TANKEROperator

MARCH 2014

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Features:

- Fujairah expands storage
- Jones Act tankers
- Lessons to be learned
- ISO PAS 28007 examined
- IBC Code anomalies
- MRs and new engines

TOP 30 Listing

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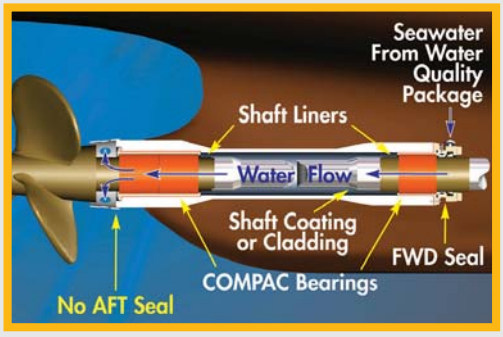

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Contents

Front cover

Last year, Bahrain shiprepairer ASRY handled its 4,000th vessel, an LPG carrier owned by Kuwait Oil Tanker Co (KOTC). The yard also played host to KOTC's VLCC Kazimah III, which is seen lying alongside the repair quay.

The VLCC entered the yard for routine drydocking, which involved a main engine overhaul, plus the installation of a gas monitoring system, while a study was carried out for the fitting of a ballast water treatment plant.

KOTC is one of ASRY's largest customers as is Odfjell, which has drydocked a number of chemical carriers to retrofit the vessels with Mewis Ducts, plus general repairs.

Who will feature in our Top 30 listing next year?

As can be seen from Tanker Operator's Top 30 companies listing, included in this issue, there are fundamental shifts underway in tanker shipping's hierarchy.

The rise of the Chinese will no doubt continue into the 2015 listing, despite Nanjing Tankers' problems, as the domestic owners seek to feed China's insatiable appetite for energy by using Chinese hulls.

Will the consolidation continue into next year? Probably. For example, in recent months, we have seen Euronav consolidate into a major player with the purchase of 15 VLCCs from Maersk.

The Antwerp-based company also attempted to buy five large tankers from Overseas Shipholding Group (OSG) until it was stopped by the debtors who withdrew their motion to sell the vessels, due to the ongoing US bankruptcy proceedings.

The deals that have been reported and there have been several of them recently, just goes to show that there is no shortage of money trying to find a new home. Most of the cash comes in the form of private equity today with several US firms leading the way.

With the pick up in rates in most sectors recently and with newbuilding prices still not at their pre-financial crisis levels, plus an improving secondhand market, especially in newbuilding resales, shipping is becoming an attractive proposition for companies and individuals with spare cash.

Will the recent spate of orders kill the 'Golden Goose' – perhaps! According to one source, we could be heading for the best, or worst, whichever way you look at it, 12 months in newbuildings and secondhand sales since before 2008.

In one week during the middle of February, some $1.8 bill was invested in shipyards for new hulls, amounting to 25 new orders. This figure could be much higher as it was thought that there a several 'off market' deals done as well, which was thought to have brought the total up to over 70 vessels of all types.

The combined figure for that week included 10 tankers and 13 gas carriers, according to a Greek shipbroker. However, the week before there were 28 tankers reportedly ordered.

Options declared

Several of the tanker orders seen recently were declared options, including two MRs for Maersk Tankers at Sungdong. MRs have continued their 'flavour of the month' title, which has resulted in newbuilding prices creeping up to between $35 and $40 mill per vessel.

For example, Diamond S Shipping's proposed deal to expand their product tanker fleet by another 10 vessels by buying Metrostar's newbuilding contracts, was said to have been agreed at around $38.5 mill per vessel. However, this deal is still subject to the US-based company's successful IPO outcome but it shows just what can be achieved with the backing of private equity firms, such as Blackstone.

In the Top 30 listing, we have lost Nordic American, Kuwait Oil Tanker Co, Tanker Pacific and Chevron. This is not down to the companies going out of business, but rather the increase in tonnage by those above them, plus the newcomers, as they take delivery of their newbuildings.

Although the recycling numbers are reasonably high on the back of firm prices being paid, they are still not enough to re-balance fleets in terms of numbers of vessels.

NITC's meteoric rise to No 2 is an interesting example. This company has taken delivery of several Chinese-built VLCCs during the past 18 months, or so. However, how many are trading is open to question, but there is no doubt that the hulls are in the water and could affect the market, once the company enters the mainstream tanker sector again.

It is interesting to see that the two Japanese majors still dominate the list by virtue of the numbers of vessels operated. They are being tracked by two Chinese major players, plus a newcomer to the list – Nanjing Tankers- and will probably rise still further as they have a significant newbuilding programme, especially in the case of COSCO.

Other newcomers include Formosa Plastics and Navios Acquisition by way of their respective new VLCC additions. It is interesting to note that the threshold for entering the Top 30 has gone up from about 2 mill dwt a few years ago to stand at almost 4 mill dwt today. Who says that the tanker sector is declining?

At the time of writing, a VLCC newbuilding would cost you around $98 mill for an eco vessel, but the prices will no doubt return to the $100 mill plus in the near future. It is also interesting to see that LR1s and LR2s are making a comeback illustrating that owners and operators are looking for that extra bit of flexibility in their fleets.

Large players, such as Teekay and Frontline, have diversified into other shipping sectors, including offshore where there is still demand for large tanker hulls to fulfil the seemingly never ending need for more FPSOs and to a lesser extent FSOs.

There is no truth in the rumour that Tanker Operator will be running a book on who makes the Top 10 in 2015. Just suffice to say that there will no doubt be major changes before this year bows out. TO

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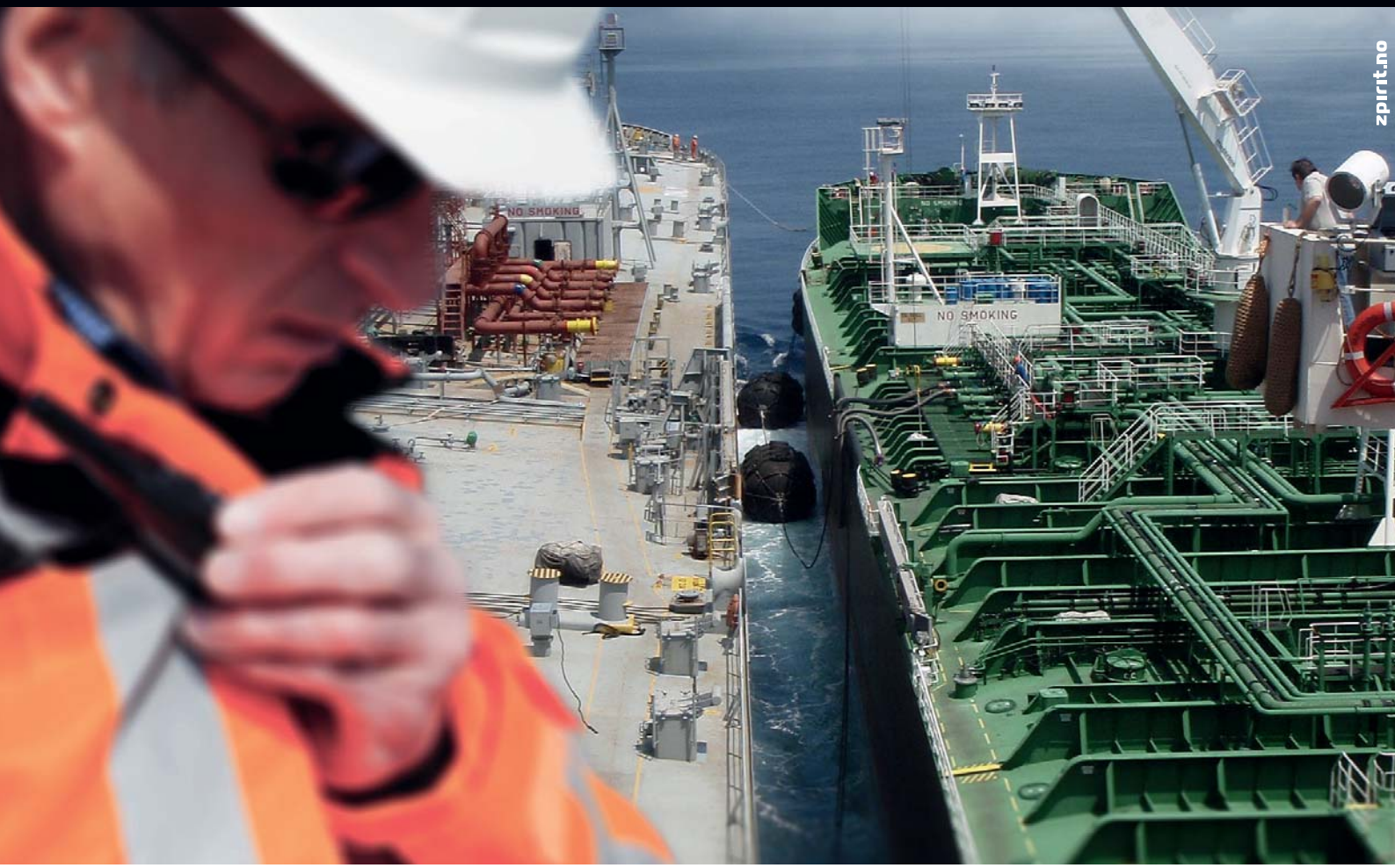

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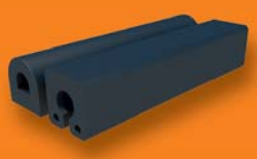

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Mixed signals - clean tankers to come under presssure

Looking back over 2012 and 2013, global tonne/miles demand for CPP & DPP tankers increased by roughly 2%, according to trade data analysed by McQuilling Services in an industry note issued during the middle of February. (see Figure 1).

This development was primarily supported by clean product trade, which saw overall tonne/mile demand rise by 3%. As for the crude and residual fuel tankers, total tonne/mile demand rose by just over 1% year-on-year.

In addition to global economic concerns, primary pressure on crude and residual tankers throughout 2013 was heavy refinery maintenance, especially at the start of the year, which reduced feedstock demand.

This seasonal market factor was further exacerbated as European refiners continued to struggle from reduced margins while problems with the Motiva refinery in the US put pressure on AG import volumes.

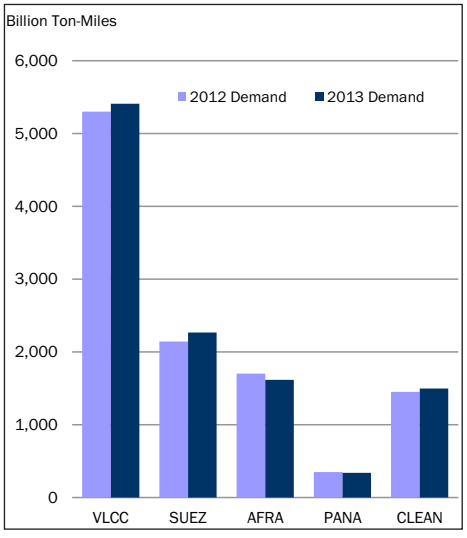
Although the oil production boom in the US oil has all but eroded, its imports of light sweet crude oils, longer sailing distances to markets east of Suez, provided support to tonne/mile demand originating in West Africa. In terms of the tonne/mile demand, lower freight rates, which were spurred by over tonnage in the sector, supported a 6% rise in Suezmax tonne/mile demand.

As we move into the current forecast period (2014-2018), we expect that tonne/mile demand for crude and residual product tankers will rise by a relatively low 0.75% on an annual average, McQuilling said.

Turning to clean product tankers, trades originating in the US continued to post higher outflows particularly to Europe, the Caribbean, South America and increasingly, Africa. While the MR2 fleet transported the majority of clean trade volumes, we continued to see a migration towards the larger LR fleet.

Tonne/mile demand for both LR2s and LR1s increased by 7%, while MR2 demand increased by a lower 3%. At present, we expect tonne/mile demand for clean petroleum tankers to rise by a relatively higher annual average of 1% during the forecast period to

Figure 1 - Tanker Demand 2012/2013



Source - McQuilling Services.

Newbuildings robust

Contracting activity was robust in 2013, as through the year, orders were placed for 392 tankers above 27,500 dwt. This was the highest level seen since 2007 when 394 were ordered (see Figure 2).

About 55% of these orders were for MR2s, bringing orders for this class up to 350 since 2011. Orders for other clean tonnage were also healthy - a testament to where market participants' optimism lies.

This activity continues to cement our belief that starting in 2015 and 2016, clean tonnage will come under pressure, McQuilling warned.

Analysing dirty tankers, a firm 41 VLCCs were ordered, with about 30% of these contracted in the fourth quarter of last year. While some of these vessels are unlikely to leave the yards, the ordering activity highlights how sentiment can quickly override history.

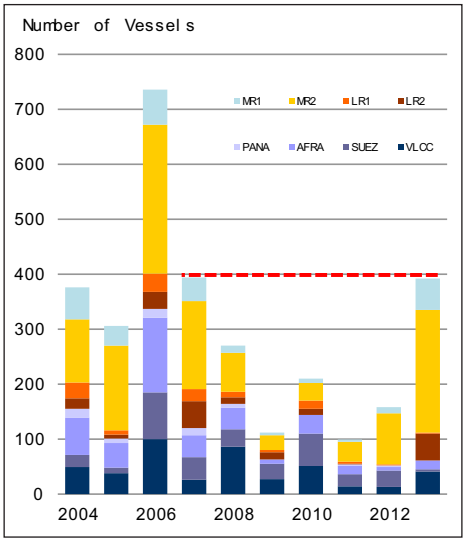
In preparing for this year's tanker market outlook, we continued to increase collaboration with our clients and other market participants. This provided us with greater insight to trade flows, in particular for clean products and further product movements. The information was incorporated into our demand engine, providing broader criteria for analysis, the consultancy explained.

As we began the forecast period we realised that the global fleet was unbalanced, as seen by the recent swings in the market. However, despite strong performances in some sectors, the quick correction (in February) has reminded us of the abundance of tonnage.

Throughout recent years, this excess tonnage capacity has been mitigated by owners opting to slow steam in the face of rising bunker costs, but an improvement in earnings could cause some owners to push the throttle forward and exacerbate the situation.

Until owners opt to dispose of older tonnage, or stricter age limits are imposed through charterers, port restrictions, or vetting procedures, fleet levels will remain a concern and improvements in spot rates are likely to be limited. TO

Figure 2 - Tanker Contracting 2004/2013



Source - McQuilling Services, IHS Fairplay.

Everything in moderation please

Tanker ordering activity picked up last year, with investment in new tonnage mainly focused on MRs and LR2s. Orders in each of these categories reached their highest level since 2007.

Shipowners' confidence in product tankers was supported by increasing trade and the anticipated further growth in demand amid expanding refining capacity in the Middle East and India, said Gibson Research in a recent report.

There was also a stronger appetite for new VLCCs, 52 were ordered last year, the highest number since 2010. This trend is continuing into 2014, with six new orders placed in January and a few more up to mid-February.

About half of this investment in VLCCs is coming from Asian shipowners to secure tonnage for domestic crude shipments and/or fleet replacement programmes.

At first glance, this greater interest in VLCCs is surprising. The sector is clearly overtonnaged, following 5-7% per annum growth in fleet size over the past four years.

The problem of oversupply is not expected to be resolved anytime soon, as there are pressures on demand, such as declining US crude import requirements and less crude coming out of the Middle East following the start-up of export orientated refineries in the area.

However, asset prices are telling a different story. The price for a newbuild VLCC declined to a low of $89.5 mill in mid-2013, down by 44% from the level seen in early 2008.

Although VLCC values have moved up over the past seven to eight months, with indications during the middle of February of around $98-99 mill being paid, these levels are still well below the peak.

In the longer run, there are also some promising signs in terms of the VLCC fundamentals. New ordering was very limited during the period 2009 -2012 (with the exception of 2010) and so deliveries over the next three to four years will be well below those witnessed since 2008.

Moreover, trading conditions for the first generation of double hull VLCCs (15 years of age plus) are becoming increasingly more challenging, meaning that there will be greater pressure to send these ships for demolition.

If indeed we see higher scrapping over the next few years, this could translate into the VLCC fleet going into a slight decline, Gibson said. With time, demand is also anticipated to recover (following the diversion of some of the Middle East barrels into domestic refineries) expanding the crude trade from West Africa and the Caribbean/South America to Asia.

In other words, improving VLCC fundamentals in the medium to long term, coupled with what looks like a very attractive price, could justify the increased levels of investment in new VLCCs.

However, "everything in moderation" is the key here, if the VLCC market does not want to face another major oversupply problem several years down the line, Gibson warned.

Energy outlook

Gibson also highlighted tanker market implications thrown up by the recently released BP Energy Outlook 2035.

Oil is expected to show the slowest percentage growth of all energy forms, through 2035. BP estimated that total global liquids demand (oil, biofuels and other liquids) was likely to rise by around 19 mill barrels per day, to reach 109 mill barrels per day by 2035.

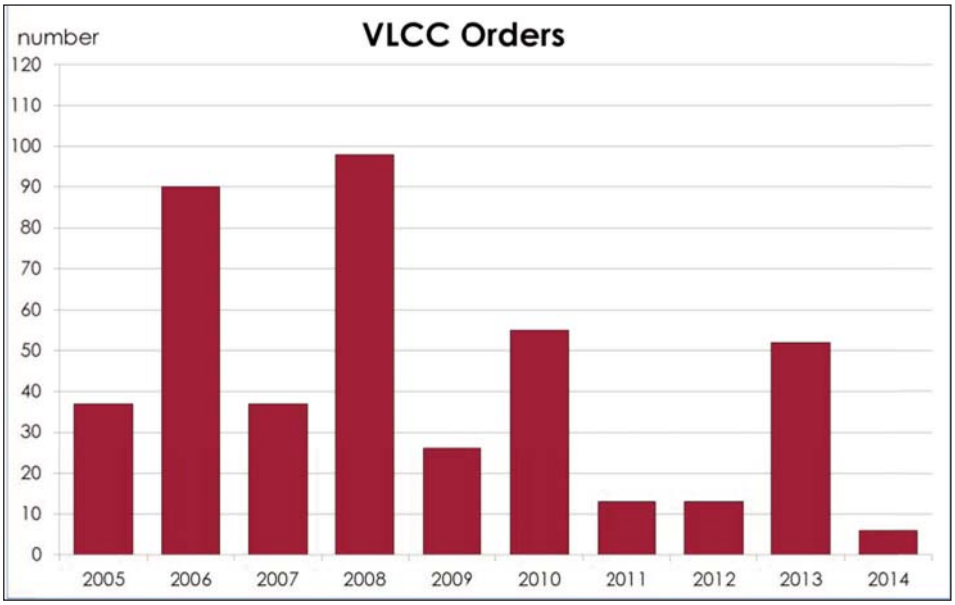
China continues to lead the way in the increase in oil demand, growing by 8 mill barrels per day to 18 mill barrels per day in 2035, surpassing the US in 2029. Thus, China's import requirement is projected to more than double from today's levels to almost 14 mill barrels per day, or 75% of demand.

The non-OECD transport sector provides the majority of the hike in liquids demand growth to 2035, up 16.6 mill barrels per day, owing largely to a rapid expansion in vehicle ownership. In the OECD countries, declines are expected, driven by vehicle efficiency improvements and the increasing use of alternative fuels.

To meet this global demand increase by 2035, OPEC production will have expanded by 7.4 mill barrels per day, coming primarily from NGLs (3.1 mill barrels per day) and crude oil in Iraq (2.6 mill barrels per day).

The above trends will have major implications for the tanker markets, Gibson said. Factors, such as increases in vehicle fuel efficiency and the slowdown in global oil demand growth, may be negative.

However, with the substantial gains in Atlantic Basin oil production, coupled with the world's major increases in oil demand taking place in the East, the shift in trade from the West to East will provide a strong boost to crude tanker tonne/miles in the future. TO



Fujairah continues to expand

Fujairah has come a long way in a short space of time and the port's expansion as a major tanker hub is still continuing, both physically and in the planning stage.

Better known in earlier years as a major anchorage, primarily serving tanker traffic waiting to enter the Gulf, the Port of Fujairah (POF) has now become a hub port for petrochemicals and an export gateway for aggregates. There is also a crude oil loading terminal accessed through three single point mooring buoys (SPM), connected to a pipeline running from Abu Dhabi.

Plans are being put in place to build a refinery, an LNG regasification plant and at least one, possibly two VLCC jetties together with crude oil storage tanks on land. Some of the storage companies, which already have facilities at POF, are also looking to expand their tank farms and terminals on the back of the increase in business.

This commitment to build a tanker hub at the port has not been undertaken at the expense of the anchorage, now known as the Fujairah Offshore Anchorage Area (FOAA). It is still very much in use and is now well controlled by the port authority, which has instigated a dedicated slot system similar to that found at Gibraltar but on a far greater scale.

Illustrating its popularity, there are 12,000 vessels calling annually at the anchorage and last year, the number of vessels using the slots grew to 13,490 - an increase of 13.7% on the number of vessels calling in 2012.

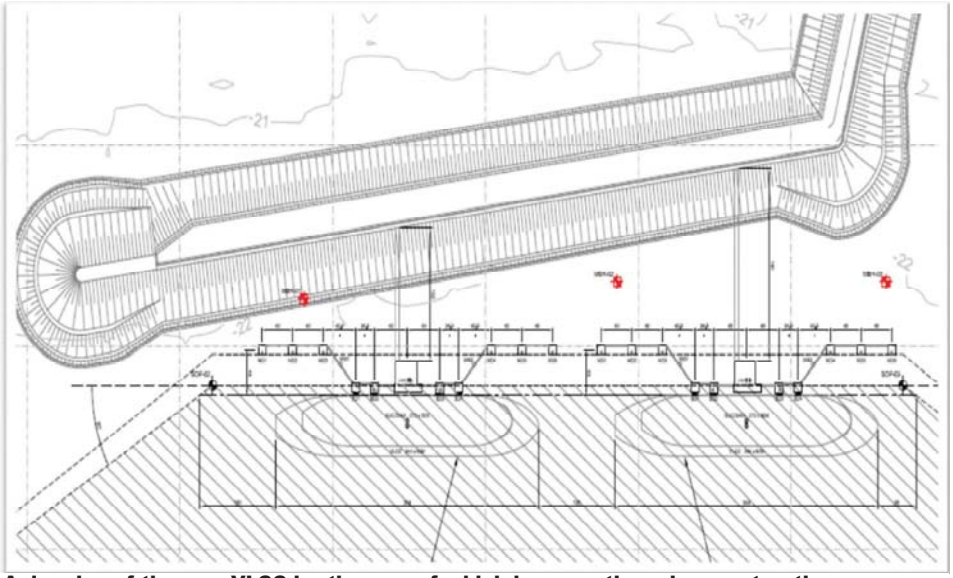
Fujairah is now major crude oil and products hub port.

The anchorage was reorganised due to the installation of the SPMs and today there are 114 anchor positions in seven zones. To discourage owners from dumping, or laying up vessels in the anchorage, punitive charges set in after 10 days' free anchorage time. The POF is currently seeking ways to increase the size of the anchorage, which stretches for about 12 miles offshore.

In addition, to the three already in operation, there are slots reserved for up to another 13 SPMs. With a water depth of 24 m, they will be capable of handling VLCCs.

Given the volume of vessels using the anchorage down the years, a huge marine service centre has built up at Fujairah offering crew changes, bunkers, ship supplies and other services that a vessel might need.

There are 13 bunkering companies alone, which have helped to place Fujairah second in the world's bunkering league table. Bunkering



A drawing of the new VLCC berths, one of which is currently under construction.

Port tariff for tankers calling at the SPMs:

- Marine charge for tankers calling SPM terminals is AED2.35 per gt per call (berthing and unberthing) for a maximum of 50 hours from berthing to unberthing.
- Additional hours, or part after 50 hours, will be charged at AED1,500 per hour.
- Wharfage charges will be covered by separate service agreements relating to the particular operations.

Source: GAC.

operations are self-regulated and there is access to anti-spill equipment and Yokohama type fenders, which are also used for ship-to-ship transfers off the port.

In addition there are also around 55 registered agents in the port, from the huge conglomerates, such as Wilhelmsen Ships Services (WSS), ISS and GAC, plus Kanoo to much smaller operatives.

Unique position

Fujairah's unique geographical position about 124 miles outside the Gulf (around 24 hours steaming time) and about 70 miles' steaming from the Strait of Hormuz, at which point the insurance costs rise for vessels entering the Gulf, persuaded the various companies and the government to invest in storage facilities, jetties and loading buoys in and around the port area.

Although the anchorage has been around for decades, almost ever since tankers started using the Middle East Gulf terminals, coming to the fore during the Iraq/Iran war, the initial construction of the port area only began in 1978, as part of the UAE economic development. Full operations commenced in 1983 and for more than two decades, it was a general cargo and container port. The first oil terminal didn't come on stream until 2010. But since then tanker sector expansion has continued at a rapid pace and there is still more to come.

The expansion phase started off with private product tank storage farms with jetties attached via pipelines. However, today there is now a VLCC loading facility utilising three CALM SPMs about four miles offshore. These are fed by the Abu Dhabi Crude Oil Pipeline (ADCOP), which was completed by the Abu Dhabi-based International Petroleum Investment Company (IPIC) and started operations on 30th June, 2012.

The new 370 km long and 48 inch diameter pipeline was built to reduce the reliance on Arabian Gulf oil terminals, while also reducing shipping congestion through the Straits of Hormuz, cutting insurance costs and saving up to three days sailing time.

Onshore, eight tanks were built of 1 mill barrel capacity each, expandable to 12 mill barrels capacity in total with loading lines of 1.5 m diameter connected to 12 ship loading pumps giving a loading capacity of up to 80,000 barrels per hour per SPM. Each SPM can accommodate tankers of up to 320,000 dwt.

Starting at Habshan in Abu Dhabi – the current collection point for Abu Dhabi's onshore crude oil production – the ADCOP pipeline runs through the emirates of Sharjah and Ras Al Khaimah to the port of Fujairah and offshore.

It has been designed to transport 1.5 mill barrels per day of crude oil from ADCO's Habshan facility over a distance of 370 km to the export oil terminal in Fujairah, making it the longest pipeline in the UAE and one of the longest in the Middle East. The new pipeline is claimed to handle over half of the UAE's daily crude exports.

Its capacity can be boosted to 1.8 mill barrels a day if required, by using a special dredging agent to reduce friction, which would account for around 75% of UAE crude oil exports and some 10% of all the oil currently being shipped through the Strait of Hormuz.

The new pipeline offers Abu Dhabi great flexibility to increase crude oil production, as the existing Jebel Dhanna crude oil loading terminal will remain operational, the operator ADCO said. ADCO is the pipeline operator, working under a lease agreement with IPIC.

The Murban crude oil is intended mainly for shipment overseas but can also be directed to the adjacent new Fujairah refinery, soon to be constructed by IPIC and due to open at the end of 2016/beginning of 2017.

In addition, during this decade of expansion, the private storage

Fujairah's Private Tank Storage

- Companies started increase its storage facilities to cater for trading activity as well as bunkering activity.
- Fujairah had 4.07 mill cu m of oil storage capacity at the end of 2012.
- Oil storage capacity rose by 2 mill cu m reaching over 6 mill cu m 2013.
- By 2017, Fujairah's oil storage capacity is expected to reach over 9 mill cu m.

Private Tank Storage Capacity

Private Terminals

	Qty in cbm	2012	2013	2014	2015	2016	2017		Total
1	AEGEAN		465,000						465,000
2	SOCAR AURORA - Phase-1,2,3	114,000	232,000	295,000					641,000
3	CONCORD Phase 1,2			880,000	245,000				1,125,000
4	ENOC - Inside port	220,000							220,000
5	ENOC - Outside port		240,000						240,000
6	EMARAT	240,000							240,000
7	EPPCO	135,000							135,000
8	VTTI (FRCL) Extension of Lot-1	1,170,000							1,170,000
9	GPS Chemoil - Phase I,II,III	95,000	580,000						675,000
10	GULF PETRO CHEM		412,000						412,000
11	Prime star - IL & FS Phase-1			333,000	300,000				633,000
12	VOPAK	2,100,000		855,000					2,955,000
13	Eurex Crude Oil Terminal Fuj.				279,600		326,200		605,800
	New Storage Capacity	**4,074,000**	**1,929,000**	**2,363,000**	**824,600**	**0**	**326,200**	**Total**	**9,516,800**
	Total Cumulative		**6,003,000**	**8,366,000**	**9,190,600**	**9,190,600**	**9,516,800**		

14	ADCOP FACILITY	1,052,632	**Total**	**10,569,432**

Notes:

1. Capacities declared by participant (Questionnaire sent on November 22, 2012)
2. EUREX have yet to confirm land lease signed – recent development
3. ADCOP based on Murban / BBL conversion 7.6

Source- Port of Fujairah.

companies started to build up their operations at Fujairah to cater for trading activity, as well as bunkering operations. By the end of 2012, Fujairah had 4.07 mill cu m storage capacity. This rose to more than 6 mill cu m capacity last year and by 2017, the storage capacity is expected to reach over 9 mill cu m.

To cater for bunker suppliers and traders alike, the port operates seven oil berths – the first 850 m long jetty dredged to 15 m and a second 1,500 m long jetty dredged to 18 m depth. Further expansion will add another 830 m of quay also with a depth of 18 m. The deeper draft berths can handle tankers of up to 180,000 dwt.

An example of a private storage company's rapid expansion at Fujairah is the case of Vopak Horizon, which at the end of last year announced its seventh phase of expansion adding another 478,000 cu m of crude oil storage following the signing of a long term contract with an unnamed customer. Once in operation, this will bring Vopak Horizon Fujairah's total capacity to more than 2.6 mill cu m of storage for both crude and products.

VLCC jetty

The latest phase will involve the construction of five crude oil storage tanks, a manifold, plus a pipeline connection to a new VLCC jetty planned for the port. Another VLCC jetty is also on the drawing board. The company claimed that this project will involve the construction of the first crude oil tanks in the Middle East for independent storage operations.

Vopak Horizon Fujairah is a joint venture between Royal Vopak (33.3%), Horizon Terminals (33.3%) - wholly owned by Emirates National Oil Co (ENOC) - the Government of Fujairah (22.2%) and Kuwait's Independent Petroleum Group (11.1%).

Vopak said that this expansion project will strengthen Fujairah's status as one of the world's leading hubs for crude oil and oil products, with room for further expansion. The new phase expansion and jetty connections are expected to be commissioned in about June 2016.

In addition, Vopak Horizon Fujairah also commissioned four oil tanker jetty pipelines connecting its terminal to the port for a wide range of products.

Saeed Khoory, ENOC CEO, said at the end of last year: "We are thankful for the support of the Government of Fujairah in the expansion of the Vopak Horizon Fujairah facility. Over the years, Fujairah has firmly underlined its global credentials as one of the top three oil storage hubs, next to Rotterdam and Singapore. The addition of more storage space at Vopak Horizon Fujairah will significantly support the region's oil trade sector and enhance the convenience of all key stakeholders by providing world-class logistics support."

At the same time, Eelco Hoekstra, chairman of the executive board and Royal Vopak CEO commented: "With its strategic location outside the Strait of Hormuz, combined with the available infrastructure and knowledge, the Port of Fujairah is very well positioned to become a crude oil hub in the Middle East. We are excited to build together with our partners the seventh expansion of Vopak Horizon Fujairah and add crude oil tanks to safely serve our customers."

According to estimates published by Vopak, the global non-captive oil storage market is more than 220 mill cu m. With the Gulf region accounting for nearly 50% of the world's crude oil reserves, the new facility will significantly enhance the efficiency of operations of the oil producers by facilitating efficient logistics support, the company claimed.

Mentioned earlier in this article, the Fujairah Refinery project is a strategic UAE Government initiative through IPIC to construct, operate and maintain a refinery complex in Fujairah, close to the new

There are three turret-type CALM SPM buoys offshore operated by ADCO Fujairah Terminal, with the following specification:

	SPM1	SPM2	SPM3
Maximum SDWT	320,000	320,000	320,000
Minimum SDWT	100,000	100,000	100,000
Maximum LOA	340 m	340 m	340 m
Minimum LOA	150 m	150 m	150 m
Sea Lines to PLEM	48"	48"	48"
Subsea Hoses	2 x 24"	2 x 24"	2x 24"
Floating Hoses	2 x 24" hoses Terminating in 16" tanker rail hose	2 x 24" hoses Terminating in 16" tanker rail hose	2 x 24" hoses Terminating in 16" tanker rail hose
Length of Hose strings	Inner approx. 300 m	Inner approx. 300 m	Inner approx. 300 m
Sub-sea hose configurations	Lazy S	Chinese Lantern	Lazy S
Mooring Hawsers	Single x 20" x 70 m fully	Single x 20" x 70 m fully	Single x 20" x 70 m fully
Water depth	54 m	36 m	56 m
Max. Loading Rate	80,000 b/h	80,000 b/h	80,000 b/h
Minimum Loading Rate	2,000 b/h	2,000 b/h	2,000 b/h
Buoy Position	25^0 13.0' 05.3018 "N 056^0 24.0' 41.7386" E	25^0 13.0' 46.2449 "N 056^0 23.0' 41.4905" E	25^0 14.0' 13.7123 "N 056^0 24.0' 50.3580" E
Buoy Color	Yellow	Yellow	Yellow
Buoy light Characteristics			
Light Color	Yellow	Yellow	Yellow
Morse Code	"B" every 10"	"C" every 10"	"D" every 10"
Light Range	4 NM	4 NM	4 NM
Hose Light Characteristics			
Color	White	White	White
Period	5.0 seconds	5.0 seconds	5.0 seconds
Duration	0.25 seconds	0.25 seconds	0.25 seconds

Source: GAC.

ADCOP pipeline and oil terminal and the port's deepwater oil export terminals.

The refinery will be designed to process a mixture of UAE crudes, such as Murban, Upper Zakum and Dubai, plus other regional and opportunity crude oils and will have a processing capacity of about 200,000 barrels per day. It is also expected to produce middle distillates primarily for the UAE's Northern Emirates, for export and for bunker fuel to meet the demand at Fujairah.

It will have its own power generation capability to meet its power requirements and it will also provide power to the grid of the Northern Emirates. The refinery is scheduled for completion at the end of 2016.

The project management consultancy contract for the refinery's front-end engineering and design phase (FEED) was awarded to Shaw Stone & Webster in April 2011. The project is currently believed to be in its pre-FEED phase.

Fujairah has also been identified as an optimal location for the development of an LNG import terminal. At present, it is planned to operate a regasification unit offshore (FSRU), which could be in place by the second quarter of this year. This will be followed by an FSU, which is expected to be in place a year later.

Other projects in operation, or planned, at the port include the UAE's strategic grain reserve terminal and aggregate berths for loading bulk carriers with building material for construction projects in the Gulf.

A new port control tower complete with a vessel traffic control system was opened last year and a freight only railway line is going to be built, connecting Abu Dhabi and Dubai with a spur going into Fujairah.

TO

WSS- a leading service provider and trainer

At Fujairah, one of the leading agencies and ship service concerns is Wilhelmsen Ships Service (WSS), which in 2012 ranked second in the number of vessels handled at FOAA.

WSS' presence in Fujairah can be traced back to 1983 and today, the company is ranked among the top three agencies in Fujairah out of 55. Last year, WSS Fujairah handled 2,780 vessel calls and completed 5,356 launch trips using the company's five high speed launches.

The launch service to the anchorage is offered 24/7 x 365 days per year with VHF facilities for direct contact with the vessel to be visited. The service centre also claimed a 15% market share of all the oil exports handled through the port.

The Fujairah office handles agency and other work for various companies, such as Total Oil Trading (TOTSA), Golar LNG, Trafigura, V Ships, RasGas, Frontline, Teekay, Thai Oil, TORM, Stolt-Nielsen, Maran Tankers Management, Itochu Corp, Fleet Management, Vitol, Northern Marine, Heidmar, Gunvor, Morgan Stanley, Glencore and Kuwait oil Tanker Co, plus others.

Located at the Fujairah Freezone, WSS has a 4,178 sq m warehouse used for storage and the handling of ships spares and equipment and a 16-bed dormitory, which is used for crew changes, ie on and off-signing crew in support of husbandry services, which was described as the agency's 'bread and butter'. This activity is in addition to the port office, located adjacent to the launch supply base within the port.

The company said that it strictly adheres to local rules, regulations and cultural values and enjoys an excellent rapport with the local port management and authorities.

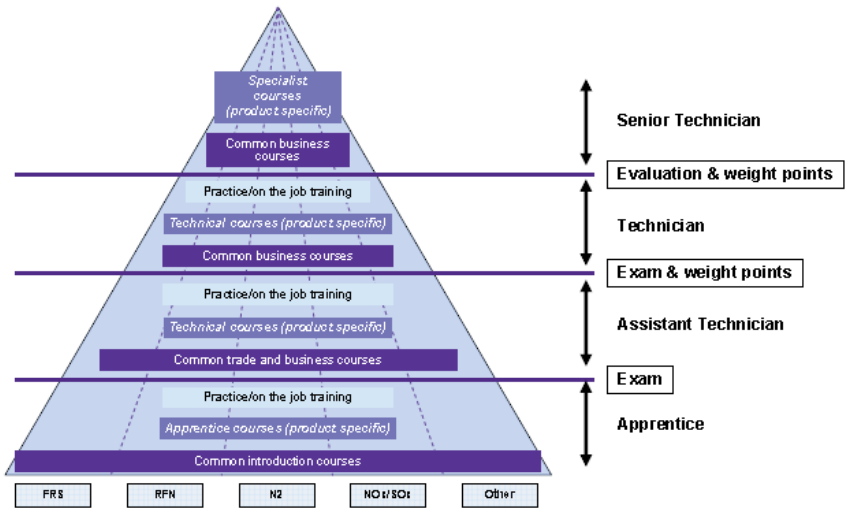
The local office also handles port calls at nearby Khor Fakkan, while in the UAE as a whole, WSS has 360 employees in 15 offices, including at Ruwais - a port handling crude oil and sulphur cargoes. Other offices can be found at Ras Al Khaimah/Mina Saqr, Sharjah (unmanned), Jebel Ali Freezone (two warehouses), Jebel Ali Cargo Village, Dubai Industrial City and the headquarters in the centre of the city. In addition there are three warehouses at Mina Zayed (Abu Dhabi).

Fujairah is an important location for the company as it opened a safety service station at the Free Zone and has established a training centre for safety certification of trainee technicians, both for working ashore and on board ship.

On the technical supply side, some 9,799 items were delivered in 2013, including items connected with WSS safety services. Around 80 staff is employed in the two Fujairah locations.

WSS' safety service stations perform about 21,000 safety services annually. They are certificated by seven class societies with another two to come shortly. Local certificates for the Fujairah centre have been awarded by the Indian Register of Shipping, the US Department of Transport and the UAE National Transport Authority for the safety services on offer at the warehouse.

Training structure



Source: WSS.

Statutory work

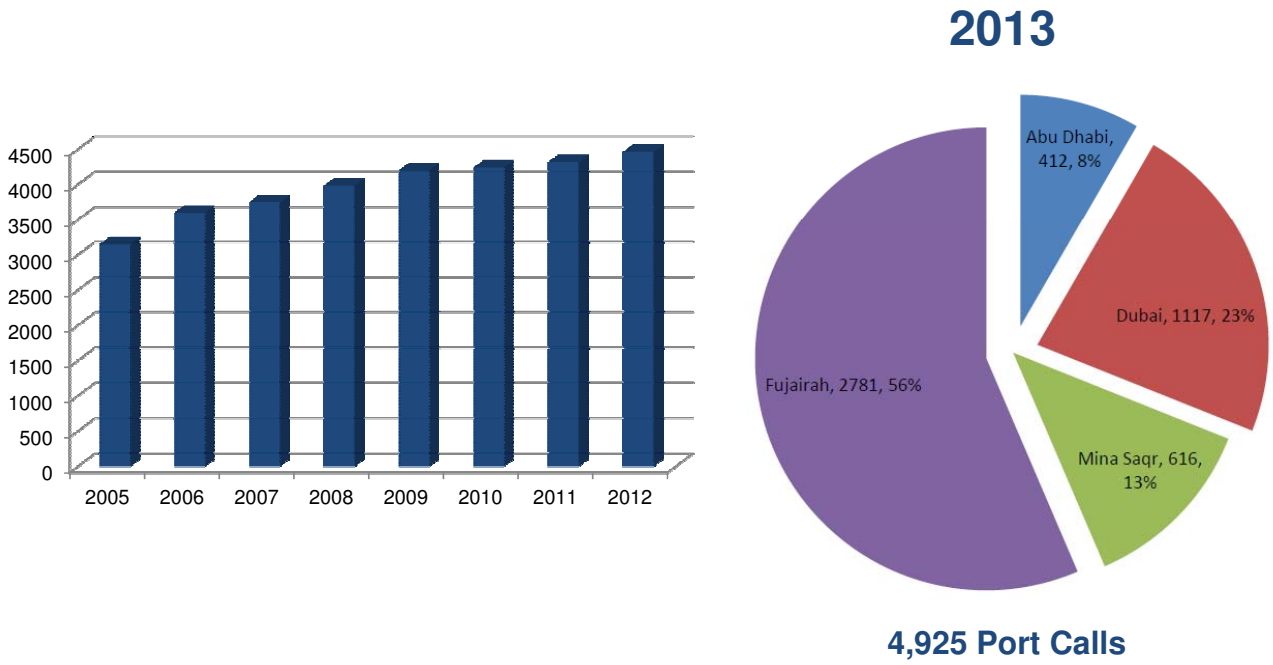
Fujairah service station carries out statutory survey and maintenance on fire protection and life saving appliances, rescue and personal protection equipment, gas welding and cutting equipment.

Periodic inspections are made of fire, rescue and safety systems and equipment following which a certificate is issued and reports are completed. Faulty, or condemned parts can be replaced as can the commissioning of new equipment.

Among the systems tested are low and high pressure systems, galley deep fat fryer systems and on board foam systems.

The certificates and reports form the basis of a Ships Safety Equipment Certificate, which is issued by the vessel's class society.

WSS's Safety Service is certified to ISO 9001:2008 from both DNV GL and the



WSS UAE port calls 2005-2012, plus 2013.

Russian Register.

A training centre was opened in 2010 and thus far, WSS has similar centres in other major ports worldwide, including Shanghai/Singapore, Houston and Antwerp, which were modelled on the Fujairah centre. Apprentices are recruited and put through a rigorous training regime before they can become WSS technicians.

The four main centres handle around 300 apprentices per year and each centre has around 70 training modules, of which 30% are handled in the classroom, while 70% are undertaken on board ship with a senior technician.

It takes around five to six years to become a WSS senior service technician and the company told *Tanker Operator* during a visit to the centre recently that WSS was around 100 technicians short at the moment. The company also claimed that there was no equivalent institute available anywhere in the world.

Technicians

The focus is on training WSS technicians and apprentices in marine safety systems, as well as product and service management to a professional technical level. The centres are equipped with state of the art firefighting systems and safety equipment from several manufacturers in order to conduct real-time, practical training. Training instructors include specialists from Wilhelmsen Technical Solutions (WTS) and other equipment manufacturers.

At Fujairah, the training centre has immersion suits, a Bauer compressor, Unitor portable firefighting and dry powder systems, hoses and hydrant inspection kits and a new skid for a deep fat fryer extinguishing system. OEM training is also carried out and the centre said that it would like to become involved in the direct training of shipboard personnel other than WSS employees.

On board practical training is seen as an important part of a safety service technicians learning curve to develop the competence needed for example to service a deck foam system. TO

ADNOC mulls possible fleet expansion

Abu Dhabi National Tanker (ADNATCO) and National Gas Shipping Company (NGSC) are currently undertaking a strategic review of future tonnage needs, which could see new contracts placed, reports Paul Bartlett.

The two entities, set up in 1975 and 1993 respectively, are both Abu Dhabi National Oil Company (ADNOC) group companies and provide shipping services for the rapidly expanding national oil company.

Following the merger of the two companies' support service operations in 2009, a major acquisition programme saw the tanker and gas carrier fleets expand with 17 new vessels during 2010-11. But senior executives point to low newbuilding prices currently prevailing at contract-hungry yards in the Far East.

Together with ADNOC's ambitious future expansion plans – described as "unprecedented" by the shipping companies' managers – requirements for additional shipping capacity will inevitably lead to another round of new contracting, although timing remains uncertain.

The strategic review currently in progress is aimed at identifying the best options, which are likely to mean adding capacity in the companies' existing tonnage groups. The diversified fleet today comprises two LR2 and four LR1 product tankers, three chemical tankers, one LPG carrier, one molten sulphur carrier, four Supramax and three Handysize bulk carriers, a feeder container vessels, eight LNGCs and two ro/ro's, which are due to be imminently phased out.

During their assessment of likely future tonnage needs, ADNATCO executives are likely to ponder a number of variables. First of these is its parent's drive to raise crude oil production. ADNOC has a $48 bill capital investment programme in place, which will see crude output boosted from an average of about 2.8 mill barrels per day in 2013 to more than 3.5 mill barrels per day by the end of 2017. The Emirate currently has two oil refineries of capacity 485,000 barrels per day and is spending $10 bill on a new 417,000 barrels per day facility, due on stream in 2014.

Expanding oil production will result in a range of by-products with their own shipping requirements. Volumes of both LNG and LPG are likely to increase, while Abu Dhabi's sour gas – with a high hydrogen sulphide content – is likely to boost sulphur production from today's seven million tonnes per year to around 11 mill tonnes by 2020, according to estimates.

Petrochemical production will also rise and the export of containerised dry petrochemicals is likely to climb steadily. Thus far, gas carriers, chemical tankers, products carriers, drybulk vessels and additional containerships could feature on the companies' shopping list.

Spot charters

Conspicuous by their absence in the ADNATCO fleet are large tankers. The company charters spot tonnage on the open market as and when required but its exports are mostly shipped by others. However, now that the Abu Dhabi Crude Oil Pipeline is pumping crude from the Emirate's Habshan oil field to the export terminal in Fujairah, bypassing the politically sensitive Straits of Hormuz, there could be potential for a re-think.

The pipeline across the UAE desert to the rapidly expanding Port of Fujairah on the Gulf of Oman is not yet operating at full capacity – current throughput is running at about 1.5 mill barrels per day, compared with capacity of 1.8 mill barrels per day – but this is likely to increase in the months ahead.

There are also local rumours that throughput could be doubled with the addition of another line but sources have not been able to confirm whether there is any foundation to such talk.

One further issue to be considered will be whether, or not, to order more LNGCs. At present the eight-ship fleet, comprises two classes of vessel, all of around 137,000 cu m. The four-ship *Al Khaznah* class were built by Mitsui Engineering and Shipbuilding in 1994-5, while the other four vessels, the *Mubaraz* class, were built at Kvaerner Masa, Finland, in 1996-7.

The eight vessels are currently deployed on a dedicated trade shipping gas from Das Island to Japan on a long-term contract with Tokyo Electric Power Company (TEPCO), which runs until 2019 but has further options thereafter.

These vessels are run on three-year docking cycles and two of each class –*Ish, Shahamah, Muburaz* and the *Mrawah* - are currently undergoing life extension and fourth survey work at Drydocks World, Dubai (DDW).

Dockings are timed to coincide with the shutdown and maintenance of the Das Island gas plant. Two of the remaining vessels –*Al Hamrah* and *Umm Al Ashtan* – will undergo life extension works during the facility's 2014 shutdown, while the last two –*Al Khaznah* and *Ghasha* – will have similar work carried out in 2015. DDW won the first four-ship contract after bids were also put in by N-KOM, Qatar and Singapore's Jurong Shipyard.

Of course, 20 years is nothing for a LNGC and life extension at this point is an obvious strategy. However, rising natural gas production in the future could generate demand for additional LNG shipping capacity, particularly as many Asian economies gear up to burn more gas.

There are also LNG imports to consider. A new terminal planned in Fujairah will see LNG shipped in and pumped in to the UAE's Dophin gas network.

Originally intended to import gas through a floating storage and regasification unit (FSRU), *Tanker Operator* understands that a fixed landside regasification and processing plant is now the favoured option. Whether or not gas imports will be shipped in to Fujairah on board vessels operated by ADNOC's marine transport subsidiaries, however, remains to be seen. TO

Diversification is the key for shiprepairers

The four major repairers in the area have all had a reasonable amount of success by diversifying away from their core business of bread and butter 'haircut and shaves' into other areas, such as the offshore sector.

For example, Bahrain-based ASRY is expanding its already extensive range of in-yard services by signing an service agreement with Solas Marine Services Group.

This agreement will allow Solas to build a 2,000 sq m service centre for lifeboats, liferafts and firefighting & life saving appliances within the yard, which will not only expand ASRY's services portfolio, but also bring new business opportunities to the Kingdom of Bahrain itself, the company said.

This is the first development in a programme aimed at increasing ASRY's technical resources, which will continue to roll out in 2014. The yard already boasts several in-yard workshops, but is investing in more third-parties setting up in the yard, with a view to maintaining its reputation as a one-stop shop for all marine repairs.

ASRY CEO, Nils Kristian Berge emphasised the importance of this agreement as a step towards diversifying ASRY's income through partnerships with major international companies. "The agreement is in line with ASRY's policy for developing the yard's technical resources and stay ahead of client's needs," he said at the signing ceremony..

The project will commence in March and is expected to be completed in four to six months. The term of the agreement is five years. This is the first is a series of similar arrangements, which will serve as additional resources for ASRY, the company said.

Recent highlights at the yard include the repair of the company's 4,000th vessel – the LPG carrier *Gas Al Gurain*, owned by Kuwait Oil Tanker Co (KOTC) one of ASRY's longest standing customers.

Another repair of note was conducted on board Odfjell's chemical tanker *Bow Firda*, which had a Becker Marine Mewis Duct fitted in only six days. The company claimed that the fitting of the duct would reduce the fuel consumption by 8%. She was followed by the *Bow Fagus,* which also received a Mewis Duct, had her hull treated and main engine overhauled.

KOTC's VLCC *Kazimah III* alongside *ASRY's* new repair quay.

During the visit of Transpetrol's LPG carrier *Progress*, the vessel had a new waste heat recovery system exhaust gas economiser fitted, which uses the heat energy produced from the vessel's diesel generators.

KOTC's 2006-built VLCC, *Kazimah III*, entered the yard for a routine drydocking, which included a main engine overhaul, plus the installation of a gas emission monitoring system, while ASRY Consultancy carried out a ballast water treatment system study.

Recently, the $1.5 bill Oman Drydock (ODC) handled its 200th vessel – a Maersk Line containership – since its opening at Duqm in 2011.

ODC CEO Yong Duk Park said completing 200 vessels reflected the company's growing stature as it aims to position itself as one of the best shipyards in the world.

"We are absolutely delighted to mark our 200th ship milestone with our hugely valued client Maersk," he said. "This moment is a powerful statement to the industry that ODC is now a major player in the Middle East. We have worked enormously hard to develop a robust track record working on a wide variety of ships from VLCCs to containerships to LNG and LPG carriers to chemical carriers, dredgers, RO-ROs and barges.

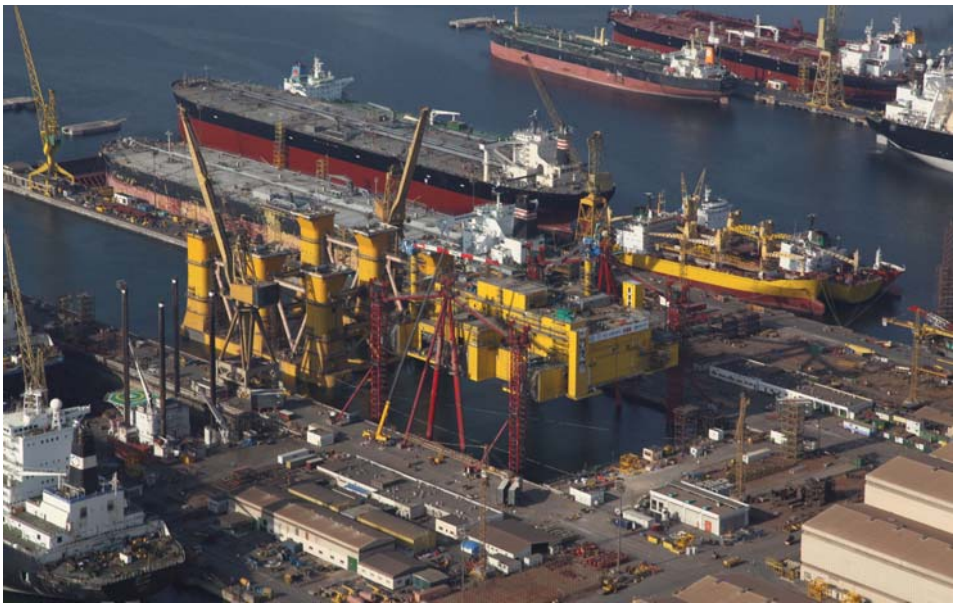
"We can now show the shipping industry we not only have world class facilities, which include our massive drydocks, which can accommodate any size of vessel, but we are developing the workforce, skills base, training and infrastructure that our customers demand. We have listened to our clients and we are offering efficient turnaround times, tremendous value, and world class workmanship.

"We are, of course, still seeking to grow and improve. As a result, we are actively looking to recruit more sub- contractors to our supply chain who can match our standards and share our vision. There are numerous tax breaks and incentives available and we encourage companies with the right background to get in touch," he said.

Raising the profile

Deputy CEO Sheikh Khalil bin Ahmed Al Salmi said ODC would now redouble its worldwide campaign to raise its profile and its prime selling points. "ODC has a passionate driving ambition to become one of the prime shiprepair yards in the world and the Middle East.

"We know we can deliver on quality, cost and critically time. Our geographical location thrusts us into pole position for the Asia to Europe shipping route, as well as the East African and Indian off shore industries. We can further slash costs and the time required for drydocking as vessels do not need to greatly deviate their course. This can save



Similar to other major repairers, DDW is diversifying into other sectors.

days in time, and a huge amount of money, which is such a key factor for shipping operators balancing tight budgets.

"Other key selling points include our unrivalled painting services and ability to deal with sludge and slops disposal. With painting, we have the perfect climate that few other yards can offer. With slops we can save up to three days sailing time, as we can deal with it all here on site, there is no need to sail to another location. We intend to market all these benefits hard in the coming months and years," he stressed.

In total, ODC undertook 75 drydockings and repairs last year. The yard also saw staff numbers increase to more than 2,000 in 2013. Clients included Dynacom, NYK, MSC and Exmar, Gulf Marine, the Shipping Corporation of India and Pacific International Lines.

In a presentation, ODC marketing director Johnny Woo said key jobs undertaken included the drydocking and repairs of two crude oil tankers, the Aframax *Karachi*, operated by Pakistan National Shipping and the MR *D&K-1* operated by Synergy Maritime.

The yard further undertook work on the Suezmax *Gladiator*, its first Dynacom ship. As a result, ODC has worked on some of Dynacom's other tankers, including the Suezmaxes *Shanghai* and *Smyrni*, the VLCC *Eliza* and another Suezmax - *Beijing*.

Woo said the company was delighted with its 2013 growth and it had ambitious expansion plans for 2014, harnessing its ability to handle any size of ship with its two giant drydocks and vast space.

"In 2013, we saw ODC continue to establish itself as one of the main shiprepair and conversion locations in the Middle East," he said. "Our focus moving forward will be to win more business from existing and new customers operating bulk carriers, tankers and containerships. We see real potential for growth particularly in becoming a centre of excellence for the repair of LNG carriers.

"Our expansion into LNGCs will further be strengthened by our new licence to support the French engineering firm Gaztransport & Technigaz (GTT), which specialises in cargo containment systems for high-end liquefied natural gas (LNG) carriers." he said. "Our partnership with DSME gives us tremendous experience and technical expertise as it provides 30 highly experienced senior managers, including our CEO Yong Duk Park, to help run the shipyard," he explained.

Financing received

Meanwhile, in Qatar, Nakilat Shipyard joint ventures have received a total of $160 mill financing from al khaliji.

These include Nakilat-Keppel Offshore and Marine (N-KOM) and $40 mill to Nakilat Damen Shipyards Qatar (NDSQ).

"This agreement is a clear demonstration of the strength of our businesses at Erhama Bin Jaber Al Jalahma Shipyard. N-KOM's and NDSQ's track records are testament to the success of the Emir's vision for a world-class marine industry within Qatar," said Abdullah Fadhalah al-Sulaiti, managing director of Nakilat and chairman of N-KOM and NDSQ at the time of the announcement.

To date, more than 200 projects have been completed at the Shipyard since its inauguration in 2010.

N-KOM is a joint venture between Nakilat and Singapore-based offshore rig constructor and shiprepairer Keppel Offshore and Marine; while NDSQ is a joint venture between Nakilat and Dutch shipbuilder Damen.

"The financing of Nakilat's onshore assets solidifies al khaliji's position as a major player in the marine industry backed by our continued growth, our internationally recognised credit rating and the trust our clients have placed in us to continue to deliver innovative financing solutions," according to the bank's group CEO Robin McCall.

"As Qatar continues to generate steady revenues from the hydrocarbon sector to support its plans of diversifying the economy, al khaliji will continue to play an important role in financing oil and gas and marine Industry projects and supporting the country's solid growth and progress," he added.

Late last year, N-KOM celebrated the completion of its 200th project; the repair of the VLCC *Janah Star* from Vela International Marine. The delivery of the vessel coincided with the shipyard's third anniversary, since its opening in November 2010.

The facility has also successfully undergone a re-certification process by the American Petroleum Institute (API) for its ISO 14001 and OHSAS 18001 quality systems.

Eng Abdullah Fadhalah Al Sulaiti, chairman of N-KOM and managing director of Nakilat

CEO Yong Duk Park and marketing director Johnny Woo with the Maersk Wisconsin.

said: "We are very proud to celebrate the completion of our 200th project. N-KOM has positioned itself as a leader in shiprepair well recognised by the regional maritime industry as a premium shipyard providing a full range comprehensive shipyard services. I would like to express our deepest gratitude to Qatar Petroleum and the management, port staff and employees of Ras Laffan Industrial City for their full and continued support and the same which we have received from our valued business partners."

Khalid Alhammad, Vela technical manager, said, "Vela has an excellent relationship with N-KOM, having repaired five VLCCs and a tanker at the shipyard in the past year. We are very satisfied with their quality of services and are equally impressed with the high level of safety upheld at the yard. We look forward to a long and fruitful partnership with N-KOM."

N-KOM has undertaken drydocking and repairs for gas carriers, tankers, containerships and a range of small vessels. The shipyard has also a dedicated offshore & onshore divisions catering to the needs of the oil and gas industry.

Established in 2007, N-KOM is a joint venture between Qatar's gas shipper Nakilat and offshore rig constructor and shiprepairer Keppel Offshore & Marine Ltd (Keppel O&M).

Co-operative ventures

In Dubai, Drydocks World regularly holds meetings with shipowners and other maritime bodies to foster greater co-operation.

Recently, Drydocks World and Maritime World received a high-level delegation from the Suez Canal Authority (SCA), chaired by Admiral Mohab Mohamed Hussien Mameesh, SCA chairman & managing director. Khamis Juma Buamim, chairman of Drydocks World and Maritime World, gave a detailed explanation on the existing plans and future business in Drydocks World and Dubai Maritime City (DMC), adding that the leadership of Dubai supports the marine industry, which in turn enhances the prestige maritime sector and its global significance.

The two sides agreed to develop co-operation and to form a working group to exchange experiences and discuss potential joint projects within the strategic plans for the Suez Canal development.

Another discussion was held with Ravi Mehrotra CBE, executive chairman of Foresight and executive chairman and co-chairman - Europe India Chamber of Commerce, Belgium and Amulya Mohapatra, head of shipping Cyprus.

A number of topics of mutual interest were discussed – the foremost being business opportunities for developing the rig business. Foresight has interests in tankers, offshore drilling and multi-purpose vessels, which are managed from Cyprus.

Foresight wants to run its operations from the UAE. DMC will offer support and assistance for the company to establish itself in the region.

Buamim said, "We are delighted that more and more companies are acknowledging the emerging clout of UAE in the maritime and energy, oil & gas arena. In recent times, there is sustained interest from companies all over the world in the world-class Dubai Maritime City, which holds a cornucopia of companies with maritime interests, creating vital synergies for the growth of the industry, which is emerging from the global financial meltdown." TO

Jones Act trades benefit from US oil revolution

The US is under pressure to repeal the law that forbids the export of crude oil, except for a small amount that goes to Canada.

This move is being driven by the huge increase in shale oil production and offshore production.

Although any changes to the law could still be a long way off and may not even happen at all, for the tanker industry, if crude oil exports are eventually allowed, this will have a mixed impact, Gibson Research said in a recent report.

For the product tanker market, it will mean bad news, as freeing up more crude oil for export - at present around 100,000 barrels per day is being exported to Canada - will at the very least limit the rapid growth in products exports, with a direct impact on the MR trade from the US Gulf to the Atlantic Basin, Gibson said.

Since the US shale oil revolution, there has been a complete change in products tanker trading patterns, with much less being imported but much more being exported. There has also been a considerable increase in the US coastal trades in products, a fact not lost on the Jones Act tanker operators.

Despite, the horrendous cost of building and operating a Jones Act tanker, rates have recently gone north of $100,000 per day, which has persuaded owners involved in the Jones Act trades to both replace their ageing fleets and also to further build up their fleets.

In addition, to product tankers there are fleets of articulated tug and barge (ATB) combinations operating on the waterways and along the coast. Some of the barges are quite large in terms of carrying capacity and are classed for deepsea voyages, as long as they trade between US ports.

Last month, one Jones Act operator announced an order for an ATB. Seabulk Tankers, a wholly owned subsidiary of Seacor Holdings, contracted a 185,000 barrel capacity coastal chemical & petroleum ATB unit from DonJon Shipbuilding. The tug will be built by BAE Systems. Delivery is expected in the first half of 2016, Seabulk confirmed.

This follows an earlier contract awarded to General Dynamics NASSCO, a wholly owned subsidiary of General Dynamics, for the design and construction of one 50,000 dwt LNG-conversion-ready product carrier with a 330,000 barrel cargo capacity, plus an option for one additional vessel. Delivery is scheduled in the fourth quarter of 2016.

Since SeaRiver sold its two VLCCs a few years ago, the largest Jones Act tankers serving Alaska are the four 193,000 dwt Alaskan series built by NASSCO.

This order brings Seabulk Tankers' contracts at NASSCO to three product tankers with an option for a fourth vessel.

Acquisitions

In another move, Kinder Morgan Energy Partners recently entered into a definitive agreement to acquire American Petroleum Tankers (APT) and State Class Tankers (SCT) from affiliates of The Blackstone Group and Cerberus Capital Management for $962 mill in cash.

Kinder Morgan is perhaps better known as a pipeline transportation and energy storage company, owning an interest in, or operating more than 54,000 miles of pipelines with 180 terminals.

Both APT and SCT are engaged in the shipments of crude oil, condensate and refined products in the Jones Act trade.

APT's fleet consists of five MR Jones Act qualified product tankers, each with 330,000 barrels of cargo capacity. With an average vessel age of about four years, the APT fleet is claimed to be one of the youngest in the industry.

Each of APT's vessels is operating on long-term timecharters with major integrated oil companies, major refiners and the US Navy. Each timecharter has around four years to run with renewal options to extend the initial terms by an average of two years in place.

APT's vessels are operated by Crowley Maritime Corp, which is a leading operator and technical manager in the US product tanker industry.

SCT has ordered four MR Jones Act product tankers, each with 330,000 barrels of cargo capacity, from General Dynamics' NASSCO shipyard. Upon delivery, the SCT vessels will be operated on long-term timecharters with a major integrated oil company.

Each of the timecharters has an initial term of five years, with renewal options to extend the charters by up to three years.

Kinder Morgan said that it will invest about $214 mill to complete the construction of the these vessels.

"This is a strategic and complementary extension of our existing crude oil and refined products transportation business," said John

Schlosser, president of KMP's Terminals segment, speaking last year at the time of the announcement. "Product demand is growing and sources of supply continue to change, in part due to the increased shale activity. As a result, there is more demand for waterborne transportation to move these products. We are purchasing tankers that provide stable fee-based cash flow through multi-year contracts with major credit worthy oil producers."

This deal, which is subject to standard regulatory approvals, is expected to close in the first quarter of this year.

Share offering

American Shipping Co (AMSC) has raised about NOK110.3 mill (about $17.8 mill) in a new share offering.

AMSC owns 10 MRs, all of which are on long term bareboat charter to Overseas Shipholding Group (OSG) until 2019. The bareboat charter of the 10 vessels is believed to involve a fixed annual payment of $88 mill, plus 50% of any profit made over operating costs.

In turn, OSG timecharters the vessels out to major oil companies in the US Jones Act trade, including Shell, BP and Tesoro. Two of the vessels were reported to have been sub-chartered to Phillips 66.

OSG also owns two sister vessels outright on long term charter to Petrobras serving as shuttle tankers in the Gulf of Mexico. According to Reuters story published at the end of last year, one of the vessels was chartered out for two successive six months terms at around $110,000 per day.

AMSC said that it had a significant contract backlog, as well as a profit sharing agreement with OSG. Despite OSG's financial problems, which led the company into Chapter 11 protection in November 2012, AMSC said that there have been no payment defaults on the bareboat charters, thus far.

All of AMSC's vessels were built by Aker Philadelphia Shipyard (AKPS). Earlier this year, the yard announced that it had completed a private placement of $60 mill, or 2.25 mill shares at an issue price of NOK165 per share, in a book building process directed primarily towards US institutional investors.

One of AMSC's 10 MRs operated by OSG.

AMSC's operating revenues for the fourth quarter of last year were $22.1 mill, compared to $22.2 mill for 4Q12. EBITDA was $21.3 mill in 4Q13 - unchanged from 4Q12, while EBIT was $12.9 mill, also unchanged from 4Q12.

Net foreign exchange gain was $2.6 mill, compared with a loss of $4.2 mill in 4Q12. The foreign exchange gains and losses, resulting from the translation of Norwegian kroner denominated debt and accrued interest into US dollars, are unrealised and had no cash impact on AMSC.

AMSC reported a net profit for 4Q13 of $4.5 mill, versus $0.6 mill in 4Q12.

AMSC's operating revenues for the full year 2013 and 2012 were $87.3 mill and $87.8 mill, respectively. EBITDA for 2013 and 2012 was $84.2 mill and $84.6 mill, respectively. EBIT for 2013 and 2012 was $50.7 mill and $51 mill, respectively.

Net profit for 2013 was $30.9 mill and net loss for 2012 was $8.9 mill.

Interest bearing debt as of 31st December, 2013 was $801.5 mill, net of $7.5 mill incapitalised fees versus $842.3 mill as of 31st December 2012. This debt relates to the bank financing of the 10 vessels of $580 mill, the NOK denominated bond of $199.9 mill and a loan from Converto Capital Fund of $29.1 mill.

AMSC said that the US Jones Act product tanker market remained strong during 4Q13. Capacity at the two US shipyards, currently able to build product tankers, is nearly fully utilised through

2017 with 11 tankers on order and a limited number of options on hold.

The output from refineries on the Gulf Coast continues to increase, as does the shale oil production. These positive trends are expected to continue.

A strong cash position and improved balance sheet give AMSC the latitude to consider accretive growth and refinancing opportunities, the company said.

In January, Aker Philadelphia Shipyard's CEO, Kristian Røkke, commented: "We appreciate the strong interest shown in AKPS and are pleased to have strengthened our balance sheet in a way that gives flexibility to capitalise on attractive opportunities in the Jones Act."

This private placement will increase the company's financial flexibility, while the net proceeds will be used to provide near-term funding for the tankers being built in partnership with Crowley, fund the equity investment in these vessels and other potential joint venture vessels and provide for general corporate purposes.

Also in January of this year, AKPS started the construction of the first product tanker ordered for joint venture concern with Crowley. Crowley and APSI had signed contracts for four 50,000 dwt Jones Act tankers, with a total contract value of about $500 mill. They will be able to ship both crude oil and petroleum products.

The new product tankers are based on the Hyundai Mipo Dockyard (HMD) design, which incorporates numerous fuel efficiency features, flexible cargo capability, and the latest regulatory requirements. Similar to the NASSCO newbuildings, these vessels will be constructed to be able to convert to LNG propulsion in the future.

APSI is also currently constructing two 115,000 dwt crude Jones Act Aframaxes for SeaRiver Maritime, ExxonMobil US marine affiliate. Both of these tankers are scheduled for delivery in 2014. APSI also has contracts for two 3,600 TEU containerships for Matson Navigation, which will be delivered in 2018.

The SeaRiver Aframaxes will replace two of the three tankers engaged in the Alaska-West Coast crude oil trade.

In January, 2013, APSI completed the construction of the last of 14 product tankers for subsidiaries of AMSC, OSG and Crowley. Two of the tankers were subsequently converted to shuttle tankers.

Another soon to be Jones Act tanker operator is Mid Ocean Tanker Company (MOTC), which is a joint venture between Mid Ocean Marine and private equity firm Alterna.

In early 2011, the new concern purchased the uncompleted Hull No 103 (ex-AHL/Shell) out of bankruptcy with completion due during the first quarter of 2012.

American Phoenix is now trading as US Flag Jones Act product/chemical double hull tanker able to carry 339,000 barrels. She is diesel-electric powered and fitted with twin screws.

Other Jones Act carriers include Polar Tankers, which is a subsidiary of Conoco/Phillips. This concern operates five Suezmax *Endeavor* class crude oil tankers, which deliver Alaskan North Slope crude to US West Coast terminals.

Similar to Polar Tankers, Alaska Tanker Co operates four 190,000 dwt tankers shipping Alaskan crude to the West Coast. They were built at NASSCO between 2004 and 2006.

Alaska Tankers is a joint venture between Keystone Shipping (37.5%), OSG (37.5%) and BP (25%). TO

CMA pulls in a stellar cast

In introducing 'Shipping 2014' conference and exhibition, the Connecticut Maritime Association (CMA) said that whether we like it or not the pace of change in the shipping industry has never been greater and speed is of the essence.

The organisers posed the question, "Where is your money - on the tortoise, or the hare?" In a world of continuously shifting trades, complex global economies, new means of oil production, consumption and sources of manufacturing, new technologies, decision making is pressurised.

This year's event – the 29th- takes place between 17th and 19th March at the usual venue of the Hilton Hotel, Stamford, Connecticut. Such is its popularity that it usually pulls in more than 2,500 people from 50 countries.

One of the highlights of the three-day jamboree is the CMA Commodore Award, which this year will be presented to Robert Bugbee, Scorpio's president, who will receive his 'gong' at the gala dinner.

The conference kicks off on 17th March with the opening remarks from the CMA president Ian Workman of World Fuel Services, which is followed by a state of the industry debate led by moderator Peter Hinchliffe, Secretary General, International Chamber of Shipping (ICS).

Other speakers include John Denholm, chairman & CEO, J & J Denholm and president of BIMCO; Masamichi (Matt) Morooka, president & CEO, NYK Bulk & Projects Carriers and ICS chairman; Gerardo Borromeo, vice chairman & CEO, Philippines Transmarine Carriers and president of InterManager; Bob Bishop, executive director, V Group and vice chairman, INTERTANKO; Nicholas Pappadakis, CEO, AG Pappadakis & Co and chairman emeritus, INTERCARGO; plus Roberto Cazzulo, chairman, RINA Services and IACS chairman.

During the morning session of 18th March, supply and demand takes centre stage. The keynote speech will be given by World Fuel Services' chairman Paul Stebbins.

Jack Buono, president and CEO of SeaRiver will be looking at the US energy situation both

today and in 20 year's time from an ExxonMobil perspective. Looking at the Asian perspective will be Esben Poulsson, chairman Avra International, honorary secretary of the Singapore Shipping Association and ICS vice chairman, while the question of leadership will be addressed by Christopher Wiernicki, ABS' chairman and president.

The conference follows its usual format with three breakaway sessions planned for the morning and afternoon. During the morning, session No 1 will look at investment under the watchful eye of moderator Henriette Brent-Petersen, managing director, Shipping & Offshore Research, DVB Bank.

Other speakers include Erik Helberg, CEO, RS Platou Markets; Erik Hånell, president & CEO, Stena Bulk; John Su, managing partner & CEO, Erasmus Shipinvest and Jason Klopfer, commercial director, Navig8 Americas.

Session 2 looks at the possible economic returns of the technology available under moderator Robert Kunkel, president, Alternative Marine Technologies (AmTech). Lloyd's Register's Tom Boardley will give the keynote speech and Brent Perry, CEO, Corvus, plus David Adamiak, hybrid drive power and energy manager, BAE Systems will be speaking.

Session 3 will be looking at the Maritime Labour Convention 2006 (MLC) some six months in.

The afternoon's breakout sessions will include a look at the so called 'Smart Ship' with the keynote speech being given by Inmarsat Maritime president Frank Coles, while ClassNK; Fred Finger, vice president & general manager, Fidelio Limited Partnership; Warwick Norman, CEO, RightShip and Paul Østergaard, founder & CEO, ShipServ will give the talks. The moderator is Neville Smith, director, Mariner Communications.

Another session will look at the energy switch with Dr Edward Morse, managing director, global head of commodities research, Citi; Dr Gerd-Michael Würsig, business director, LNG fuelled ships, DNV GL; Shell LNG; Ole Grøne, senior vice president, promotion and sales, MAN Diesel & Turbo; STX Marine and Dr Young Kee Chon, chairman & CEO, Korean Register of Shipping presenting the papers.

The third session will look at the future of the job market.

On 19th March, the first breakaway session will look at vessel operations under moderator Thomas Pappas, director, Sapient Global Markets with a panel discussion involving Capt Michael Wilson, president, Laurin Maritime (America) and Capt John Hill, Heidmar and Angus Frew, secretary general, BIMCO.

Philippe Cambos, director oil & gas projects, Bureau Veritas Marine & Offshore Division, will look at the trends in Arctic shipping, including the Polar Code, while the US ballast water rules will be discussed by Barry Hartman, partner, K&L Gates and scrapping trends will be addressed by Evan Sproviero, trading, projects & finance, GMS (USA). Another speaker will speak about carbon trading.

Bunkers will be covered under moderator Llewellyn Bankes-Hughes, managing director & publisher, Petrospot with a paper being given by Al Canal, CFO, Bunkers International Corp; Adrian Tolson, general manager – North America, OW Bunker North America; Ebony Smith, director, price risk management programs, World Fuel Services Corp, Katharina Stanzel, managing director, INTERTANKO; Steve Bee, global business director, Intertek (Lintec) Shipcare Services and Jean-Philippe Roman, technical director, marketing and services, Total Lubmarine.

During the afternoon, speakers will be looking into their crystal balls with Gary Vogel, partner & CEO, Clipper Group; Philippe Louis-Dreyfus, president, Louis Dreyfus Armateurs Group and CMA Commodore 2010; John Schmidt, president & CEO, McQuilling Partners; Tom Roberts, partner, Compass Maritime Services and Robert Burke, partner & CEO, Ridgebury Tankers.

Finally, a legal session will be moderated by Peter Drakos, Peter G Drakos. TO

What are the lessons learned?

In a rapidly changing maritime world, the only factors that have remained constant are the seafarers and those onshore, managing the vessels.*

Elsewhere, technological developments have for example, resulted in a fundamental change in the way vessels are navigated, such as the introduction of the GPS and ECDIS.

However, the Minimum Safe Manning Certificate has not changed, despite the numbers of seafarers on board each vessel being considerably reduced in the past couple of decades.

The biggest change has been seen in the way information and communications are handled between ship and shore, through the introduction of satnavs and satcoms.

Ship/shore communications have totally changed with the introduction of Broadband technology through Inmarsat, or VSAT. This has considerably increased the amount of information and data exchange flowing between the ship and shore, while at the same time, it has also resulted in seafarers becoming closer to their families via satellite links.

Does this translate into more efficient vessel management?

A recent study showed that 90% of data accumulated in past 12 years was generated during the last two years alone. To put it simply, the data created worldwide in the last 12 months would fill 57 bill Ipads!(1) And where do we go next?

When is the amount of information enough for a Master and the seafarers? Does this IT revolution require more information to be relaid to a Master and his, or her, staff for safe ship operations? The situation in a shipmanagement office is no better as a huge amount of data is being generated and received seemingly from everywhere.

Another study showed that average data volume for VSAT equipped vessels is around 40 gigabytes per month. However, this average figure has increased by 50% in the last 12 months, resulting in about half a terabyte of data per ship per year(2) for a smaller number of seafarers on board, compared with 30 years ago! It is anybody's guess on how much further this will grow going forward!

With new regulations continuously increasing, such as SEEMP, VOCMP, VGP etc, much more record keeping and reporting is required. There appears to be little control on new and forthcoming requirements and consequently to the new data that needs to be processed.

Hence, it's time to analyse just how much increase in volume of information is needed for safe ship operations and how to manage this data properly.

A recently conducted survey by Danish Maritime Authority (DMA) (3) showed that seafarers use around 20% of their working day on dealing with what they consider to be administrative burdens.

Summarising the challenges imposed by continuously advancing IT technology in shipping today and looking at the possible solutions for the future, every owner, charterer, sub-charterer, voyage charterer, oil major, IMO, etc have their own formats for Noon reporting only, for example.

Masters on several ships are now sending as many as six Noon reports every day!

For even essential record keeping and reporting, such as for accident, illness & injury reporting; incident investigation; KPI reporting, etc, each company (and charterers) has its own format.

When a Master and/or ship staff changes company, they have to adapt to new formats, thus wasting valuable time and losing focus on important vessel operational tasks.

An airline industry study showed that about $150,000 was spent on familiarisation each time a pilot had to handle a different aircraft. There should be some data available as to how much time, energy and resources was spent in just handling and understanding the different formats and structure every time senior officers change ship, let alone the different instruments/machinery that needs to be handled.

There is an urgent need to create a format and structure for regular reports/records and log books to a common standard, so that the Master and his, or her, ship staff can focus on the job from the time they join the ship, rather than waste time in understanding the reports and documentation.

While talking about standardisation in information management, ECDIS is soon going to be the primary means of navigation on all vessels. The structure and control of this most important navigational equipment should also have a common standard. ECDIS manufacturers, under the guidance of the IMO, need to come to a common consensus soon.

Are the tasks repeated too often (%)?

	PSC, FSC, class inspections	Vetting inspec-tions	ISPS require-ments	Exercises and drills	Internal QMS	Jour-nals	Port and pre-arrival
Disagreement	34	35	34	49	37	41	29
Agreement	66	66	66	51	63	59	71

Table 4 *The tasks require too much documentation and/or paperwork (%)*

	PSC, FSC, class inspection	Vetting inspec-tions	ISPS require-ment	Exercises and drills	Internal QMS	Jour-nals	Port and pre-arrival
Disagreement	24	24	27	37	24	35	21
Agreement	76	76	74	64	76	65	79

Source - DMA Summary Report on Administrative Burdens in the Maritime Sector.

Ajay Tripathi

Each port requires many certificates and other information with attachments every time a ship calls even when re-visiting the port within the same week - imagine a ship calling at Singapore, Indonesia, Malaysia and Thailand! This time can be utilised for more important tasks.

Why does each and every circular from a flag state need to be on board a ship? Why it can't the information be filtered by the flag state so as the minimum required is designated for a vessel?

There should be one questionnaire, which can provide all the information about a ship required by charterers, terminals and traders, etc. The onus of keeping it updated at a common accessible location should rest with operator.

Most shore staff struggle to extract meaningful data, wasting valuabletime and resources. Compiling officers matrix, extracting ship certificates, vital ship info, survey status for external parties, are just some examples of his valuable time.

Why can't ship's information be available on an open platform accessible with a click of mouse where there are no secrets? Several public/private platforms starting with classification societies, IHS Fairplay, Port State Control, AMSA, US Coast Guard, Q88, RightShip, flag states, in addition to shipowners/managers, hold each and every piece of information about a ship since her keel was laid.

Let the responsibility of keeping the data base up to date rest with shipowners and other stakeholders and the Master be exempted from such tasks.

Data mining

In these changing times, when commercial shipping practices are being examined through a microscope, a proactive approach in shipmanagement ashore is also needed. There is also little tolerance towards breakdowns and accidents, due to the ever mounting commercial commitments.

With current IT tools, systems should be in place which can detect and predict problems before they occur and can also suggest counter measures to reduce such risks.

The data collection should be such that it will give direct projection (output) for the future where that ship's performance is heading. For instance in cases of incidents, causes of incidents, types and causes of breakdowns, etc.

Real time monitoring of vessels will provide a running update on lapses and show improvement in vital areas, such as training, management, resources, infrastructure and procedures.

It is time that ship managers/owners start building a web-based, or similar database application, that assists in handling, processing, analysing and monitoring this data, where extracting info through computer apps should be possible.

There is need to make these applications more efficient, with a focus on minimising the administrative burden on the seafarer. This process should not only provide quick extraction of info but it should also give a projection of the performance of the ship and company in that area on a continual basis to weed out unnecessary information and reduce the non-productive seafarers' workload.

At the same time, the shipmanager should also be able to benchmark the performance of a ship, or fleet, internally, as well as externally on all available platforms, which is an essential ingredient for continual improvement.

Each piece of information, or a report, received from a ship should also give its performance status and future projection, as soon as it reaches the office. This will help operators to quickly look into a vessel's performance to focus on improving that area of operation.

Conclusion

With the IT revolution, there is an increasing volume of communication between ship-shore on a day-by-day basis but human resources handling this data remains the same. There is an urgent need to ensure that this information is being converted into end output (knowledge) both on board ship and ashore.

More importantly, the time saved on board and ashore by optimising the information exchange, should be used for taking immediate and long term action to improve safety and commercial performance of a ship and also of the company.

TO

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1) **http://fr.slideshare.net/orangebusiness/ unlocking the value of big data**
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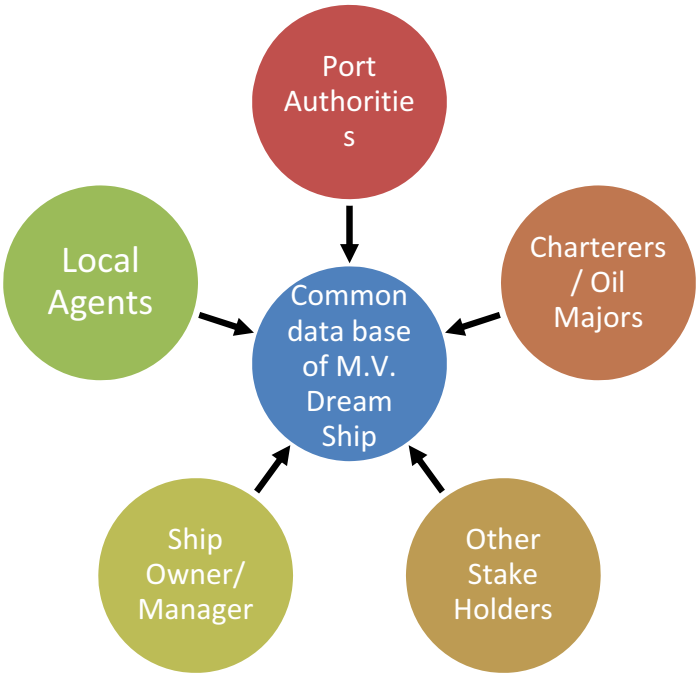
**This article was written by Ajay Tripathi, of MMS, Tokyo/Singapore. It first appeared in the January/February issue of Ship Management International (SMI).*

Common database for accessing a ship's info



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Wärtsilä's service offering keeps vessels moving

Similar with many large companies, Wärtsilä's after sales business has grown considerably down the years in line with the growth in the company itself.

The appointment of Pierpaolo Barbone to the post of president of the Services business and executive vice president and member of the board of management at Wärtsilä, which became effective on 1st October last year, gave *Tanker Operator* the opportunity to examine this sector of the business.

His brief is to look after every aspect of Wärtsilä's service sector and link them to the company's customer activities. Despite the company seeing a slight downturn in its overall sales activities, Barbone said the outlook of the service market remains stable, although it is prone to currency fluctuations worldwide. In 2013, Wärtsilä's net sales were €4.7 billion, of which Services accounted for 40 per cent.

Wärtsilä is currently going through what is described as a 'realignment of resources' which is connected to the announcement in late January of around 1,000 job losses globally. "We have to be more efficient and competent in order to serve our customers better. This way the business will grow and the customers also benefit," Barbone said. "We are focusing on an efficient presence where the customers are. We have to be dynamic with our footprint both in terms of scope of activities and presence."

To benefit customers, Wärtsilä is looking to increase the scope of supply, for example in the field of long term service agreements on servicing and maintenance, as is the life cycle management. The two are obviously inter-linked.

"These are unique and beneficial for our customers, enabling us to get closer to the client," Barbone explained. "We are trying to make a difference in product management and expand our value proposition in the market."

He gave an example of LNG vessels where he claimed that Wärtsilä's competence can make a difference to the vessels' operation by offering technology support, plus the planning and performing of activities.

"We need to think about optimisation, not only with life cycle management but also unscheduled equipment maintenance. An optimised platform is the future with a knowledge base service model to optimise the life cycle maintenance," he stressed.

He explained that the marine engineering world is becoming data driven, enabling a one-stop solution to be offered from an optimised platform, which is the future for Wärtsilä's service offering.

By making the most of the high quality data flow from on board installations and by using trend analysis, this should lead to less maintenance and repair work on board.

Wärtsilä is active in around 160 locations in 70 countries and further outlets will be opened where they are needed, Barbone said, especially where volume is a key factor. "We will continue to invest where it is needed," he said. "We must increase our footprint, where the shipping hubs are growing their presence."

One example is the giant warehouse complex at Kampen, the Netherlands, which was opened a few years ago and the more recent complex opened in Brazil. The Dutch facility has taken over the duties of eight different warehouses under one roof, becoming a heavily automated completely centralised distribution centre, which has paid off in terms of efficiency and speed of operation.

Barbone said the Middle East and Asia are the largest areas for service agreement opportunities in the shipping business and Africa for land-based power plants. Angola is a country that could prove very interesting given its potential for oil and gas.

Flexibility is also key in being able to offer a solution to cater for a customer's needs, especially as shipping companies become more efficiency oriented and the models

Wärtsilä has consolidated its European service warehouses at kampen, The Netherlands.

Wärtsilä's new service sector president, Pierpaolo Barbone.

become more advanced, such as the improvement seen in root cause analysis to optimise performances.

"We are the antennas, which can carry out surveys on board ship. For example, in the fields such as operations, quality, health and safety and the environmental aspects on running a vessel," he said.

Information about equipment performance on board ship can be accessible at Wärtsilä's centres for analysis to see if any actions are needed. Here, the company's network of centres forms a very important tool, as they are in direct communication to enable research and development to be conducted quickly and efficiently.

"Owners are more cost conscious being influenced by market demand in order to optimise efficiency," Barbone explained.

At the same time, he said that Wärtsilä has had to become more efficient with each area having up to a 10% target sales growth. Barbone said that he was cautiously optimistic for business opportunities this year.

He is in charge of 10,800 people in the service sector. Competent resources are needed to service vessels, either in the centres, or on board. Competencies are also needed on new products and here training is a key element, both in-house and for seafarers on board ship, as customer training is also offered.

Wärtsilä has a very broad service offering, which includes, among others, services for engines, propulsion systems and environmental solutions, as well as major repair and conversion projects and long term service agreements.

Wärtsilä is a believer in professional skills management and a total of 10 training centres have been set up in all parts of the globe, including America, Asia and Europe. Online computer-based training is also offered for those on board ship and for company employees in the field. Hands-on training is very much related to the individual product, or equipment being used, Barbone explained. TO

Pierpaolo Barbone

A 56-year old Trieste graduate, Barbone, MSc (Eng) gained a Masters degree in mining. He started work in South America.

His main introduction to the power generation sector came when he was working for a small diesel engine manufacturer attached to Fincantieri.

Barbone joined Wärtsilä in 1996, becoming vice president of the services sector in Italy.

He has since held several management positions within the services business, including leading the services activities for the Middle East and Asia region and the field services globally. Since the beginning of 2013, he has worked as vice president of Services, South Europe & Africa.

In his own words he said that he had experienced the business from Singapore to Africa, before moving to Helsinki during the middle of last year to take up the position of president of Services, replacing Christoph Vitzthum who left Wärtsilä to become president & CEO of the Fazer Group. ■

EU ban on Filipino officers warning

InterManager has warned shipmanagers to put in place sensible contingency plans should Filipino officers find themselves banned from working on EU-flagged vessels.

This move should guard against a worst-case scenario and follows concerns raised by the European Maritime Safety Agency (EMSA) over the ability of the Philippine Maritime Administration to fully and effectively implement all provisions of the STCW Convention.

InterManager said that the warning was intended to put a perspective on anxieties about what the EU may ultimately decide with regard to the results of EMSA's most recent audit of the Philippines in October 2013.

Meantime, the Philippine Government and industry representatives are working together to rectify the original EMSA findings and Philippine sources were confident this continuing effort and work in progress will achieve the desired results for all stakeholders, the shipmanagement organisation said.

To mitigate the immediate impact of any possible ban that may be promulgated by the EU, InterManager has called on all shipmanagers to ensure their Filipino officers have extended the validity of their CoCs prior to any ban coming into force. The EU has indicated that, if a ban were to take effect, this would not be levied against valid and active CoCs.

Five years grace

By extending the validity of their CoCs, the Filipino officers will be able to gain a maximum five year grace period. Should the EU implement a ban, a subsequent resolution may likely be found within this five year grace period, InterManager said. For example, Georgia, which had recently been subjected to a similar ban, resolved its shortcomings within two years.

Owners and managers should also hold discussions with various Port State Control authorities to extend this five year window to Filipino officers serving on non-EU flagged vessels, which may call at EU ports.

Industry discussions are underway with a number of countries, such as the UK, Norway, The Netherlands and Belgium, to allow their recognised maritime schools to assess cadets for their CoCs, thus allowing those cadets to qualify for service on board EU-flagged ships.

InterManager president, Gerardo Borromeo, said: "The message we are giving out as responsible shipmanagers is that our primary duty is to ensure that ships continue to sail safely and efficiently, which means we will put the right people on board these ships and, in the case of Filipinos, we will work with the right crewing institutions and entities to ensure these officers are properly trained and certificated." TO

Lessons learned from ISO PAS 28007 pilot audits

An update on the ISO 28007 pilot audit process was given at a seminar held in London on 29th January, 2014*.

The purpose of this event was to allow potential certification bodies to share their experience of the pilot audit programme through a lessons-learned briefing hosted by the Security Association of the Maritime Industry (SAMI), and the Private Maritime Security Companies (PMSCs).

The briefing was attended by more than 100 delegates with the majority being PMSCs providing armed security for ships in high risk areas (HRA) and other stakeholders, plus professional maritime associations that have invested time and expertise in supporting the development of the standard, such as BIMCO, ISO, maritime law firms, P&I Clubs, and representation from the European Union.

Since the introduction of armed guards on board ship, no vessel carrying an armed security team on board has been successfully pirated thus far, despite a number of attempts.

However, the rapid development of companies offering armed guard services and their initially wide ranging standards has brought concerns from shipowners, insurers and flag states alike regarding the risks they might face in the event of an incident, or mistake. With the help of SAMI and all the stake holders involved, a series of standards included Best Management Practice (BMP), rules for the use of force (RUF), training needs and weapons licensing were developed.

These standards enabled a safe and graduated series of escalating responses in terms of the use of force to be developed to minimise the risk of accidents, protect everyone involved in terms of human rights issues and ensure that the process was within the legal high seas standard where self-defence is acceptable but engagement is not.

Within the existing framework of the supply chain standard ISO 28000, the new ISO PAS 28007 provided a risk-based quality management system to give ship operators and other stakeholders the confidence that those holding this new ISO accreditation will be able to uphold the security and safety of vessels and their crews in the HRAs to a recognised and trusted standard. This standard would also be supported by BIMCO, global shipowners associations and the EU, among others.

At the pilot audit briefing, each of the certification bodies - LRQA, MSS Global and RTI -outlined lessons learned during the pilot audit, thus far. RTI also suggested areas where the BIMCO standard security contract GUARDCON, developed for shipowners and PMSCs, might be enhanced to further clarify responsibilities between the two parties, reduce risk and help protect security teams during the potentially risky transfers at sea between launch and the vessel.

RTI marine director Steve Cameron explained that the use of highly experienced Master Mariner auditors ensured the PMSCs procedures and their integration with ships' ISM and SMS systems was carefully assessed and the auditors were able to add value from their knowledge of both security and maritime risk and safety requirements.

Assessments lacking

Cameron noted there were some concerns that the risk assessments of PMSCs were not always robust enough and the ISO 28007 pilot study had given everyone a chance for reflection and for remedial action to be taken. There was insufficient focus, or reference to ISO 28000 and the assessment of the supply chain risks from end to end, he said.

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He further explained that GUARDCON did not address operational safety requirements for the vessel's Master (for example, during embarkation/disembarkation at sea) and as a result, there was still work to be done to drive PMSC's maritime operational improvements. He suggested that there should be clear written obligation on the Master to do all that is necessary to ensure a safe transfer. Sections should be added to GUARDCON on operational safety issues and armed guards' welfare, he said.

For example, there could be a situation where instructions should be given to the launch skipper not to attempt a transfer if it is considered that the lee shelter is insufficient. In addition, the transfer ladder should be given a simple risk assessment before use. He suggested that SAMI, or IMPA, could run training courses on risks when boarding vessels, such as the wearing of lifejackets, the use of pilot ladders and launches.

In addition, there were insufficient numbers of medical staff on board and he said that STCW was not sufficient, as no trauma training is mentioned. Legislation should also be clear on Export Control Order 2008 and BIS licensing for UK nationals working for non-UK domiciled companies.

Furthermore, owners often did not understand the legal issues of weapon transfers over national borders when vessels deviate. A list of ports either with, or without, disembarking restrictions should be published.

Cameron gave another example of guards who are required to stay on watch for four hours in 40 deg C plus heat without shade on a bridge wing without access to toilets, or drinks. He suggested that guidance to Masters should be issued allowing the guards free access around the bridge area.

One of the most popular embarkation/disembarkation points is Galle, Sri Lanka. Cameron said that a combination of unlit buoys and launches used without radar had resulted in Masters using searchlights to avoid collisions. Cameron suggested that SAMI could put pressure on the port authority to make the necessary improvements, as the PMSC sector has brought significant revenue to the area.

Cameron also explained that the discussions highlighted the difference in approach from that of West African operations, where within territorial waters, national security forces armed guards must be used. Ship operators can employ an unnamed security consultant on board for a transit of the area to brief the Master and seafarers on security and the current risks. TO

*This article was written with the help of RTI marine director Steve Cameron.

Solace Global appoints security advisory board

As part of its continued expansion, Solace Global, a provider of security in maritime, offshore and land-based environments, has formed a security advisory board.

Since its establishment in 2010, Solace Global has become one of the world's premier private maritime security companies (PMSC). It has appointed Michael Crawford CMG and Russell Corn to its newly formed board. ■

Criminal gangs operating widely in the Gulf of Guinea

Most attacks in West African waters are part of a long running criminal programme of cargo theft, or kidnapping and ransom inside territorial waters and not piracy said maritime security company GoAGT.

Nick Davis, GoAGT CEO said: "The growing problem in West Africa is criminality and it is very well organised. Criminal gangs board ships, take them over and then move them to a safe area where the cargo can be stolen. They then leave."

Recently the Aframax *Kerala* disappeared, her cargo was stolen and then she reappeared. Davis said: "This case of product theft shows one of two distinct threats to maritime security in West Africa and the Gulf of Guinea. The other is kidnapping and ransom. Both involve different gangs and groups that vary in nature and *modus operandi.*

"These criminal organisations are well armed and resourced, with speedboats to approach a target, people capable of operating an attacked vessel and engineers to pump out the product into a bunker barge, which can take between 3,000 and 6,000 tonnes. Each operation is meticulously planned.

"Attacks on tankers in West Africa have shown that there is immense organisation and an extremely good human intelligence matrix behind each ship that was temporarily detained for the illegal transfer of its cargo," he said.

None of the attacks involving cargo theft is speculative. There is a very well organised machine behind these operations specifically targeting refined products such as marine gasoil, or diesel, which are easy to sell on the black market. Criminals receive details of all ships arriving and the cargo they are carrying to any terminal in the Gulf of Guinea from commercial agents who are put under pressure to disclose information.

If the gangs are low on reserves of a particular product they will go after it. Once they know that a vessel carrying that product will be in transit through the Gulf of Guinea, they will position speedboats well in advance to be ready to intercept it and take it over. They will then make contact with the bunker barge and complete the transfer in 12 to 24 hours.

Davis added: "There is no point in resisting these attacks. Crews need to be exceptionally well trained and understand that if they try to interfere with or stop the criminals, then things will get brutal. Cargo is insured, life is not.

"However, there are plenty of warning signs and these incidents are entirely avoidable. A well trained crew carrying out good visual lookout and radar watchkeeping should be able to see a speedboat, or suspicious vessel, approaching four to six miles away, leaving more than enough time to warn authorities, ask for international assistance and get the crew safely into the citadel.

"Kidnapping and ransom has seen an increase in the past 12 months. Measures implemented off Somalia have shown that the way forward to mitigate and reduce the risk of any personnel security concerns is primarily to concentrate on radar watchkeeping and visual lookout for any suspicious activity. Having a citadel is also vital to guarantee the crew's safety but it seems that merchant shipping transiting through the Gulf of Guinea have not learnt the same lessons from the Indian Ocean.

"Ship Masters, Chief Engineers and European crew members are at risk, particularly those on board drycargo and oil support vessels. Once again, agents ashore receive the lists with all the people on board a ship and they may be put under extreme pressure by the gangs to disclose this information.

"Crew training, awareness and an understanding of how quickly events can unfold are essential. There has to be a security routine in place because if criminals manage to get on board, crew that are on deck carrying out their daily tasks instead of being in the citadel are likely to be held hostage and taken ashore. They won't be released until a ransom is paid.

"There is a lot that happens before a ship is actually attacked and much more overt measures should be taken to restrict the movement of unauthorised vessels in the region, particularly the small speedboats that go out with the intent of intercepting and boarding the targeted ship," said Davis.

He added: "However, until there is an official deterrent in the Gulf of Guinea, which would cost billions to put in place and needs international co-operation between all of the states in the region, the situation is not likely to get any better and the shipping industry will have no choice but to provide its own protection."

Cargo theft, kidnapping and ransom are likely to continue in the Gulf of Guinea and criminal organisations are now very keen to move outside of Nigerian waters, he warned.

TO

New IMO committee discusses IBC Code

At the inaugural session of the IMO's new sub-committee on Pollution Prevention and Response (PPR 1), formerly the BLG committee, held between 3rd and 7th February, the principal issues discussed are outlined below.*

High viscosity and persistent floating substances - A group of European countries submitted a paper outlining concerns over substances washing up on beaches on Baltic and North Sea coasts.

While it is still unclear whether these residues are from legal, or illegal discharges, it is suggested that measures need to be taken to prevent further instances. No formal proposals have thus far been made, but a number of areas have been identified for future consideration, including:

- Expanding the prewash requirements, possibly to include all products defined as 'persistent floaters' in the GEESAMP Composite List.
- An amendment to the definition of 'high viscosity' in MARPOL Annex II to "…50 mPa at 20 deg C" instead of "…50mPa at discharge temperature."
- Amending the definition of 'en route' for the purposes of discharge of residues to prevent vessels from going out to discharge residues and then returning to the same port.

The International Parcel Tankers' Association (IPTA) pointed out that all the above measures are dependent on the availability of adequate reception facilities and since there are well over 150 products in the IBC code that are defined as 'persistent floaters', including all the vegetable oils and animal fats, which are extremely high volume products, this would imply a serious commitment on the part of IMO member states and terminals.

IBC Code Review - The IMO's Evaluation of Safety and Pollution Hazards of Chemicals (ESPH) group is looking to revise the criteria for the assignment of carriage requirements, as part of its work aimed at eliminating inconsistencies in the carriage requirements in chapters 17 and 18 of the IBC code.

To this end chapter 21 of the IBC Code is under review and the group considered a draft revised chapter and agreed that this would be used as the basis of the review of the cargoes in chapters 17 and 18.

If these criteria are applied to cargoes in the IBC Code, there will be a number of changes in ship typing, including the likelihood of eight products moving into Type 1, namely:

- Allyl alcohol.
- Carbon disulphide.
- Chloroacetic acid (80% or less).
- Chloroshulphinc acid.
- Fluorosilicic acid (20-30%) in water solution.
- Glutaraldehyde solutions (50% or less).
- Motor fuel anti-knock compounds.
- Nitrating acid (mixture of sulphuric and nitric acids).
- beta-Propiolactone.

There are a number of products for which data

Appendix 1 (see page 31)

	Cleaning Additive	Manufacturer	Reporting Country
1	MarClean BioSolve Tank CC	The BioSolve Company	USA
2	Chemipol	Chemo	Greece
3	Dye out	Chemo	Greece
4	Igs cleaner	Chemo	Greece
5	Tankshine	Chemo	Greece
6	Er-teepol	Ertek kimya tic.ve san.ltd.sti	Turkey
7	Erclean-hcf	Ertek kimya tic.ve san.ltd.sti	Turkey
8	Erclean igs	Ertek kimya tic.ve san.ltd.sti	Turkey
9	Erclean ctc	Ertek kimya tic.ve san.ltd.sti	Turkey
10	Er-apc aqua	Ertek kimya tic.ve san.ltd.sti	Turkey
11	Coal tar remover	Ertek kimya tic.ve san.ltd.sti	Turkey
12	Rust remover	Ertek kimya tic.ve san.ltd.sti	Turkey
13	Er-apc extra 200	Ertek kimya tic.ve san.ltd.sti	Turkey
14	Er-hdc	Ertek kimya tic.ve san.ltd.sti	Turkey
15	Erclean buffer	Ertek kimya tic.ve san.ltd.sti	Turkey
16	Er-apc extra 50	Ertek kimya tic.ve san.ltd.sti	Turkey
17	Multicleaner	Ertek kimya tic.ve san.ltd.sti	Turkey
18	Seaclean t	Bluetec srl	Italy
19	Ecoclean	Bluetec srl	Italy
20	Alkaclean	Bluetec srl	Italy
21	Acquaclean MPA	Bluetec srl	Italy
22	Rust clean	Bluetec srl	Italy

is missing and the intention is therefore to issue a circular setting out the planned revision of chapters 17 and 18 of the IBC Code, highlighting the products for which there is incomplete data and requesting that industry provide data to plug the gaps.

One new product was evaluated for List 1, together with seven products for List 3. All of these products will be included in the next edition of the MEPC.2/Circ.

A total of 22 cleaning additive were found the meet the criteria outlined in MARPOL Annex II. These products are listed in Appendix 1.

Generic Cleaning Products- Following reports from IPTA members of instances of vessels being penalised by Port State Control and/or vetting inspectors, for having generic products such as Caustic Soda on board for tank cleaning purposes, the association submitted a paper proposing that a note be inserted at the beginning of Annex 10 of the MEPC.2/Circ, clarifying that where a product appears in the IBC Code it is not necessary for it to be shown in Annex 10 of the MEPC.2/Circ.

The sub-committee agreed to this proposal and the following text will therefore be inserted at the beginning of Annex 10 in the next edition of the circular:

"It should be noted that where products or their solutions that appear in chapter 17 or 18 of the IBC Code, or list 1 of the MEPC.2/Circular, are used as washing media, their discharge shall be governed by regulation 13.5.1 of MARPOL Annex II and they do not need to be listed here."

The discussions leading to the drafting of new SOLAS regulations in relation to the application of inert gas had raised the question of how to deal with cargoes containing oxygen-dependent inhibitors.

It was agreed that an amendment should be made to the IBC Code requiring shippers of such products to state the minimum level of oxygen required in the vapour space of the tank for the inhibitor to be effective.

It was further agreed that a circular will be issued setting out this requirement to cover the period the amendment becomes effective. The text of the circular can be found at Appendix 2 below.

Blending on board- The SOLAS amendment prohibiting the blending of MARPOL cargoes on board during the voyage came into force on 1st January this year but there is still apparently some confusion, particularly in relation to Annex I cargoes, as to the extent of the ban.

It was agreed that guidance needs to be issued clarifying this issue and proposals were invited to MSC 93 in May this year. It was agreed that the clarification already obtained by IPTA that the prohibition does not apply where cargo is recirculated within its cargo tank, or through an external heat exchanger, would be included in any future guidance. TO

**Tanker Operator is indebted to Janet Strode of the International Parcel Tankers' Association (IPTA) for providing this update.*
She will be reviewing the IBC Code- Cargo carriage requirements impact on MARPOL Annex II, EU & CODEX vegetable oil at the forthcoming chemical and products tanker conference.

Appendix 2

Draft MSC-MEPC/circular - Products requiring oxygen-dependent inhibitors

1) The Maritime Safety Committee (MSC), [at its 93rd session], and the Marine Environment Protection Committee (MEPC), [at its 66th session] agreed that, taking into account the 2014 amendments to SOLAS and the IBC Code with respect to the application of inert gas when carrying low flashpoint cargoes on ships built on, or after 1st January 2016, reviewed a proposal of the PPR sub-committee to ensure the provision of further information when carrying cargoes that require oxygen-dependent inhibitors.
2) The committees agreed that the existing IBC Code paragraph 15.13.3.2, which requires the Certificate of Protection to state "whether the additive is oxygen-dependent" should be amended by a r equirement that states "whether the additive is oxygen-dependent and if so, the minimum level of oxygen required in the vapour space of the tank for the inhibitor to be effective must be specified."
3) This information provided on the Certificate of Protection should be taken into account in the operation of the inert gas system to ensure the oxygen level does not fall below the level indicated on the certificate.
4) Member governments are invited to bring the content of this circular to the attention of all interested parties.

Background

The background to the IBC Code review is that the alleged inconsistencies identified in chapters 17 and 18 have led to concern that there is a two-tier Code currently operating.

While there was a desire to correct this imbalance, it has been established that applying the current safety criteria to all the products in the IBC code could have some far reaching effects, including a number of high volume products being assigned Ship Type 1 and/or Tank Type 1G.

Since these measures would not necessarily be appropriate for the hazards identified, it was agreed that the criteria themselves should be examined to ensure that the safety measures imposed were indeed appropriate for the hazards presented by individual products.

The International Parcel Tankers' Association (IPTA) proposed that the criteria based on Saturated Vapour Concentration values when assigning ship and tank type, venting, gauging and vapour detection requirements be included.

This was intended to provide an option for less stringent requirements for toxic products that were likely to produce little if any vapour and would thus not present a significant inhalation hazard.

The October 2013 session of the ESPH Group heard that by applying these new criteria on the basis of data currently held on the products in the IBC code, a number of products might change ship type but overall the effects were likely to be far less drastic than would be the case if applying the current criteria.

The IMO's 92nd MSC held in June 2013 approved amendments to SOLAS and the Fire Safety Systems Code to mandate the use of inert gas on new oil tankers of below 20,000 dwt and new chemical tankers.

These amendments provided for a lower lower size limit of 8,000 dwt and allow for vessels of less than 20,000 dwt to use shore-supplied inert gas rather than install an inert gas system where appropriate.

There was also a provision for chemical tankers to have the option of dispensing with the inerting of tanks prior to loading, providing that inert gas is applied for the discharge and thereafter throughout the tank cleaning phases.

On the assumption that these amendments are adopted by MSC 93 in mid-2014, IPTA said that we may expect the regulations to enter into force for new ships in January 2016. ■

MRs to the fore

There could be as many as 295 MRs of between 40,000-59,999 dwt on order worldwide, representing 25% of the present trading fleet, according to one broking source.

McQuilling Services annual 'scorecard' for 2014 shows that there were 876 MR2s in service last year, up from 867 in 2012. The forecast for 2014 is 904 vessels operating, an increase of 3%. Conversely, the smaller MR1 segment number is forecast to fall by 2% this year to 325 vessels from 333 recorded in 2013 and 332 in the previous year.

There are around 56 MR2s due for delivery this year, compared with 39 last year and only 19 in 2012. A further eight MR1s are due to enter service during 2014, which goes to show the popularity of the larger MR segment over its smaller counterpart.

According ot McQuilling, MR2 demand, expressed in billion tonne/miles, will be 758 this year as against 740 and 718 in 2013 and 2012, respectively, a rise of 2%. Again conversely, the MR1 demand is expected to drop by 2% to 148 bill tonne/miles.

Newbuilding MR2s asset prices were put at $33 mill for this year and $23 mill for a five year old vessel on the secondhand market. However, these figures could prove to be a bit on the low side should the current demand continue.

The average daily timecharter rate for a 12 month contract is around $14,500 for an MR2, a figure which has not moved for several months. This rate is expected to stay largely unchanged this year, due to the rise in excessive shipping capacity, especially over the last two years, according to various sources.

The recovery seen in the West will continue, aided by an increase in emerging markets interest in chemicals and products shipments. Perhaps operators with IMO II and IMO III types will benefit further due to the tankers' ability to carry a greater diversity of cargoes, including chemicals and palm oil. This increases the possibility for triangulation and greater fleet trading efficiency.

Chinese exports

Turning to specific areas, In January, Platts reported that China had issued gasoil export quotas of 1.9 mill tonnes to state-owned traders Chinaoil and Unipec.

Unipec, the trading arm of state-owned

China Petroleum and Chemical Corp (Sinopec), is understood to have been awarded a 1.28 mill tonne quota, while China National Petroleum Corp's (CNPC) trading arm Chinaoil has been awarded a quota of 620,000 tonnes. These are the first quotas issued this year.

Market sources said that China issues export quotas in batches. The latest quotas are valid for a full year but companies can apply for new ones if they have used up their allocations before the end of the year.

Unipec, which has been responsible for the bulk of China's gasoil exports, is expected to export 300,000 tonnes per month of gasoil in the first quarter of this year.

Chinaoil will however keep its exports in the first few months of the year at "very low levels," around 10,000 to 20,000 tonnes per month, another source told Platts.

However, Chinaoil expects overall exports this year to exceed 2013 volumes, as CNPC is likely to boost its refinery output this year. The trader's gasoil exports last year were around 100,000 tonnes and these occurred mostly in the first half.

China's total gasoil exports last year surged 50% year-on-year to 2.78 mill tones.

However, the Asian gasoil market has been in the doldrums since December, as the Asian arbitrage to Europe stayed shut due to a mild winter in Europe and surplus barrels in Asia.

Demand from Southeast Asia has been seasonally weak in December and January, while supply of 10 ppm sulphur gasoil has been increasing, as Japan hikes its exports of ultra-low sulphur diesel, due to sluggish domestic consumption, sources said, reported Platts.

More Diamond MRs

While most of the MR newbuilding attention has been concentrated on Ardmore, Capital, Navios, Scorpio and others, last month, US-based Diamond S Shipping Group, which is backed by investor Wilbur Ross, filed with US regulators to raise up to $100 mill in an initial public offering of its common stock in a bid to join the swelling ranks of MR2 owners.

Diamond said that it intended to use the proceeds of the IPO to purchase product tankers. The company had previously purchased three modern MRs from funds managed by CarVal Investors.

In the transaction, a group of funds managed by CarVal became a significant investor in the Diamond S clean product tanker business and Ranjit Ahluwalia, managing director of CarVal, joined Diamond S' board. Founded by Cargill in 1987, CarVal Investors is a global investment fund manager.

"With refined product exports from the US ramping up, as a result of the shale revolution in North America and ever-increasing globalisation, we think that this is a good time to invest in clean product tankers," said Wilbur Ross, Jr, Diamond S chairman at the time of the purchase. "With this transaction, we've expanded our clean product fleet to 33, one of the largest in the world and added CarVal to our roster of world-class investors."

Since then, subject to the success of the IPO, Diamond S has agreed to purchase another 10 newbuilding MRs from Metrostar for about $38.5 mill each. They are being built by SPP are are due for delivery this year through 2016. TO

New engine for MR series

Last December, Waterfront Shipping confirmed that it had reached an agreement with Mitsui OSK (MOL), Westfal-Larsen (WL) and Marinvest/Skagerack Invest to build six MRs, with an option for an additional three.

They will all be delivered during 2016. These 50,000 dwt MR2s will be fitted with MAN ME-LGI flex fuel engines running on methanol, fuel oil, marine diesel oil, or gas oil.

Vancouver (BC) - based Waterfront shipping is a wholly owned subsidiary of Methanex Corp - a transporter of bulk chemicals and clean petroleum products.

With the growing demand for cleaner marine fuel to meet environmental regulations coming into effect in Northern Europe and other regions, methanol continues to be a promising alternative fuel for ships, the company said.

"We are very excited to continue investing in methanol-based marine fuel. This announcement reinforces our commitment to continue investing in sustainable technology. Methanol is a sulphur-free fuel that provides many environmental and clean burning benefits. With fuel prices increasing and upcoming shipping regulations requiring the use of cleaner marine fuel, methanol-based fuel is a promising alternative which reduces emissions and fuel costs," said Jone Hognestad, president, Waterfront Shipping, at the time of the announcement.

Waterfront Shipping will charter these vessels to replace older vessels in its fleet and to support increased demand from Methanex Corp's growth business, including the relocation of two methanol plants from Chile to Geismar, Louisiana.

MOL, Marinvest/ Skagerrak Invest and WL will each own two MR2s, plus one optional vessel. The ships will be built by Hyundai Mipo Dockyard and Minaminippon Shipbuilding.

As for the main engines, MAN Diesel & Turbo officially designated the ME-LGI engine - ME-B9.3-LGI.

> This order represents a real market breakthrough for our liquid gas injection engine ..... with emissions of sulphur being almost completely eliminated.
>
> **- Ole Grøne, senior vice president, MAN Diesel & Turbo**

HHI-EMD, Hyundai Heavy Industries' engine and machinery division, will construct the engines. For the MOL contract, Minaminippon Shipbuilding will construct the newbuildings, while Mitsui Engineering & Shipbuilding (MES) will build the engines.

Ole Grøne, MAN Diesel & Turbo senior vice president – low speed promotion & sales, said: "This order represents a real market breakthrough for our liquid gas injection engine and is the first such, commercial project that is not reliant on external funding. Simply put, the ME-LGI engine was chosen for these carriers because it is the engine best suited to the application. The LGI engine is designed to handle low-flash-point, low-sulphur fuels like LPG and methanol, etc. Consequently, its green credentials are striking with emissions of sulphur being almost completely eliminated."

MAN Diesel & Turbo announced the development of a new MAN B&W ME-LGI dual fuel engine on 1st July, 2013. This new engine expands the company's dual-fuel portfolio, enabling the use of more sustainable fuels such as methanol, ethanol and LPG. The engines will eventually run on 95% methanol, ignited by 5% pilot oil.

"With increasing fuel prices and upcoming shipping regulations, we identified the need to develop an engine that can enable ships to run on alternative fuels with enhanced environmental benefits. The ability of our ME-LGI engine to run on sulphur-free fuels offers great potential," said Grøne.

MAN developed the ME-LGI engine in response to interest from the shipping world in operating on alternatives to heavy fuel oil. Methanol and LPG carriers have already operated at sea for many years and many more LPG tankers are currently being built as the global LPG infrastructure grows.

With a viable, convenient and economic fuel already on board, exploiting a fraction of the cargo to power a vessel makes sense with another important factor being the benefit to the environment. MAN had previously said that it is already working towards a Tier III-compatible ME-LGI version.

MAN's G-type programme entered the market in October, 2010. The 'G' prefix before an engine means it has a design that follows the principles of the large-bore, Mark 9 engine series that MAN introduced in 2006 with an ultra-long stroke that reduces engine speed, thereby paving the way for ship designs with high-efficiency.

G-type engines' longer stroke results in a lower rev/min for the engine driving the propeller. This lower optimum engine speed allows the use of a larger propeller and is, ultimately, significantly more efficient in terms of engine propulsion. Together with an optimised engine design, this reduces fuel consumption and reduces CO2 emissions. Since its introduction, more than 350 engines have borne the G-prefix, MAN said.

Refit solution

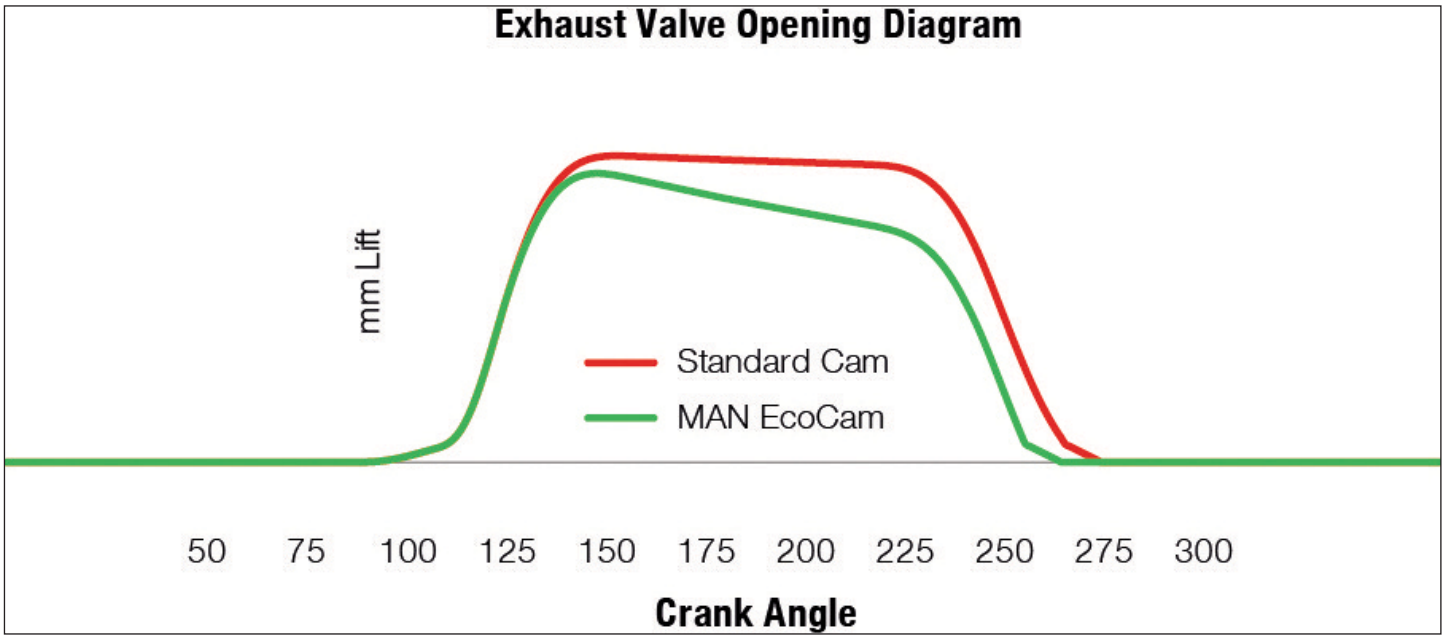
MAN has also introduced a retrofit solution for the low-load optimisation of the engine manufacturer's low speed mechanical engines fitted with single turbochargers.

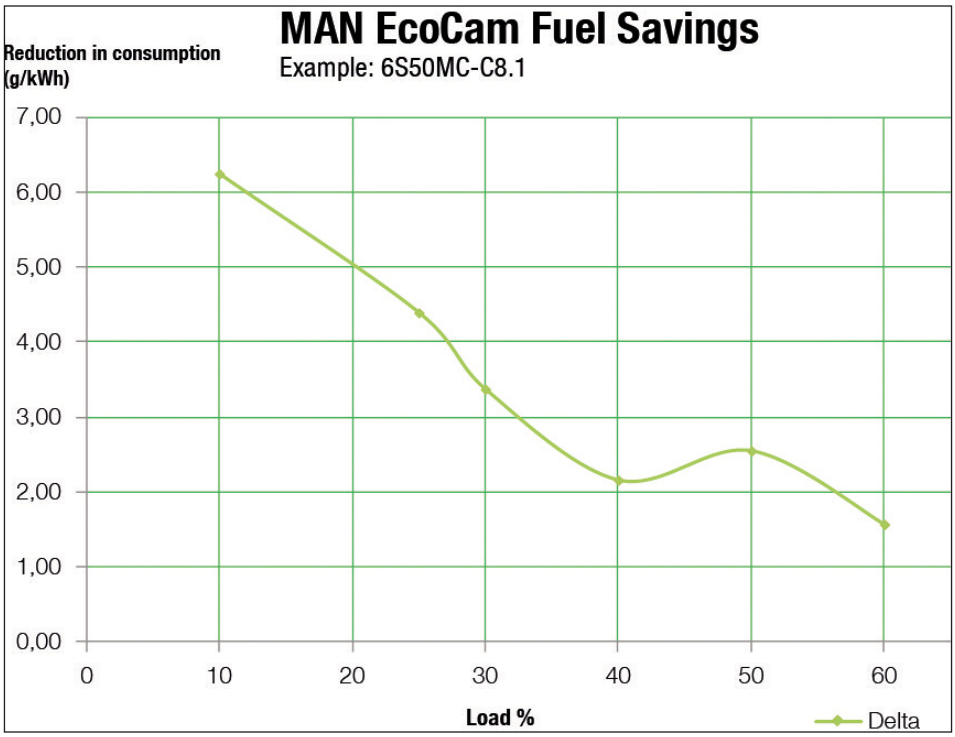
Called EcoCam, MAN claimed that the system offers significant fuel savings of 2-5 g/kW, with short payback times also claimed. It delivers an increased P-max cylinder pressure through adjustable exhaust-valve timing.

Christian Ludwig, head of retrofit and upgrade at MAN Diesel & Turbo said; "Slow steaming is now an established industry standard across all segments, including the tanker and bulker markets and MAN Diesel & Turbo continuously seeks to further refine its technology and improve efficiency.

"The MAN EcoCam adjusts the exhaust valve timing between 10 and 60% load, giving a 2-5 g/kW fuel saving with minimal to no interruption to a vessel's schedule during installation. It has been thoroughly tested and we are happy that we are now able to provide our customers with a low-load tuning method for mechanically controlled engines with a single turbocharger," he said.

The company is initially rolling rolling out





the MAN EcoCam to a number of its customers with MAN B&W S50MC-C type engines and will gradually introduce the system across its mid and large bore engine programme.

It is has a flexible cam profile, called virtual cam, the company said. The profile is controlled hydraulically by adjusting the amount of actuator oil in the hydraulic pushrod.

Low-load tuning has an impact on torsional vibration and NOx. When a low-load tuning method is installed on an engine, the torsional vibrations' impact and the NOx level have to be taken into consideration to ensure that the vibrations' impact is not harming the engine and that the NOx level is in compliance with IMO regulations. The torsional vibration calculation and NOx amendment are included when purchasing the EcoCam.

EcoCam's effect on fuel reduction has been verified by two independent testbed installations and on board a vessel in service.

The earlier closing of the exhaust valve provides a higher compression pressure, thereby delivering a higher combustion pressure and lower fuel oil consumption. Flexible exhaust valve timing has traditionally only been available to electronically-controlled engines, the company explained.

Depending on the engine's load profile, the EcoCam typically generates savings in the region of 2-5 g/kWh. For smaller engines, this can result in a payback period of as little as 18 months, as is the case, for example, with a 6S60MC-C engine with 6,000 annual running hours, MAN Diesel & Turbo claimed. TO

TANKER*Operator's* Top 30 owners and operators

As usual, the data used to calculate *Tanker Operator's* Top 30 listing is compiled by calculating the fleet by total deadweight tonnage per tanker company. The figures were extracted from company websites, the Equasis database and the companies themselves. We have purposely excluded FPSOs, LNG and LPG carriers, plus ATBs from the total tonnage given for each company.

Mitsui-OSK (MOL)

(15.8 mill dwt, plus a 74,000 dwt newbuilding)

A standard MOL MR.

1 **MOL has reached the number one s**pot by way of including all the vessels operated by the Japanese conglomerate in various pools and for other owners on a long term basis, overtaking NYK.

In total, the company controls 40 VLCCs, six LR2s, five Aframaxes, 12 LR1s, 26 MRs and 13 Handysize tankers.

In addition, there is another LR1 still to be delivered. ■

NITC

(13.6 mill dwt)

2 **The Iranian tanker owner has jumped to** number two in the charts, due to the delivery of 12 VLCCs between May 2012 and July 2013.

There are other newbuildings believed to be under construction in Iran, although these are thought to be Panamaxes, or smaller. The huge VLCC newbuilding programme has now been completed with all the vessels afloat.

According to AIS tracking data research undertaken by IHS Research, about six older VLCCs have been anchored in the Gulf for some time and it is thought that they form the core of NITC's storage fleet.

In addition, a few of the newbuildings have not left China where they were built.

Despite this, there are now 37 VLCCs, nine Suezmaxes, five Aframaxes and three products tankers in the fleet, according to Iranian sources. ■

NYK Group

(12.6 mill dwt)

3 **As of the end of March 2013,** the company's fiscal year, the NYK Group's fleet stood at 33 VLCCs, four Aframaxes, five LR2s, 24 MRs and five chemical carriers.

A few of the vessels were thought to have left the fleet since then, but these will be identified during the next fiscal year.

In addition, the group operates 28 LNG carriers and has interests in many more through various controlling consortia.

The company also has joint ventures with Knutsen (Knutsen NYK Offshore Tankers) and Stolt Nielsen, among others.

Most of the large crude carriers are chartered to various oil majors on long term contracts. ■

NYK's MR *Scarlet Ibis*.

Teekay Group

(12.5 mill dwt, plus 606,000 dwt newbuildings)

4 **Another new tanker company-** Tanker Investments (TIL) – was formed at the beginning of this year. Teekay and Teekay Tankers have co-invested for a combined 20% ownership interest.

TIL is in the process of acquiring four 2009 and 2010-built Aframaxes, which have been included in the figures This will bring the number of Aframaxes operated by the various group companies up to 18 in total.

In addition, TIL will purchase four Suezmaxes from another company within the group.

As well as the 18 Aframaxes, the group operates 34 shuttle tankers, 23 Suezmaxes, five FSOs, eight product tankers and one VLCC, as well as a large fleet of FPSOs, LNGCs and LPG carriers, which have not been included in the figures.

Teekay also has four newbuilding Aframaxes and an FSO still to be delivered. ■

Euronav

(12.5 mill dwt)

5 **The Belgian tanker concern will this** year attain the number five spot in Tanker Operator's Top 30 listing, due to its purchase of the 15 Maersk VLCCs.

We have included the vessels in this listing, despite the fact that some of them will not be delivered until the middle of this year.

Euronav has said that it will look for more opportunities to increase its fleet and boost the Tankers International pool, in which the Maersk vessels will be commercially operated.

A deal to purchase three VLCCs and two Aframaxes from OSG has been put on ice for the time being. ■

Euronav's VLCC *Famenne*.

Frontline Group

(11.9 mill dwt, plus 660,000 dwt newbuildings)

6 **This group, which includes** Frontline Ltd and Frontline 2012, has continued to shed older tonnage, including the last of its OBO fleet.

The original VLCC newbuilding programme of five vessels has now been cancelled but the group has ordered two LR2s and at least five product tankers, the first of which was delivered last September. There are also two Suezmaxes to come from Rongsheng.

In total, the group has 30 VLCCs and 16 Suezmaxes, either owned by the group, Independent Tankers Corp (ITCL), or commercially managed by Frontline Management.

ITCL is 83% owned by Frontline Ltd. ■

Sovcomflot (SCF) Group

(11.9 mill dwt, plus 320,000 dwt newbuilding)

***SCF's* first VLCC - Svet.**

7 **SCF's total has gone up slightly due** to the delivery of a VLCC and an LR2. At the same time, the group has been selling off some of its older product tankers.

SCF boasts the world's largest Aframax fleet (42 vessels), the second largest Suezmax fleet (18 vessels) and also the second largest product tanker operator with 28 MRs, plus the third largest shuttle tanker operator with eight Aframaxes and five Panamaxes, which includes the largest Arctic shuttle tanker fleet.

As mentioned, the company recently took delivery of the first of two newbuilding VLCCs- *Svet.*

In addition, SCF has an assortment of other vessel types, including a growing LPG and LNG fleet, some of which are ice class. ■

Bahri/Vela

(11.4 mill dwt)

8 **The merger between the Bahri and** Vela fleets was still being assessed by the relevant authorities at the time of writing, but like last year, we have amalgamated the vessels, similar to the Euronav/Maersk consolidation, rather than be overtaken by events.

Once finalised, the new fleet will consist of 32 VLCCs, including one storage vessel; one Aframax; 24 chemical carriers, including one newly delivered LR1 and four MRs.

All of the vessels will be technically and commercially managed by Bahri. Its fleet technical management is provided by wholly-owned subsidiary Mideast Ship Management.

Bahri also has interests in LPG carrier operator Petredec and operates the chemical carriers within the NCC operation in co-operation with SABIC. The co-operative agreement with Odfjell was recently discontinued. ■

AET

(11.2 mill dwt, plus 241,400 dwt newbuildings)

One of AET's newest eco VLCCs *Eagle Verona*.

9 **Last year, Singapore-** based AET took delivery of four eco-design VLCCs, which brought the total up to 13 VLCCs in the fleet.

Similar to many companies in Tanker Operator's top 30 listing, AET has sold some of its older tonnage, mainly Aframaxes and VLCCs and has taken delivery of newer units, both wholly owned and on long term charters.

In addition, the company operates 50 Aframaxes; four Suezmaxes; two DP shuttle tankers, with another two on order; one Panamax and five MRs. ■

Dynacom Tankers Management (DMT)

(8.9 mill dwt)

10 **Dynacom manages 14 VLCCs, 23** Suezmaxes, six LR1s and six crude oil Panamaxes.

There has been a change in the number of Suezmaxes and Panamaxes, as a few have left the fleet, since last year's listing. ■

Overseas Shipholding Group (OSG)

(8.3 mill dwt, plus 113,000 dwt newbuilding)

13 **OSG appears to be winning its** battle to stay afloat since entering Chapter X1 in November 2012.

It is now reaping the benefit of high US Jones Act trades tanker rates, some of which have topped $100,000 per day recently.

In total, OSG has 10 VLCCs, one ULCC, two ULCC FSOs, one Suezmax, nine Aframaxes, two Aframax size lightering vessels, nine Panamax crude oil carriers, four LR1s and 23 product tankers.

Its US flag fleet consists of 14 Handysize/MRs, plus 10 ATBs - the latter have not been included in the figures. In addition, OSG operates four LNGCs.

As part of its cost saving drive, the company recently announced that it was outsourcing the technical management function of its international flag business to V Ships. ■

One of OSG's 14 Jones Act MRs.

Maersk Tankers

(7.8 mill dwt)

15 **The Danish conglomerate has** dropped down the rankings due to the selling of the 15 VLCCs to Euronav.

However, Maersk Tankers' involvement is still huge, as it operates the LR2 and Handytankers pools, whose vessels have been included in the figures.

Also included in the figures are the smaller tankers operated by subsidiary Brostrom, which are 24 intermediate clean, 15 intermediate dirty and a further six operated out of Singapore. ■

Maersk's LR2 *Maersk Pelican*.

China Ocean Shipping (COSCO Dalian)

(8.3 mill dwt, plus 1.26 mill dwt newbuildings)

11 **Due to the increasing reliance on** Chinese hulls to transport the huge country's crude and petrochemical needs, the domestic management concerns have grown accordingly and are forecast to become even larger in the near future.

The tanker sector of the giant COSCO group manages 22 VLCCs, three Suezmaxes, three LR2s, 12 Panamaxes and three MRs.

The VLCC total includes long term chartered vessels.

There are a further four VLCCs to come this year from Guangzhou and Dalian shipyards. ■

China Shipping Development Corp (CSDC)

(8.3 mill dwt)

12 **CSDC recently took delivery of two** VLCCs and an Aframax.

These deliveries took the fleet up to 14 VLCCs, eight Aframaxes, 13 LR1s, six crude oil Panamaxes, 31 MRs and 10 Handysize tankers.

Similar to many Chinese owners, CSDC has been selling off the older units in the fleet, but is still thought to have two, or three, single hull vessels still trading. ■

Maran Tankers Management (MTM)

(8 mill dwt, plus 638,000 dwt newbuildings)

14 **Part of the Angelicoussis Group,** MTM operates 22 VLCCs, six Suezmaxes and two Aframaxes, which is a few units down on last year's figure, as the company has sold off some of its fleet.

However, another two VLCCs are due to be delivered this year. ■

Ocean Tankers
(7.8 mill dwt)

Ocean Tanker's LR2 *Ocean Taipan*.

16 **Singapore-based Ocean Tankers** manages 14 VLCCs, one Suezmax, 14 LR2s, six LR1s, 16 MRs and six Handysize vessels.

In addition, the company has another 21 general purpose tankers on its books, as well as bunker tankers and other support vessels, operating in and around Singapore.

Ocean Tankers is a partner in Nova Tankers, along with MOL and Samco. The Maersk VLCCs are soon to join the Tankers International pool, once their purchase by Euronav has been completed. ■

Nanjing Tankers
(7.5 mill dwt)

17 **Cash strapped Nanjing Tankers has** taken delivery of several VLCCs during the past couple of years, propelling the company into the Top 30.

The company controls 18 VLCCs, one Aframax, 2 LR1s, 34 MRs and eight Handysize tankers. ■

SK Shipping
(6.3 mill dwt)

18 **The South Korean concern has shot** up the rankings thanks to the deliveries of four VLCCs last year.

SK Shipping currently has 19 VLCCs, two LR2s and three MRs under management. ■

Oman Shipping Co (OSC)
(5.8 mill dwt)

19 **OSC has completed its tanker** newbuilding programme and has one LNGC to come this year to add to the seven in service.

The company also owns a variety of vessels, including 400,000 dwt VLOCs.

Its tanker interests include 17 VLCCs, two LR2s, one LR1, one MR, two Methanol carriers and two smaller chemical tankers. ■

Minerva Marine
(5.4 mill dwt)

20 **Minerva took delivery of a VLCC** last year bringing the total to four large crude carriers. In addition the manages five Suezmaxes, 25 Aframaxes and 14 MRs.

It is not thought that the company has any more newbuildings still to come. ■

General Maritime (GenMar)
(5 mill dwt)

21 **GenMar has seven VLCCs, 12** Suezmaxes, six Aframaxes, two LR1s and two MRs.

Similar to several of the fleets listed here, GenMar is getting rid of a few older units in the fleet and was originally linked to the purchase of Maersk's VLCC fleet. ■

GenMar's Suezmax *Genmar Geroge T* seen at the Caland Canal ship-to-ship transfer buoys. (see previous page)

Shipping Corp of India (SCI)

(5 mill dwt)

22 **SCI has moved up a notch thanks to** the delivery of two VLCCs.

At the same time the Indian conglomerate has been selling off its single hull fleet remnants.

At the time of writing, SCI fleet includes six VLCCs, seven Suezmaxes, 10 Aframaxes, two LR2s, six LR1s, five MRs and two Handysize tankers. ■

TORM

(5 mill dwt)

23 **Within the product tanker segment,** TORM operates 29 LR2s, seven LR1s, 43 MRs and 11 Handysize tankers, either wholly owned, or in commercial management.

The Company also operates around 10 vessels in the drybulk segment

TORM maintains a strategic partnership with Maersk Tankers in the LR2 segment.

For the other segments, TORM operates third party vessels under commercial management. ■

TORM's LR1 *Torm Sofia* seen at Europoort.

Associated Maritime Corp (AMC)

(4.7 mill dwt, plus 1.9 mill dwt newbuidings)

24 **There is no change to AMC's fleet** since last year's entry.

The total number of vessels remained at 13 VLCCs, one Suezmax and seven Aframaxes.

However, there are another six VLCCs on oder in Chinese yards, due for delivery 2014-2015.

AMC is a subsidiary of Hong Kong Ming Wah, itself part of the giant China Merchants conglomerate. ■

Tsakos Energy Navigation (TEN)

(4.7 mill dwt)

25 **TEN recently sold a VLCC leaving** the company with just one.

The company also took delivery of two Suezmax shuttle tankers last year on the back of long term charters with Petrobras.

As of October last year, TEN managed one VLCC, 10 Suezmaxes, eight Aframaxes, two Suezmax shuttle tankers, three LR2s, nine LR1s, six MRs and eight Handysize tankers.

In addition, the company has one LNGC in operation, plus another on order for delivery in 2015.

Most of the vessels are managed by Tsakos Columbia Shipmanagement, a joint venture formed about four years ago. ■

TEN's LR1 *Selini* seen at Hamble in Southampton Water.

BW Maritime

(4.4 mill dwt)

26 The Singapore-based shipmanagement concern manages 10 VLCCs, 17 LR1s and two smaller chemical tankers.

In addition, the BW Group has interests in LPG and LNG carriers, as well as a large FPSO fleet. ■

Formosa Plastics Marine Corp

(4.3 mill dwt)

27 **The Taiwanese energy giant has** expanded its tanker fleet over the past couple of years, resulting in the company's first entry into Tanker Operators' Top 30.

In total, the company manages 10 VLCCs, six LR1s, 16 MRs and three Handysize tankers. ■

Thenamaris

(4.2 mill dwt, plus 300,000 dwt newbuildings)

A Thenamaris VLCC.

28 **Thenamaris has** two VLCCs, six Suezmaxes, 18 Aframaxes, eight MRs and seven Handysize tankers on its books.

The company is also co-ordinating the construction of two Suezmaxes, which upon their delivery, Thenamaris will technically manage.

In addition, the company has diversified into bulk carriers, LNGCs and containerships. ■

BP Shipping

(4.1 mill dwt, plus 2.33 mill dwt newbuildings)

29 **BP is in the middle of a fleet** replacement programme and the Frontline VLCCs are expected to be handed back to their owners shortly.

As part of the replacement programme, BP has ordered four Suezmaxes, 10 Aframaxes, nine MRs and five Handymaxes.

At present, the oil major operates five VLCCs, 16 Aframaxes, 12 MRs and five Handysize vessels, plus seven LNGCs and three VLGCs, which have not been included in the figures. ■

BP's Aframax *British Eagle* seen at Maasvlakte.

Navios Maritime Acquisition Corp

(3.8 mill dwt, plus 1.25 mill dwt newbuildings)

30 **The Navios group company has** entered into Tanker Operator's Top 30 listing by virtue of its recent investment e in VLCCs.

In total, the company manages eight VLCCs, eight LR1s, 14 MRs and four chemical/product tankers.

In addition, the company has another three VLCCs on order, plus seven MRs. ■

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To reduce fuel costs - how do you decide whether to invest in training, retrofitting or newbuilds?

- **Ian Cochran,** Editor, Tanker Operator magazine (Chair)
- **Capt. Steven Sandorff,** director and head of tanker operations, Dampskibsselskabet NORDEN A/S
- **Stig Holm, general manager,** Thome Shipmanagement Denmark
- **Allan Rasmussen,** VP, energy efficiency and innovation, Torm
- **Steen Sander Jacobsen,** Fuel Optimization Manager, Maersk Tankers, Technical Operation.
- **Sverre Patursson Vange,** head of performance management, Lauritzen Kosan A/S
- **Brian Bender Madsen,** Senior mechanical engineer, Knud E Hansen
- **Jan Jensen, Manager retrofit sales,** MANDiesel PrimeServ Copenhagen

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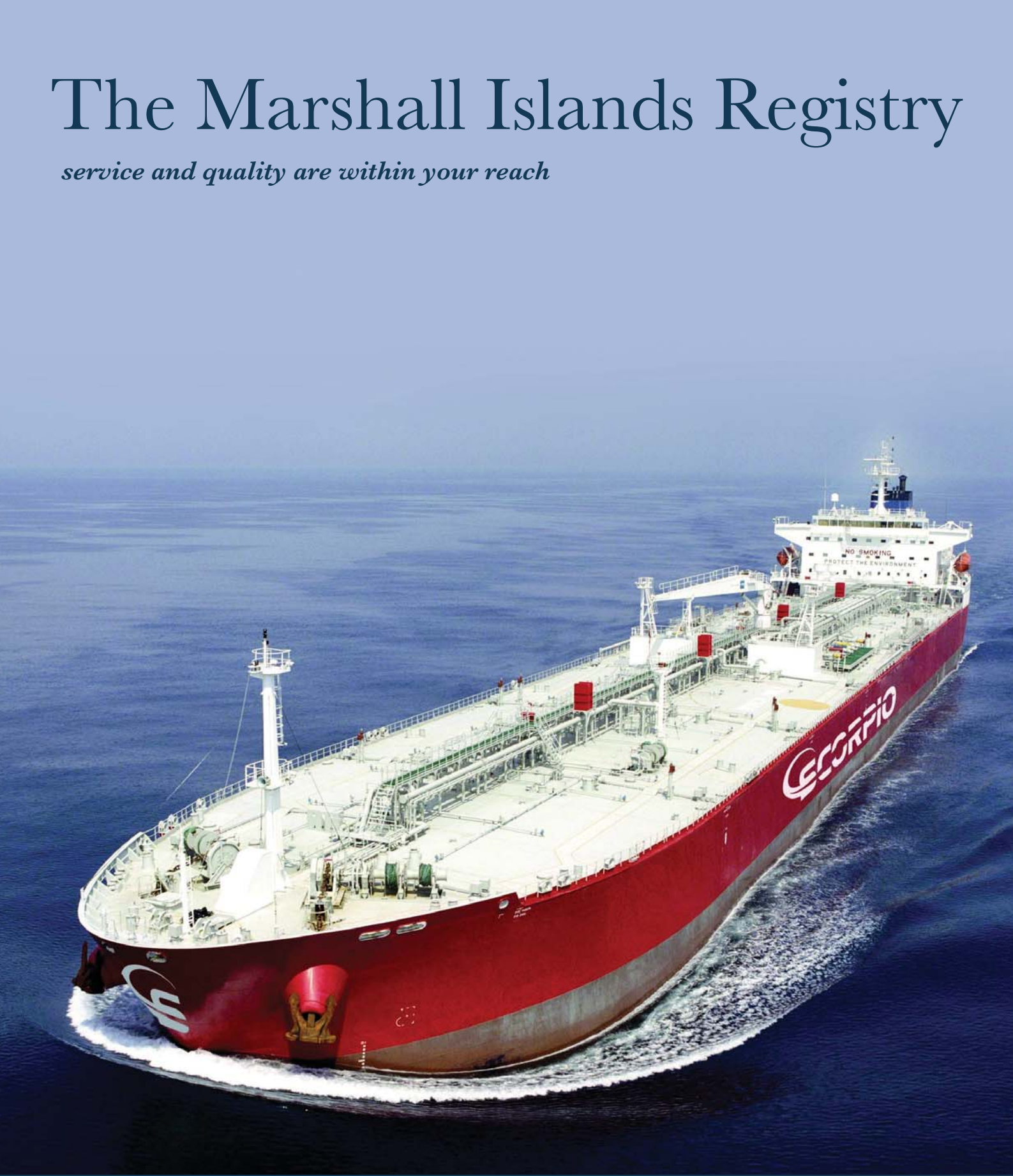

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