flow rate?

The latter part of that question was critical, according to Alván. "The UV treatment of seawater is a very different process from the UV treatment of drinking water on land," he explained. "In drinking water applications, which many ballast water treatment systems are adapted from, the process is continuous and targets weak bacteria in pre-cleaned and well-regulated water. In ballast water treatment, the process is intermittent and involves a lot of standstill with saline water in the reactor. Plus the organisms targeted are hardier and more varied."

At sea, continuous treatment is not practically feasible. Neither is increasing residence time in the reactor, since ballasting and de-ballasting have to occur quickly. Adding stronger UV lamps, or increasing the lamp number can increase biological efficiency, but only at the expense of energy efficiency. So the team was left with two main reactor parameters that could be adjusted: flow patterns and internal distances.

Developing the new reactor "One of the things we were looking for was greater turbulence, which would help to compensate for low UV transmittance," Alván said, referring to the distance UV light travels in water. "With more fluid mixing, the chance of an organism passing close to the UV lamps – and thereby the biological efficiency – increases."

In addition, the team sought to make the reactor's internal passages smaller, which would more or less force the organisms to pass near a lamp.

Again, the difference between land-based and marine UV treatment was important. As Alván said "Finding an acceptable balance of parameters is easier in a drinking water application, where clear and consistent water provides high UV transmittance. But the varying UV transmittance of ballast water, along with the need to minimise power consumption, makes it a more complex challenge to find an ideal reactor design."

That design was finally found with the help of a unique CFD (computational fluid dynamics) model, which Alfa Laval developed around a well-established model for standard UV treatment. In the new model, light sources were introduced into the equation, making it possible to see the UV dose for each of 50,000 theoretical particles (organisms) passing

The control cabinet can be fitted up to 150 m away from the system.

PureBallast 3.0 1,000 cu m per hour capacity system.

through the reactor.

"In our visualisations, we assigned each particle a colour according to the UV dose incurred," Alván explained. "By optimising the reactor design for a uniform colour among exiting paths, we could ensure the most even UV dose possible. And that gave us the reactor design with the least possible energy consumption. The end result is startling."

Looking at CIP

Of course, the reactor was not the only focus of the PureBallast 3.0 development project, the company said. Another component re-evaluated was PureBallast's CIP (cleaning-in-place) unit, which cleans the UV lamp sleeves between treatments by circulating a non-toxic, low-pH fluid. In this case, however, the unit was left unchanged.

"A lot of suppliers leave out CIP as a way to save space and cost," said Alván. To evaluate the consequences of doing so, the team performed its own tests, allowing PureBallast to run for many cycles without performing CIP. "As it turns out, CIP was even more important than we expected," he said.

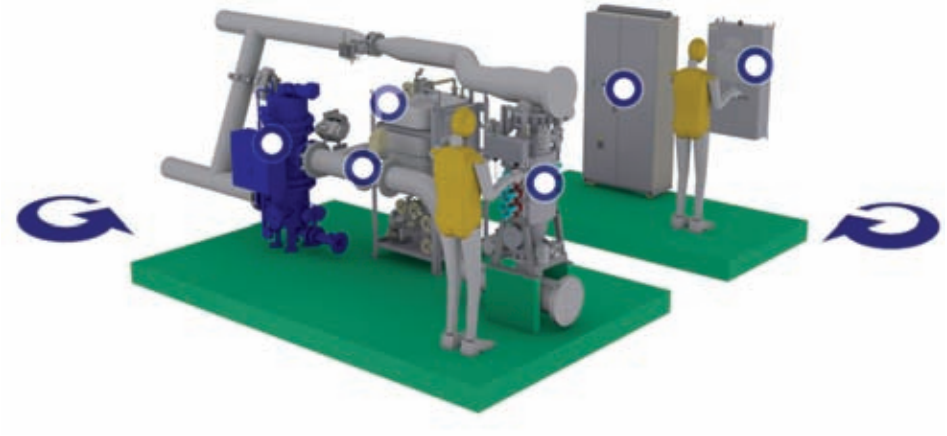
The reason is the build-up of calcium chlorides and metal ions on the UV lamp sleeves, which occurs not only in PureBallast, but in all UV treatment involving seawater. This build-up degrades the sleeves' UV transmittance, which greatly lowers the biological effect.

"We saw clear value in performing CIP to retain full equipment performance after ballasting or deballasting," Alván said "Mechanical wipers remove calcium chlorides but not metal ions and both wipers and manual cleaning will eventually cause performance-reducing scratches on the quartz glass. CIP is the most gentle and effective means available to keep performance at type-approved levels."

The completed PureBallast 3.0 system, while based on the same treatment technology as its predecessors, is claimed to be a remarkable imnprovement in terms of its compactness, energy efficiency and flexibility.

Most striking at a first glance is its size. Where previous PureBallast reactors handled 250 cu m per hour each, individual PureBallast 3.0 reactors can handle either 300 cu m per hour, or 1,000 cu m per hour. Using the larger reactor, which is not much bigger than the original 250 cu m per hour version, the footprint of a 1,000 cu m per hour system is literally cut in half - the bigger the system, the bigger the space savings, Alfa Laval said.

"Needless to say, the new reactor capacities greatly reduce the footprint of larger systems," said Warg. "With one reactor doing the same job that four did before, PureBallast 3.0 is competitive across the entire flow range up to 6,000 cu m per hour."



A schematic of the complete system.

Energy savings

The size, however, is not the only thing that makes PureBallast 3.0 competitive, the company said in a recent presentation. The new system is also as energy efficient, as it is compact.

"The new 1,000 cu m per hour reactors consume just 100 kW at full power, which is a minimum energy savings of 30% over previous versions," Warg said. "And when full power isn't needed, the energy savings can be as much as 60%."

Warg was referring to the new dimming function in PureBallast 3.0, which lowers the system's power consumption in clearer waters with good UV transmittance. In such conditions, less energy is needed to neutralise the organisms present. "PureBallast 3.0 has a dimming capacity of 50% and handles the dimming process automatically," he explained. "The system will operate with some level of dimming in the majority of circumstances, providing up to 60% energy savings over previous versions in fully dimmed mode."

For shipyards, the most appealing aspect of PureBallast 3.0 will not be its energy-efficient operation, but rather its high degree of flexibility and ease of installation – even when it comes to the highest flow rates. With the new reactor capacities, only one reactor will be needed per 1,000 cu m per hour, which makes designing a system considerably simpler.

"When individual reactors can handle a greater amount of ballast water, there are fewer reactors and lamp drive cabinets to install," said Warg. "That means not only less installation time, but also easier and more economical installation, since it does away with a considerable amount of pipework."

When it comes to the lamp drive cabinets, there is an additional bit of flexibility. Whereas reactors and cabinets were attached in previous versions of PureBallast, the cabinets can now be placed anywhere up to 150 m away.

"The free placement of lamp drive cabinets within 150 m simplifies the design of EX systems, since the power supply is easy to place outside the hazardous zone," said Warg. "But it's of benefit to everyone, since it can save space in the engine room where it's needed most."

"Alfa Laval has always been at the forefront of ballast water treatment, but PureBallast 3.0 truly redefines that leadership. We're looking not just at a new generation of the system, but rather at a whole new standard that lives up to the tougher demands raised by today's customers," he said.

Warg told *Tanker Operator* that due to space in a large vessel's engine room, such as a VLCC and due to the fact that the cabinet can be located up to 150 m away from the system, vessels with ballast pumping capacities of 6,000 cu m per hour can easily be catered for by installing more than one system to suit the vessel's needs. "The whole system becomes a simplified EX configuration. Six units can be installed in a VLCC's machinery space with a very small footprint," he said.

Due to the space on board a large tanker, the lamp drive and cabinet can be installed away from the systems with ease for EX proof configurations, he said.

The new system is currently undergoing tests on the Wallenius Wilhelmsen operated PCTC *Turandot*. The Norwegian Administration type approval is expected during the fourth quarter of this year and land tests are underway at DHI in Denmark. Alfa Laval hopes to be one of the first companies to receive the more stringent US Coast Guard type approval in the beginning of 2014.

The company said that it hoped to ramp up its tanker market sales with the introduction of the third PureBallast system. TO

MIBS VLCC gets class approval

ClassNK has granted an AIP (Approval in Principle) to the MIBS (Minimal Ballast Water Ship) VLCC design developed by Namura Shipbuilding in co-operation with the Shipbuilding Research Centre of Japan.

Although the IMO's Ballast Water Management Convention has yet to enter into force, installation of ballast water treatment systems are already presenting owners with both financial and technical challenges.

Namura's new MIBS VLCC design, is claimed to be able to address the challenges through the use of a revolutionary new hull form, which greatly reduces the amount of ballast water necessary for safe operations.

The MIBS design reduces the weight of ballast water required in normal ballast conditions by around 65%, paving the way for the use of smaller ballast water treatment systems and reducing fuel consumption.

This new design builds on a previous Non-Ballast Water Ship (NOBS) design project promoted by the Japan Ship Technology Research Association as part of a Japanese national project under the initiative of Ministry of Land, Infrastructure and Transport and supported by Japan Railway Construction, Transport and Technology Agency and The Nippon Foundation. It was further developed by Mitsubishi Heavy Industries, IHI Marine United (now Japan Marine United), Shipbuilding Research Centre of Japan and ClassNK.

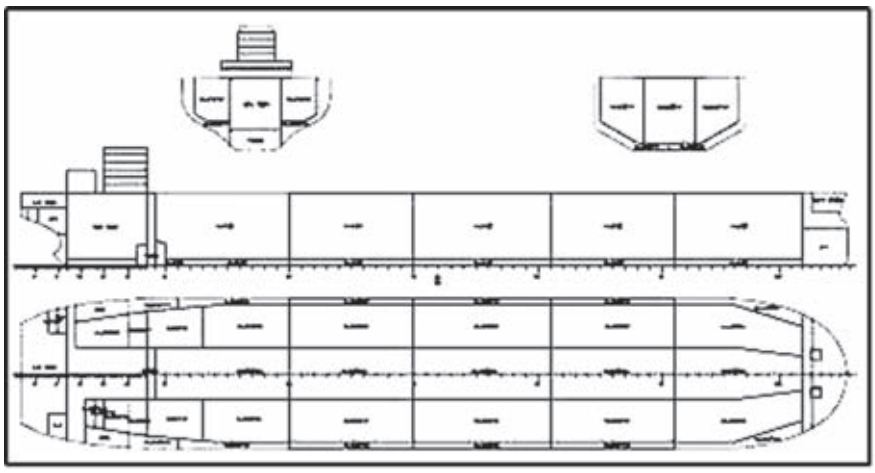
While the NOBS project succeeded in creating tanker designs, which could operate without the need for ballast water, the extremely wide hull shape limited its commercial applications.

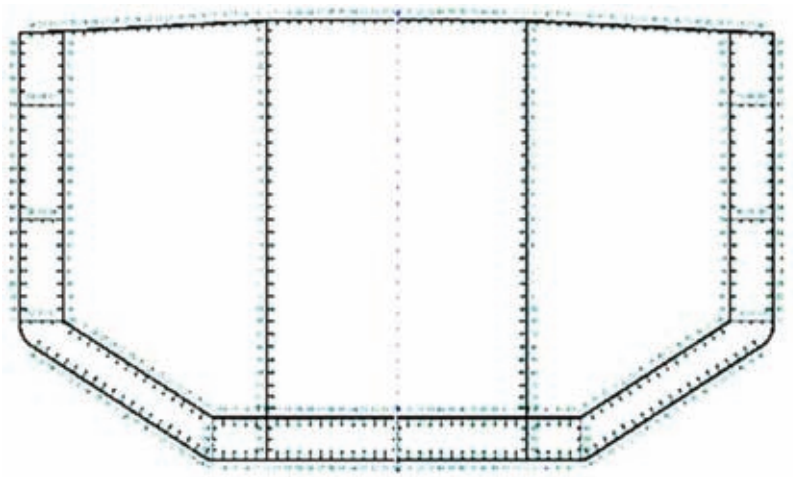
The MIBS design, however, incorporates features from NOBS with a flatter bottom and standard breadth hull. This allows for a dramatic reduction in the amount of ballast water needed, while maintaining the dimensions of a standard VLCC.

ClassNK chairman and president Noboru Ueda said: "Ballast water management is a major challenge for the maritime industry, and that is why ClassNK is constantly working with the industry to find new practical solutions, such as the use of 3D scanners for BWMS retrofits, as well as BWMS containerisation.

"Namura Shipbuilding's new MIBS design offers shipowners another new practical solution. One that not only represents a massive technological leap in terms of ship design, but will also help reduce ballast water management costs for shipowners. MIBS is truly an impressive technical achievement," he said. An AIP is an essential step in the process of bringing novel concept designs into practical use. As part of the AIP process, ClassNK carried out a thorough review of the MIBS plans and verified the results of numerous performance tests.

The AIP certifies that the revolutionary hull design satisfies all international requirements for hull strength and safety, the same as more traditional tanker hull designs. TO





Principal Particulars – MIBS VLCC

Length, oa	324 m
Beam	60 m
Depth	30 m
Draft	21.50 m
Deadweigh	abt 300,300 t
Ballast water weight in normal ballast conditions	30,000 t

Reusable lube filters – the future

Reusable oil filter technology cuts costs, meets EPA and IMO regulations, claims US-based Filtration Technology Group (FTG)*.

With ship fleets facing spiraling fuel prices and new tougher environmental regulations from the EPA and IMO, fleet managers have had to look for new technology to control costs and emissions.

One of the most promising areas to considerably cut spending while meeting all EPA and IMO regulations is reducing maintenance costs and waste production/disposal with reusable lubrication filter technology.

Traditional disposable filters have an important disadvantage: high replacement, disposal, inventory, and environmental cost. At every oil change, oil filters must be replaced, the old filters disposed of and the spare filters inventoried in a space-restricted marine setting. All lubricant and air filters must also be regularly replaced, with disposal and inventory significantly adding to maintenance costs.

In a ship, there can be many engines fitted: not just propulsion engines, but diesel engines on large ships that run generators and pumps on a 24/7 basis. All of these engines use filters and replacement costs can spiral exponentially - as can disposal costs. While some managers try to stretch the time each filter can last, failing to replace them when needed can hurt performance, horsepower, fuel mileage and engine life. With fleets of ships, these costs can add up and over 10 years can reach hundreds of thousands of dollars.

A growing number of fleets are discovering that innovative, reusable filter technology can really cut the cost and complexity of filter maintenance.

Instead of a traditional, disposable filter media enclosed in a metal canister that ends up in a landfill, FTG, a California-based manufacturer of custom lubrication filters and a global supplier of quality filters and fittings, offers full-flow, cleanable, reusable filters that are designed to last the life of the engine, or beyond.

Any engine size

These filters are applicable to all engines regardless of size, FTG said. They can be used with the main ship propulsion units, as well as the auxiliary engines fitted on board any vessel, including deepsea ships.

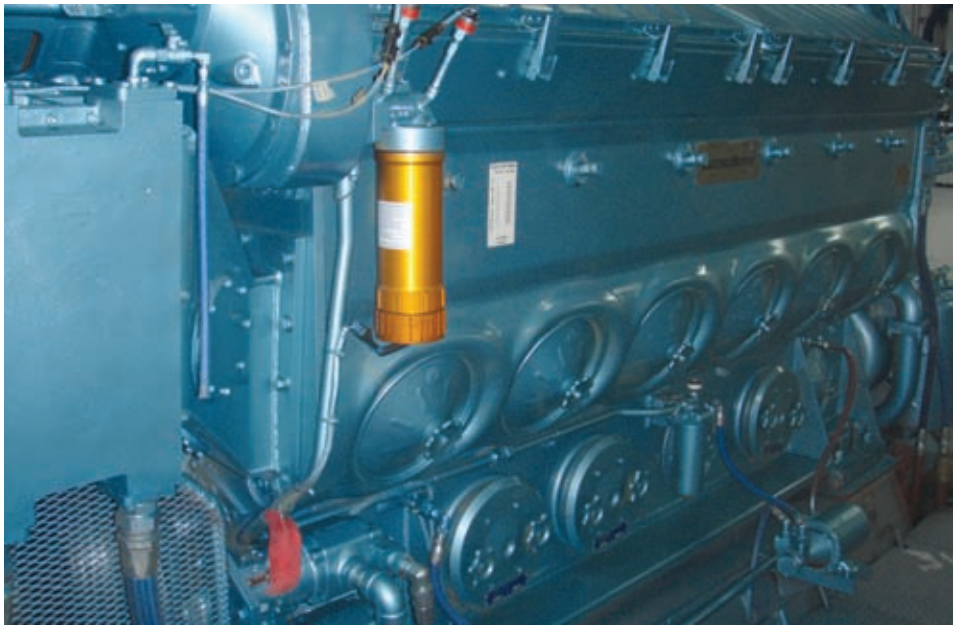
The reusable filters replace lube oil and other filters with a cleanable stainless steel wire cloth filter and are available in configurations that spin directly onto existing mounting heads, or in remote-mount models well-suited to space-constrained, below deck, marine applications.

The cleanable, reusable filter technology was first developed, tested, and manufactured by Parker Hannifin's Racor division almost a decade before they turned the technology over to FTG, a full-service Racor distributor, which has independently manufactured the technology for several years. Parker Hannifin Corp, a $13 bill, global company, is one of the world's leading diversified manufacturer of motion and control technologies and systems.

"The idea was to reduce the continual cost of filter replacement, waste disposal, and inventory," said David Cline, oil filtration product manager at Parker Hannifin Corp's-Racor Filtration division. "The cleanable, reusable filters reduce the waste stream by 100% because there are no longer any dirty oil filters to dispose of.

"The reusable filters are designed to last the life of the engine and beyond. In fact, after an engine has served its life, it's possible to remove the cleanable oil filter housing, screw it into the next marine application, and continue using the cleanable filter, if it's the same style engine. The filters are that permanent," he claimed.

For ships that depend on 24/7 engine and diesel generator reliability during voyages that can last for weeks, there's a further benefit from using the cleanable, reusable filters: greater self-reliance and simplified inventory. TO



High fuel prices, increasing emissions regulations and environmental concerns are driving fleets to cut expenses, emissions and waste disposal using new filter technology.

**This article was written by By Del Williams, a technical writer based in Torrance, California on behalf of FTG.*

IP launches two new coatings

International Paint (IP), a subsidiary of AkzoNobel, has launched two new coatings solutions.

Designed to address the industry issues of predictability in antifouling performance not seen since the days of tributyltin and the difficult issue of slime fouling on ships hulls, the two new technologies are set to improve vessel operating performance, increase efficiency and help control fuel costs and emissions.

The first of the two coatings is Intercept8000 LPP, which is a new biocidal linear polishing polymer antifouling featuring patented 'LUBYON' technology that delivers predictable long term performance for in-service periods up to 90 months

Second is Intersleek1100SR, which is claimed to be the industry's first biocide free fouling control coating featuring patented slime release technology that combats micro fouling on ships hulls, maintaining performance throughout the docking cycle

Based on advanced patented LUBYON polymer technology, Intercept8000 LPP, provides customers with consistent and predictable linear polishing. This will enable shipowners and operators to plan and budget effectively throughout the drydock cycle of the vessel, IP said.

The patented polymer technology gives the coating a 'superhydrophilic' surface. When the coating is immersed, the seawater has a lubricating effect, resulting in less friction. This reduces drag and increases vessel efficiency giving average fuel consumption and associated emissions savings of 5% annually compared to typical controlled depletion polymer antifoulings.

The coating surface also swells on contact with seawater, helping to smooth out imperfections and potentially further reducing drag.

LUBYON technology reacts with seawater via a constant surface active zone releasing only the optimum amount of biocide over the scheme life to control fouling settlement. Critically, this biocide release rate is largely unaffected by seawater temperature meaning Intercept8000 LPP has total trading flexibility and can operate across global routes and through all seasons.

Unlike typical silyl and metal acrylate antifoulings, Intercept8000 replicates the linear polishing of the shipping industry benchmark tributyltin based coatings meaning total predictability with the polishing rate remaining constant throughout the in service period.

Designed for the deepsea market for newbuildings and for maintenance and repair, the coating has been extensively monitored with in service performance validated on multiple vessel types including tankers and LNGCs representing over 4 mill dwt.

Among the tankers coated were units from Columbia Ship Management, Frontline, Stolt and Jo Tankers.

The longest test patch has been in service for 40 months, IP told *Tanker Operator.* The hull surveys were undertaken by dive inspection.

IP also said that if the system is applied properly and the specification is correctly designed for the vessel's operating profile, ie speed, activity and trading pattern, hull cleaning should not be necessary.

The Intercept system can also be applied over aged antifoulings and the coatings are claimed to be competitively priced in terms of sq m.

Intercept8000 applied on the hull of a 67,000 dwt LNG carrier.

Economic version

Also available is an economical version Intercept7000. Derived from the same polymer technology, Intercept7000 features all of the attributes of a typical mid-range biocidal antifouling product with the added benefit of linear polishing.

IP also launched Intersleek1100SR, claimed to be the shipping industry's first biocide free, fluoropolymer technology that tackles the market's age-old 'slime challenge'.

Slime, a complex, varied and dynamic organism, which begins to colonise surfaces, as soon as they enter the water, has been proven to have an adverse effect on the efficiency of all vessel types.

According to a recent formula produced by Michael Schultz, professor, department of Naval Architecture & Ocean Engineering, US Naval Academy, at today's bunker prices, the effects of slime potentially costs the shipping industry 44 mill extra tonnes of bunker fuel, or $28.6 bill in additional fuel costs and an extra 134 mill tonnes of CO2 emissions every year.

Designed for all commercial vessels, even when slow or ultra slow steaming, Intersleek1100SR slime release technology delivers outstanding macro and micro fouling control with good static resistance even in warm waters, IP said.

Slime that can build up during static periods is released by the movement of the vessel through water. This has been achieved by the new patented fluoropolymer in the coating, which has been developed by enhancing the slime resistant polymer groups used in earlier generations of Intersleek technology creating new surface chemistry that specifically resists the adhesion of slime.

The technology is the culmination of comprehensive research to understand slime growth. The development of the new polymer included a three-year fundamental research programme involving a multi-discipline team of marine biologists, hydrodynamicists and polymer scientists.

The team was supported by independent academic institutes, four years of laboratory testing and in service, full vessel performance data, from some of the world's leading shipowners and operators.

Paul Robbins, IP's marine marketing director, said: "Amid record high bunker fuel prices and lack of liquidity within the shipping industry, the economic importance of underwater hull condition cannot be understated. The launch of Intercept8000 LPP and Intersleek1100SR, demonstrates our commitment to providing customers with real choice and the broadest range of fouling control solutions that meet the specific needs of their vessels, fleets and operational preferences.

"It also highlights International Paint's mission to introduce new, often revolutionary innovations and market leading technologies that drive operational, cost and environmental efficiencies for our customers. Research, development and innovation underpin everything we do to provide the market with technology choice while also supporting our commitment to sustainability," he said.

Singapore headquarters

IP has also opened its new global marine coatings headquarters in Singapore, a move, which the company said recognises the increasing importance to the company of Asia/Pacific markets. It also underscores the significance of Singapore as a hub for the company's regional operations.

Speaking at an opening ceremony for the new headquarters, Oscar Wezenbeek, IP director said: "International Paint's a global leader in marine coatings and we have a proud reputation for supplying coatings based on innovative technology to some of the biggest names in world shipping and shipbuilding.

"We have a long history of service to the industry with our origins stretching back over 120 years to our founding on the banks of the river Tyne in Newcastle, England. Headquartering our business at this time in Singapore will further enhance our global position and will facilitate the development of growing markets in Asia/Pacific.

"With Singapore's owned tonnage being one of the highest in the world and with China, South Korea and Japan representing nearly 90% of the world's newbuilding capacity and China now leading in the number of drydocks and drydockings, Asia will be an increasingly important market for us in the future," he explained.

Located in the Tuas area of Singapore, the new headquarters shares its site with IP's marine coatings research centre and is the second stage in a development started in 2010 with the opening of the centre – part of a €20 mill R&D investment programme that has built a global network of marine R&D centres across Asia, Europe and America. TO

PSM addresses bilge level switches

PSM has launched what it calls a 'quick ship' service for urgent bilge level switch spares and repairs, when standard deliveries could result in unacceptable delays and costs.

The PSM BLS 9200 bilge level switch is designed, manufactured and approved to meet and exceed the requirements for severe service applications on all types of vessels, including tankers.

These switches are a safety critical component for the detection of liquid in dead spaces and voids that are rarely visited, or inspected by the crew. They need to withstand years of installation in difficult environmental conditions, yet operate immediately and reliably should a rising liquid level indicate a leakage, or flooding hazard.

When considering products, such as these, it would be easy to make economies by using cheaper devices, often constructed with poor quality materials and construction. PSM said that it has always argued that this approach comprises safety and is a false economy, as maintenance and replacement costs will always exceed those of installing a premium device first time.

More and more shipbuilders and repair yards have recognised the importance of this message and, in response to a surge in sales, PSM has added additional capacity at its UK factory to cope with customer demand.

"The products that are available within this programme will meet our customers' needs for urgent replacements," said Mark Jones, PSM sales director. "Rather than waiting seven to 10 working days for a replacement product, a new switch can be shipped from stock and on site in two or three days, minimising delay time and removing the need to fit inferior products."

Tank protection

In addition, PSM recently introduced what is claims is a simple and cost effective complete package, based on proven and approved equipment that fully meets the IMO's safety guidance for cargo tank overpressure protection, which comes into effect in July 2013.

Many of the major oil companies are now mandating that the vessels they charter conform strictly to the new IMO legislation, forcing shipowners and operators to upgrade their ships' tank safety systems accordingly.

PSM's ict 1000 pressure transmitters were designed to satisfy the safety stipulations of the SOLAS II regulations that originally came into force in July 1998. They also fully comply with IACS UI SC 140, effective from July 2013, the company said.

PSM's new bilge level switch.

PSM's new managing director John Bullivant.

These updated IMO regulations require that a secondary means of allowing full flow of vapour, air or inert gas in the cargo tank is provided in the event that the primary pressure relief valve arrangement fails. This ensures that the tank is operated within its design limits and is not mechanically damaged by over, or under pressure.

Alternatively, and more cost effectively, especially where a retrofit is required, the regulation allows that cargo hold pressure sensors may be fitted to each tank and their outputs routed to a monitoring system in the cargo control room. This will provide an alarm in the event of a cargo over, or under pressure condition.

The regulations are applicable to all vessels that transport flammable cargoes, or are additionally fitted with an inert gas blanket system, as part of the fire prevention system, which are typically crude oil, fuel and chemical tankers.

The PSM ict 1000 pressure transmitter is fully protected against positive, or negative overloads and submersion. It is available with a choice of flanged, or threaded fittings for installation directly to the tank top or piping into the venting system. They are type approved by many marine classification societies. They may also be used in hazardous areas when installed with appropriate PSM RFM safety barriers.

The PSM MTU display unit located in the cargo control room provides a monitoring station which provides an indication of normal, or alarm status for each tank, as well as the actual pressure.

TO

Management buy-In

PSM Instrumentation completed a management buy-in on 18th January, 2013 with the support of HSBC Bank Plc.

As a result, the company continues under the joint ownership of Geoff Taylor and Mark Jones. They will be joined by John Bullivant who was formerly CEO of the Sussex based flight simulation company SEOS, where he gained considerable experience leading an international systems business.

Going forward their respective roles will be: Geoff Taylor (chairman), John Bullivant (managing director) and Mark Jones (Sales Director).

Bullivant said; "With our combined experience and skills we are confident in our ability to lead PSM in its continued mission to become a leading supplier of control systems to the marine transportation industry.

"These are exciting times for PSM and this change will benefit customers, employees and suppliers alike, as we grow and develops the business for the future," he said.

ICS to publish eBooks

The International Chamber of Shipping (ICS) will be making its publications on best practices for shipping companies available as eBooks.

ICS will be using the eReader technology developed by Witherby Seamanship Group (WPG), which is now being widely used by many other bodies producing maritime publications, including the IMO.

All of the ICS publications to be made available as eBooks from April 2013 will continue to be published on behalf of chamber by Marisec Publications and will only be available from maritime booksellers.

The initial ICS publications to become available as eBooks will be the ICS Bridge Procedures Guide (4th edition), the ICS Guide to Helicopter/Ship Operations (4th edition) and the ICS/ISF Guidelines on the Application of the ISM Code (4th Edition). Other ICS publications will be made available when new, or revised, editions of print versions are published.

In electronic form, the books will be available as single user versions (with the same recommended retail price as the existing print editions) or as network versions whereby a customer will have access to five copies of the eBook for just twice the cost of the single user version.

ICS Director External Relations, Simon Bennett, explained: "As well as responding to the demand from shipping companies to produce ICS publications as eBooks, we believe that by using the proven WPG system it will be helpful to ship operators for our books to sit alongside IMO regulations, as well as useful advice produced by other maritime bodies, in electronic form."

The Law of Shipbuilding Contracts –Fourth Edition

Published by Taylor & Francis on behalf of Informa, this 450 page plus reference work was edited by solicitor Simon Curtis, partner Curtis, Davis Garrard.

Now in its fourth edition, published some 10 years after the third edition, this work was updated due to the ever changing shipbuilding industry – not least was the virtual collapse of world shipbuilding brought about by the financial crisis, which kicked in during 2008.

The period since 2008 has seen numerous shipowners try to re-negotiate original contracts and/or delivery dates with the result that there is now an enormous increase in vessel rejection and cancellation disputes.

More than 80% of the world's ships are built in the Asia/Pacific region and this situation will continue, as Chinese, South Korean and to a lesser extent Japanese shipbuilders look to design cheaper and more eco-friendly vessels, plus more sophisticated vessels for the offshore and gas sectors.

In parallel, there have been a number of developments in contractual terms on which export newbuilding projects are normally based. The widely used SAJ Form is now viewed by many to be heavily in favour of the shipbuilder. To counter this perceived bias, in 2007 BIMCO produced the NEWBUILDCON form of shipbuilding contract.

In addition, in October 2011, a new version of the standard Chinese shipbuilding contract was published by the China Maritime Arbitration Commission (CMAC) on the back of Chinese ascendancy in the world's top shipbuilding league. In parallel, the European forms have declined in use and importance.

In this edition, the author has continued to comment in detail on SAJ Form, but has also pointed out the contrasts with NEWBUILDCON and CMAC where they exist. Simon Curtis explained in his preface that English law continues to represent the most chosen path for large scale export newbuilding contracts and his book focuses on exclusively upon the interpretation of and application of English law principles in shipbuilding.

The last decade alone has seen a number of English judicial decisions handed down, which are of importance to the shipbuilding community, including, in particular, the application of non-marine construction law principles in complex disputes arising from a delay in vessel delivery.

Radar and AIS for Watchkeeping Officers

Published by Brown, Son & Ferguson and written by Master Mariner Daire Brunicardi, this 440-page illustrated book has been produced for the officer on a bridge of a modern vessel fitted with modern equipment.

Its emphasis is also on modern practices. Some mention is made of impending developments enabling the reader to prepare for new practices, or equipment. The author has written the book with the students at nautical schools and colleges in mind. These include all levels, from the cadet, or trainee, to those studying for a Master's certificate, or various nautical degrees, or other qualifications.

It is also meant to be a reference work, which can be carried at sea, as for example, the requirements of STCW and of the relevant IMO model courses are given prominence.

The author recognises the contribution of William Burger in the early days of radar training for commercial vessels, whose influence can still be seen and heard in lecturers' notes in nautical colleges today.

This book looks at the fundamental technology behind the bridge display, but does not take radar in isolation as today it is integrated with other navaids to a greater, or lesser extent. Several pages are devoted to radar plotting, as a ship's officer should be able to plot and determine the risk of collision when automation is not available. It also helps to build up an appreciation of relative motion, so when viewing an ARPA, the data looks to be correct.

Due to the many types of navaids on the market, a navigating officer must familiarise his or herself of the equipment on the bridge. This can take time and should not be undertaken while on watch, the author stressed.

This book is claimed by the publishers to be written in a simple format, bearing in mind that for many officers, English is not their first language. It is also aimed at a new entrant into the nautical profession and thus jargon and obscure acronyms have not been used, except for the traditional nautical terms.

The same publisher has produced a sixth version of its booklet- Pilot Ladder Safety- written by Malcolm Armstrong.

"Due to the many types of navaids on the market, a navigating officer must familiarise his or herself of the equipment on the bridge."

Browns Rule of the Road Manual

This is the 19th edition of this book since it was first published in 1928. Another work from Brown, Son & Ferguson, this manual was written by Extra Master HH Brown and revised and expanded upon by Master Mariner Saurabh Sachhdeva.

The latest version incorporates STCW 2010 Manila Amendments, new buoyage and marks, latest MCA deck officer oral syllabus and several IMO routeing measures and guidance notices for conduct of safe navigation.

The required knowledge of the rule of the road at sea can only be acquired by careful study and observation and this book has been prepared to provide a means to this end.

For many years, the various editions have served as a guide to the examinations for the various grades of certificates of competency conducted by the UK's Maritime and Coastguard Agency (MCA).

It is particularly suitable for study both at sea and ashore and the book's sequence has been arranged to suit that purpose. The diagrams, questions and answers will be found to be helpful and informative, the publishers' claim.

This book has been revised to include the updated COLREGS, including those annexed to IMO Resolution A910(22). The latest amendments came into force on 29th November 2003 as has the revised edition of the Maritime Buoyage System 2010, which have both been incorporated in the book.

Bunkers – An Analysis of the Technical and Environmental Issues

Written by Chris Fisher and Robin Meech, this is a fully revised edition of the reference work on bunkers, completely updated to reflect the latest technical, regulatory and environmental changes in the marine fuels sector.

The key fundamentals of bunkering, such as refining, basic fuel handling and treatment and test methods are fully discussed and there are comprehensive new sections on highly topical issues such as:

- Trading within Emission Control Areas.
- Bunker markets – a 20-year forecast, including product mix, volumes and geographical variations (of special interest to suppliers and producers).
- Current and future environmental legislation with commentary on compliance solutions (of key importance to buyers, shipowners and charterers).
- Fuel-related engine damage – explained through informative illustrations and diagrams.
- Abatement technologies – how they work, technical comparisons and expected uptake.
- Energy efficiency technologies.

Published by Petrospot, this fourth edition of Bunkers shifts the focus from the legal framework of buying and selling marine fuels and provides a clear and incisive analysis of the environmental and technical aspects of the industry.

It offers an in-depth discussion of fuel types, their availability and prices and how laboratories will analyse this changing mix. It also tackles complex issues such as price volatility, the global downturn in demand for shipped goods and the unprecedented increase in the world fleet.

This reference work will be of value to a wide audience, including marine engineering students, seagoing engineers, technical managers, members of the legal profession, insurers, shipowners and charterers, fuel suppliers, environmentalists, abatement and marine technologists and strategic planners, as well as those involved with surveying, inspection and the testing of marine fuels.

TANKEROperator

KEY PLAYERS IN THE TANKER INDUSTRY
will be profiled giving their views on current legislation, recommendations and trends. These will include chief executives from all sectors of the industry from equipment manufacturers to the top shipowners

INFORMATION
about meeting oil major requirements
(TMSA / vetting)

DEVELOPMENTS in management/ safety/ environmental best practice

NEW TECHNOLOGIES
and commercial industry developments

COMMERCIAL TANKER OPERATIONS
including shipbroking, legal matters and financing

IN DEPTH INFORMATION
on the latest newbuilds, sale and purchase, freight rates and derivatives markets, using industry known commentators

A STRONG FOCUS
on shipbuilding and repair

Photo credit – Hempel

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As maritime needs grow, ClassNK has solutions.

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

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