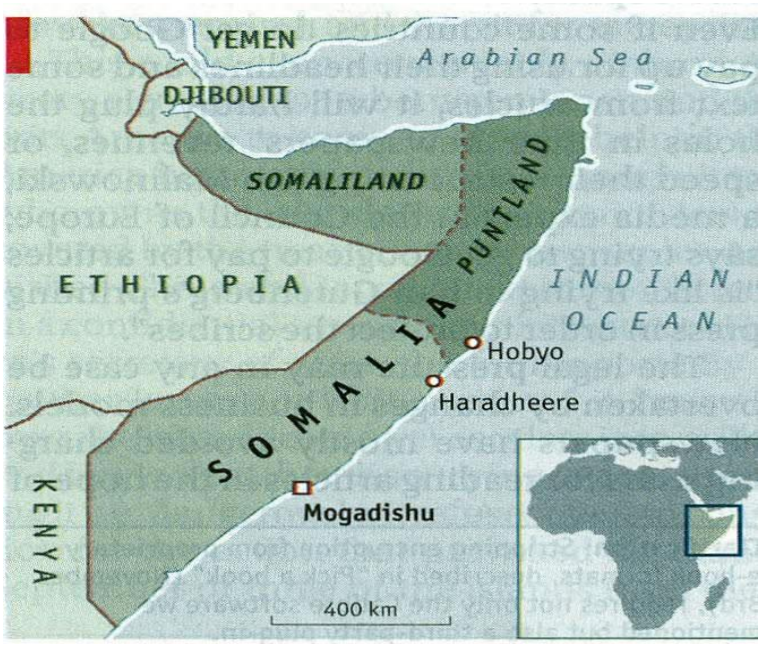
Inséré le 20 décembre OPEN FORUM Enlevé le 20 janvier 2013

Piracy : Hung, drawn and quartered

Better deterrents are putting the Somali pirates' business under strain

IT IS too early to declare victory against Somali piracy, which cost the shipping industry and governments as much as $7 billion last year. But the fall in the number of successful hijackings since the peak of 2009-n has been dramatic. The International Maritime Bureau, a body that fights shipping crime, counted 219 cases of pirates trying to board a vessel in 2010 and 236 in 2011. This year's total is just 71, against 199 for the same period last year. Successful seizures are down from 49 in 2010 to 28 in 2o11 and only 13 this year.



Pirate activity normally wanes between the end of May and late September, when the south-west monsoon is lashing the Arabian Sea and this year's storms were particularly severe. The light skiffs (launched from bigger "mother ships") that the pirates use to close on their prey can only operate in benign sea conditions. But the pirate lairs along the Somali coast show little sign of preparing for a new hunting season. Associated Press reporters who reached one of them, Hobyo, found that the pirates' flashy cars, booze and prostitutes had disappeared and the cash for new raids had dried up. Some think the pirate "kingpins" may just be stocktaking before reinvesting. But the "stock" of hijacked vessels and hostages has shrunk from 33 ships and 758 hostages in early 2011 to just nine ships and 154 hostages now. Some of these have proved hard to ransom and have been there a long time.

Tom Patterson, a maritime-security expert at Control Risks, a consultancy, points to three factors that have made piracy a lot riskier and less profitable. The first is that soaring insurance premiums and the threat to crews have forced shipowners to change their ways. Ships have been made harder to attack by a range of measures known as BMP, or best management practice. They cruise faster and practise evasive manoeuvres. Physical barriers such as razor wire are now fitted. Many have secure "citadels" on board for the crews to retreat to if all else fails. They also follow the reporting protocols established by the European Union's naval task-force (Eli -NAVFoR) when crossing dangerous waters.

The second factor he cites is better coordination by the international naval taskforces. These include the EU flotilla, a similar one provided by NATO, an Americanled coalition and warships under national commands from China, Japan, India, Iran, Russia and Saudi Arabia. These all meet four times a year to discuss tactics and make better use of the intelligence coming from surveillance aircraft and Somalis who want to be rid of the pirates.

The legal issues around fighting pirates are still tricky. But the foreign naval forces have become more assertive. On October nth an EU vessel arrested seven pirates because their dhow was carrying ladders and a large quantity of fuel and water drums. Pirate mother ships now face preemptive

boarding and skiffs are destroyed rather than ordered home as happened in the past. Mr Patterson highlights the psychological importance of a strike in May by helicopters from EU NAVFOR on targets near Haradheere, a pirate haven. It destroyed fuel, outboards and speedboats. The force's spokesperson, Lieutenant Commander Jacqueline Sherrif, says that disrupting logistics on land "sends a strong message" to the pirates and their investors who now know "they will no longer have impunity on the beaches".

However, both Mr Patterson and Rear Admiral Anthony Rix, now of Salamanca Risk Management, say that the biggest game changer of all is probably a third factor. Mr Patterson reckons that more than a quarter of vessels now carry armed security guards. The shipping industry used to oppose this, fearing that armed guards would escalate violence. But not a single vessel with guards has been boarded. Usually a warning shot is enough to deter the pirates. Lieut-Commander Sherrif says: "The pirates go to sea to make money, not die in a firefight." BIMCO, the biggest international shipping organisation, has recently produced a standard contract for the industry, known as GUARDCON. Most of the security firms supplying guards are British. Admiral Rix says that his company hires mostly former Royal Marines.

Nobody in the anti-piracy effort believes that a return to the epidemic levels of the past is likely, but some worry that complacency could allow the pirates to make a limited comeback. The shipping industry is in recession and under huge cost pressure. Defence budgets are under strain, too: the political will to support constant naval patrolling in the Indian Ocean may weaken. As Admiral Rix notes: "The pirates' business model is still attractive. It would be naive to think that the current low level of activity suggests that they have found something else to do."

The Economist - November 10 2012

Inséré le 22 décembre NEWS NOUVELLE Enlevé le 22 janvier 2013

LNG-fuelled ships take root in Europe

The drive for the use of LNG as a marine fuel is gaining ground. The initiative was launched by Norway a decade ago and is now being taken up by its Northern European neighbours. Meanwhile, other parts of the world are monitoring what is happening in Europe and assessing the ability of their gas supply chains to deliver the volumes of LNG required for vessel bunkering to the right place at the right time.The use of LNG as marine fuel as yet is quite modest. Some 25 small vessels in Norwegian coastal service have LNG fuel systems and a new oil bunker barge for Rotterdam has been built to run on LNG.

This fleet will be augmented by another 25 such ships which are under construction. Again, most of the newbuildings will be small vessels flying the Norwegian flag, but several of the orders are for larger ships that will serve on international routes. One of the non-Norwegian ships will be a 57,000 gross ton passenger car ferry that will sail between Finland and Sweden, burning 23,000 tonnes of LNG per annum in the process, when it goes into service in early 2013. This will be the largest ship in the world that is not an LNG carrier to run on LNG.

Other non-Norwegian, LNG-fuelled vessels on order include a high-speed catamaran ferry being built in Australia for service in Uruguay and a pair of offshore support vessels (OSVs) that will be built in the US to serve the needs of oil platforms in the US Gulf. The OSVs mark a breakthrough in the use of LNG as marine fuel in North America. No doubt the fact that the coastal waters of the US and Canada are to become a sulphur emission control area (SECA) from August this year was a factor in the choice of fuel system. Commercial considerations are just as important to the choice of propulsion system arrangements as the tightening IMO regulatory regime governing ship emissions. As time goes by and the price of oil fuel creeps up, the attractions of the LNG alternative are growing. Taking North America as an example, the US and Canada are replete with very competitively priced gas as a

result of its recent discoveries of shale and other unconventional gas. Powering North American fleets of OSVs, regional ferries, fishing boats, Great Lakers and inland waterway vessels with gas makes eminent good sense from a commercial point of view.

It is impossible to determine with any accuracy what the size of the global LNG marine fuel market will be in 2020. That is because it is not possible to say how many ship owners will favour LNG over the exhaust gas scrubber and low-sulphur middle distillate fuel alternatives as a means of meeting the stricter emissions controls coming into force over the next decade. Each option has its advantages in particular ship operating scenarios. However, the growing disparity between gas and oil prices means that LNG is seen in an increasingly favourable light in assessments of the life cycle costs of the various options available. This commercial factor in tandem with the North and Baltic Sea SECAs are exerting a shift towards the LNG camp in Europe. Recent research commissioned by the Danish Maritime Authority concluded that gas-fuelled vessels operating in Northern Europe could be consuming up to 4 million tonnes per annum (mta) of LNG in their engines by 2020.

The European market for LNG as marine fuel will not reach such a level without the presence of an adequate bunkering network. It is estimated that an LNG marine fuel market of 4 mta would require at least 11 shore-side LNG bunkering stations positioned strategically around key North and Baltic Sea ports. Before the recent uptick in the choice of the LNG fuel option outside Norway, ship owners and bunker suppliers considering this potential market had been caught up in a classic chicken-and-egg dilemma. Potential investors in port LNG bunkering infrastructure were reluctant to make a commitment due to uncertainties over how many LNG-powered vessels would be built. For their part, ship owners needed to be assured of adequate bunker supply infrastructure before ordering an LNG-powered vessel. Momentum is now building to the extent that this conundrum should soon be a thing of the past. New LNG-fuelled ships continue to be ordered and the network of LNG fuelling stations in Northern Europe is about to blossom. The ordering of the first dedicated LNG bunker vessel must be imminent and in recent weeks a plan to provide Hamburg with a barge-mounted, LNG-fuelled power plant, to service cruise ships while berthed in the port, was unveiled. Bunker suppliers seeking to provide ship operators with the required levels of LNG fuel will be able to source LNG from large import terminals, such as those at Zeebrugge and Rotterdam. These volumes will be delivered to the ships by coastal LNG carriers via either their local fuelling depot or by means of direct transfers to purpose-built bunker barges. As this LNG fuelling network begins to take shape it is important that both the LNG shipping and general maritime industries take due account of the practical challenges posed by the day-to-day operation of such an infrastructure. While gas-burning engines and shipboard LNG fuel systems are developed technologies, the use of LNG as a marine fuel poses operational as well as logistics challenges. Outside the LNG shipping sector, the general maritime industry is not familiar with handling this boiling cryogenic liquid.

How to get this new fuel, at -162˚C, from the storage tank at the coastal terminal into the ship's LNG bunker tank? And who will be responsible for the LNG bunkering and fuelling operations on the ship? Although the introduction of LNG-fuelled ships will require some modification of the seafarer training regime, at this stage it has not yet been decided whether ships' engineering staff will need to undergo the same LNG familiarisation programmes as officers on LNG carriers. Training is one of the issues that the IMO working and correspondence groups responsible for developing the new International Code on Safety for Gas-Fuelled Ships (IGF Code) currently have in focus. Other LNG-related issues that seagoing staff with future involvement in LNG bunkering operations will need to be aware of are bunker tank conditioning; custody transfer arrangements to quantify the amount of fuel transferred; bunker fuel quality monitoring; boiloff gas management and the effects of differences in pressure and temperature during transfer.

These are remarkable and changing times for marine bunkering. What is inevitable is that ship fuelling and propulsion systems will be subject to major change. What is likely is that LNG fuel will

have a major role to play over the coming decade and that Europe will be leading the way with these developments. **Source: BIMCO**

Inséré le 24 décembre NEWS NOUVELLE Enlevé le 24 janvier 2013

LNG ships in big demand - for now

There is a bubble in global shipbuilding - and not only is it growing every day, it is keeping the entire industry afloat.

The bubble is demand for the ships that carry the world's fastest growing energy source, liquefied natural gas, or LNG.

However, when the bubble bursts - and many analysts believe they already know the date, some three years hence - there will be many expensive ships lying idle. It is, they say, like watching an accident in slow motion. Today, global demand for LNG is rocketing, assisted largely by the flight from nuclear power after reactor meltdowns at Japan's Fukushima Dai-ichi nuclear plant a year ago. And the demand for LNG ships to deliver this specialist hydrocarbon energy source is tied to the rocket's tail. "So, day rates [to charter] LNG ships in 2010 were US$37,000. Those rates soared to a peak of $160,000 in 2011. And even though they've come down a bit, they'll still likely average around $140,000 in 2012, possibly even going as high as $200,000 per day," says Matthew Carr, an analyst with Investment U Research in the United States.

"If you're doing the math, a jump in rates to $200,000 would be a 441 per cent increase in just two years. And here's the other kicker; there's a shortage of LNG carriers." The existing global fleet of 365 LNG carriers is 98 per cent utilised, and brokers such as Clarksons of London say usage is not likely to fall below that level until 2015. Also, LNG carriers are highly complicated ships to manufacturer, and few shipyards have the capability to build them. Suddenly, however, the world needs more of them. From five LNG carriers on order in 2010, there are now more than 70. However, there needs to be over 100 more if the required 175 new LNG tankers are to built by 2017 to meet rising demand from China and Japan. And that does not even begin to deal with the growing LNG spot market.

Needless to say, the shipyards are delighted. Within the past month South Korea's two leading shipbuilders announced a slew of new orders. Hyundai Heavy Industries won orders worth $1.1 billion (Dh4bn) to build four LNG carriers for an unidentified European company, while its affiliate Hyundai Samho Heavy Industries secured a separate contract with Norway's Golar LNG for two LNG carriers with options for two more. The vessels are expected be delivered between the second quarter of 2014 and the first half of 2015. STX Offshore & Shipbuilding also announced orders for two LNG carriers in a $395 million deal with Sovcomflot of Russia. But all this takes place against a bleak outlook for global shipbuilding in general, according to research published last month. A report by Danish Ship Finance showed the size of the global order book is 46 per cent below the 2008 peak and expected to be almost halved within the next 12 months. "Shipowners' ability to take delivery ... is correlated with the situation in the freight markets and the ship financing squeeze," the report said. "If market conditions deteriorate any further some owners may fail to take delivery in 2012, not to mention that their appetite for ordering new vessels will be reduced."

For the South Korean and Chinese yards with LNG-vessel capability, however, the prognosis is brighter. "We expect that South Korean shipyards together with the largest Chinese shipyards will be the better positioned to stick it out over the next two years," said the Danish report, but it warned: "On average, we forecast that new building prices for less sophisticated vessels [non-LNG vessels] and shipyard profitability could decline by as much as 15-20 per cent in 2012." Most of these LNG orders are not "flash-in-the-pan" contractsbut are a function of the long-term nature of the LNG business, says Lloyd's Register.

"Most LNG carriers ordered to date have been associated with big gas projects, such as Qatargas out of Ras Laffan, or Australia's Pluto gas project," says Nick Brown of Lloyd's Register. "They are part of

so-called LNG trains supplying LNG on a dedicated route, like floating infrastructure, and are part of 20-25-year projects. "But many new ships have been ordered on the basis that there was an expectation that a large spot market would develop." The industry newspaper TradeWinds agrees, reporting: "If there is a [shipping] sector to be in right now it is LNG." "The LNG carrier order book has a strong presence of independent owners," says Mike Corkhill, the editor of LNG World Shipping. "Greek ship owners. Owners in northern Europe and Scandinavia. Japanese owners. The overwhelming majority of their LNG ship orders have been placed on a speculative basis. The fact that almost 90 per cent of the current fleet is fixed on long-term charter means that relatively few LNG carriers are available to meet the industry's spot cargo and short to medium-term needs," says Mr Corkhill. "This will ensure that owners with uncommitted ships will continue to accrue healthy returns for at least the next two years."

But as early as last September, the international energy analyst Wood Mackenzie was warning against this building boom. "While near-term prospects remain good, the danger is that ships ordered in today's rising market are likely to be delivered into a declining freight market," wrote Andrew Buckland, Wood Mackenzie's senior LNG shipping analyst.

He predicts the bottom will fall out of LNG charter rates as ship orders are filled and new gas-supply projects in the Pacific Basin come on stream, removing the need to move LNG cargoes over long distances. "Ships ordered now which will be delivered around 2014-2015 have no guarantee that new supply projects will choose to charter these vessels rather than order their own purpose-built ships," Mr Buckland says. "If the recent wave of speculative LNG ship orders were to continue, they would risk uncertain employment upon delivery." Current charter activity would seem to reflect Mr Buckland's warnings that the bottom will eventually fall out of the market. Recent reports in TradeWinds show charter rates up to three years ahead holding firm. The integrated energy firm Eni recently chartered the 174,000-cubic-metre LNG carrier Stena Crystal Sky for three years at about $145,000 per day. However, "longer-term deals of five years plus on some of the LNG new buildings are being quoted at between $80,000 and $85,000 per day, with the majors pushing for daily levels of sub-$80,000", the shipping journal reports. **Source: The National**

Inséré le 26 décembre HISTORIEK Enlevé le 26 janvier 2013

Ghent

Back at the time of the Roman era in our country,.. the confluent of Scheldt and Lys was the natural landingplace for our region. On the North of this confluent there must have been, in the dawn of historical times, a sort of Gulf or delta, extending from the Swin to the present site of Antwerp.

In the ninth century only the ports of Boulogne, Ghent,. Quentovic and Duurstede were known. The two last ones were wipe-out by the norman invasions.

It is known as a certain fact that in 811, Carlomagnus came to Ghent to review the fleet he was fitting out against the Normans who has, twice during the 9th century settled in Ghent a short time.

The chronicles mention that strong disturbances on the mouth of the Scheldt in the year 820, 840, 860 altered the course of the river ; passages to the sea were closed, others were formed between several islands.

Could this fact be responsible for the long pursuit of the population of Ghent, notwithstanding their favorable location on the river, to establish a straith way to the sea?

The wide detour the river makes through the Waes Country lenghtened considerably the journey through the Middle- Scheldt and the numerous customs to be paid along the voyage, made shipping over this route much too expensive.

In the years 941 to 949 the first canal between Ghent and the Sea was dug. It was called " Ottogracht "; it followed a. branch of the Nether Scheldt, touching Meulestede, Wondelgem, Cluysen and Ertvelde.

In the XIII century the patrician Aldermen are looking for a more direct way in North-Westerly direction, touching the rich commercial city of Bruges, to the great advantage of their own town.

In 1251, Mary of Constantinople, Countess of Flanders gives the Aldermen of Ghent her consent to the projected way to the Swin, digging out the rivulet Lieve, through the sandy plains of Maldegem and Adeghem.

That canal taking first the waters of the Lieve in our city, encircled the Castle built bij Philippe d'Alsace, in the XIIth century, passed through the meadows of Wondelgem and Vinderhaute to St. Laurens, and, bij a curve, joined Damme on the Swin.

The city had acquired the banks of the river our rich merchands were able to import thousands of pounds of English wool, or to export all over Europe, into Livony, Spain, Sicily, the cloth woven in Flanders. Ghent was a great industrial city. In the glorious epoch of James and Philippe Van Artevelde, our city was mighty and prosperous.

During nearly two centuries the Lieve canal was a busy thoroughfare. Unhappy wars around the middle and the end of the 15th century, repeated struggles with the Dukes of Burgondy - cause of the loss of our municipal independence — were fatal to the Lieve, which required a continual and costly dredging. We know for a certain fact that as early as the reign of Philippe le Beau the canal got sanded up, as had happened to the Gulf of the Swin before, soon Antwerp with rising prosperity, was to be the centre of F'lander's business.

With the first years of the XVIth century grave political troubles befell our city, but a certain source of richness remained its privilege, as the Staple of corn and centre of the whole commerce of wheat, and transport of wheat in its interior waters.

The Meulestede bridge at the end of the XVII Century.

The corporation of boatmen was at this time in high honour ; their magnificent House, built in 1554, quai au blé, is a proof of their grandeur. At the same time the « Halle aux draps remained unachieved during many years, on the foot of our Belfry.

In the year 154o, the wroth of the emperor Charles fell cruelly on the rebellious burghers of Ghent and the whole of their property was confiscated ; only the butchers and boatmen escaped to this severe punishment.

In the course of the following years, our town tried, by all means, to recover, if not politecally, at least economically its rank as first city in the county of Flanders. Rich merchants, - the excessive privileges of the corporations being abolished - settled in Ghent, making it the principal market for Flemish linen ; at the mean time the trade of wheat and corn recorded an increased prosperity.

The need was also felt of direct communication with the Sea. Several plans were proposed. The best was doubtless, to take, in northly direction, to the Hont or West-Scheldt. This was the prospect

exposed by Francis Van de Velde, in 1545, to the Aldermen. Charles the Fifth, by an act signed at Tournai, the 26 of May 1547, gave the municipality his consent to build, at their own expense a canal from Roodenhuvze to the dike on the Brackman.

That new canal, the Sasschevaart was open for navigation at the end of the following year. The building of the locks took, evidently, a longer time. On the 3th of April 1563 the Zoutespey dike was pierced, and the next day the first ship was moored in Ghent, on the Kuypgat.

Marcus Van Vaernewijck, the historian of Ghent exclaimed : May it please God that the canal be a boon for Ghent and the whole land !

That pious wish was not to be fulfilled. For in 1566 came, as an explosion, the religious agitation. Alva with his tyranny and bloody repression, and the gathering of the tenth penny, caused a rebellion in the nothern provinces. On the 21th of May 1572 the « Watergeuzen » take Sas-van-Gent, destroying the locks and the bridge, annihilating in a few hours the long and patient work of years.

From the reign of Albert and Isabelle was the canal used for internal navigation only. But the way to the Sea, closed in fact incessantly for seventy-five years, was officially closed by the Munster Peace in 1648 the people of Ghent had to drop this project of a connection with the Sea. In the course of the twelveyears-truce, the States of Flanders decided to realise a prospect existing since the XIVth century : create a passage from the Lys to Bruges.

The Archdukes by grant signed on. the 17th of July 1613 authorised the digging of the Brugescanal. Forty years thence the spanish government decides to deepen that canal and to draw it to the Sea, through the enlarged Ostendcanal.

In the year 1605 Biscayan coaster enters the port of Ghent. But the way to the Sea was not successful, perhaps because the new port was situated extra muros, outside the Bruges gate.

New calamities befell, on the otherhand, our Flanders, owing to the war of Spanish succession, destroying our best prospects.

With the beginning of the XVIIIth century, under the Austrian domination, peace and a certain welfare came at last. Trade revived. Our boatmen restored the locks of Harlebeek on the Lys destroyed by the French. The Government has the canals of the Lieve and of Sas van Gent dredged and deepened. There are even rumours of straightening the bed of the Scheldt between Ghent and Antwerp in order to do away with the countless meanders.

But all this was not be of grat avail, so long as the Scheldt was closed from Antwerp to the Sea. The people of Ghent were not to be disheartened by the most unjust doings of Holland and the European powers. They decided to transport the products of our industrious country to Ostend directly. Entreprising business men formed agencies for direct relations with India.

Two merchants of Ghent, the Maelcamp brothers, with the aid of Prince Eugène of Savoy, were most active, organising trade expeditions to China, Bengal and the Malabar coast, in 1715. In 1722-23, the «Compagnie d'Ostende » was created. Our gouvernment founded this institution along the lines of those existing in Holland and in England. Amongst the seven directors of the Imperial and royal Indian Company, chosen by the Emperor amongst the officers of big commercial concerns, we find four merchants of our town.

The Sasschevaart in the XVIII Century.

It is this improvement in business conditions which led to the erecting in 1719 of the « Pakhuis », or Municipal Warehouse on the Cornmarket near the old harbour.

It was in this building that To years later the Austrian Government accomodated the Chamber of Commerce.
In 1740, was erected the Guildhouse of the Boatmen at the Quai au Blé, which goes te prove that this corporation was still prospering and active.

The Ghent-Bruges canal was completed in 1751, by the digging of the « Coupure », that linked the river Lys to the Bruges canal and the old to the new port.

The inauguration of this new canal (27th of December 1753) was a huge festivity. A French Seaship, the « Concordia » of Nantes with a cargo of wines, was the first one to enter the port.

The imperial warehouse was erected at the angle of the « Coupure » in 1779, at the site where presently is located the « Hospice van Caeneghem ». The government two years later located under the «Belfry » the Trade Academy.

Under the Emperor Joseph II, whose preoccupations were essentially economical, the hope was fostered to reopen the Scheldt and the Sas-Canal. But the so called « Guerre de la Marmite » was fruitless : the « Fontainebleau treaty » was proclamed in Ghent on the 2d of March 1786.

The napoleonic conquest gave us the liberation of the Scheldt and the Sas-Canal, abolishing the iniquity of the peace of Munster.

The french emperor had it mind to restore the old Sasschevaart. But his long struggle with the european coalisation did not allow him to put his plan into practice.

In the first years of the XIXth century commerce follows the upward trend of industry, thanks to Lievin Bauwens' daring activity. Ships now freely ply the Scheldt as far as the Sea.

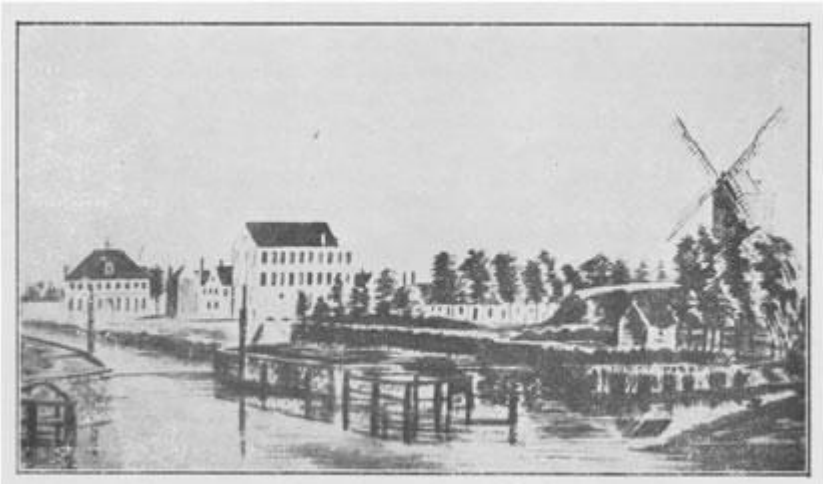
To the Trade Justice Court, in Session Since 1798, a Stock Exchange and a Chamber of Commerce are now added (18011803)

The unloading of numerous boats daily, induced the mayor of Ghent to revive the corporation of " Stukwerkers " or lumpers.

But the main stimulant to the revival of Ghent was the digging of the Terneuzen canal, during the reign of William the first of Holland.

Ghent Seaport ! This dream of many of our burghers in the XVIth century and which Napoleon pursued for military purposes, was to become a fact at last ! But the difficulties to conquer were many.

The Sas-canal at this period was in a state of utter ruin. Only a sandy channel was left navigable, and could be used merely for local shipping. The passage to the Brackman became from day to day more ineffective even to let out the waters of the low polderland.



The Terneuzen canal at the beginning of the XIX Century.

It was imperative that a way should be found to bring to an end a state of things so fatal to farming. In 1817 a proposal called for digging out the old Channel again, and connecting same with the curve of the Westerly Scheldt at Terneuzen. This proposal did not meet the approval of the Etats Généraux. We feel inclined to think, that fear of business

competition had something to do with it. There is likelihood, that the their existing ports, as well in Belgium as in Holland, feared a competitor, famous of old, might again rise in prosperity. They opposed themselves bitterly, at least under cover, to prevent its revival.

The situation, however, became more and more grave, the lowland was on the verge of being overflowed. The population on the banks of the canal claimed with insistance the digging, be it at their own costs, of a canal to let out the menacing waters. The Dutch government gave way to the loud claims of owners of the Polderland, and decided that the canal be deepended and linked to the Scheldt in order to prevent the overflowing so damageable to the banks of the canal and to our city.

Opponents were silenced. Once more the private claims could do more than the voice of the general interests. The abandoned plan of 1817 was retaken in hand. The canal's real and primitive scope seems to be remembered this time. M.M. the Chief engineers of Flanders and Zeeland were ordered to make up plans, in order to deal once for all with the problem to its full extent.

And in 1825 a royal writ was granted authorising the works of repair to the Ghent canal at Sas of Ghent, and its prolongation to Terneuzen, for the outlet of waters and also on behalf of the navigation : « as it was intended said the writ, to make the whole length of the canal navigable for seaships as far as the town of Ghent ». Thus the canal must assure the drainage of the land and open for Ghent a large way to the sea.

The new waterway started from Ghent below the site called « Tolhuissluis » as did formerly the Sas canal, but instead followed a westerly course and parallel to the same where it left the town.

By writ of 17th december 1824, the king ordained the completion of the works, estimated two millions of florins, the administration of Ghent having to contribute for 150.000 florins.


Trade Basin (Right bank).

This entreprise was begun in May 1825, and pursued with great activity, so that the inauguration was celebrated, in grand style, in the presence of the Governor of the Flanders and State Councillor, H. E. van Doorn, the 18th of November 1827. A parade lift Terneuzen, where his Lordship, when going aboard, extalled on the immense blessing these works were to be to Flanders and Zeeland. He stopped in Sas van Gent, was met there with grand ceremonial, and did not resume his way to Ghent until the following day : On either side of the canal, people massed throng acclamed, and on the water a multitude of dressed boats, greated the Governor as he passed by.

His Excellency was received in Ghent by the Regency, and congratulated by the Mayor, in a patriotic speech of which we note the following passage : " This work, considered not long ago as chimerical, was projected and developed by our King himself, and brought to its maturity and realization"

The population of Ghent made an enthousiastic reception to His Excellency. A somptuous banquet was offered to the Governor, to the States of Flanders and Zeeland, and to the authorities of the Province, by the Regency in the state room of the Town-Hall, called " Salle de l'Arsenal ". — Gold,

silver and bronze medals were coined in remembrance of this glorious day, and presented to the guests.

The proportions of the canal, as it was then, would indeed seem poor to our modern eyes. Its breadth was of 23 to 25 meters at the waterline, TO meters at the bed, and 4.40 M. its depth. It would be impossible to our big ships of 1o.000 tons to use such a waterway and reach Ghent. It was sufficient however for the navigation at that period and the working out of such a scheme was highly appreciated at the moment. A direct and important communication from Ghent with the Sea existed now to remain, a factor of the highen importance for the future prosperity and welfare of its inhabitants. Constant and rapid progress marked that secular period of growing activity.

Timber Dock. Unloading of sawn timber.

To complement the canal our Municipal Council had in 1827 the Trade Dock dug, running from one of the moats of the Spanich Castle near the Antwerp Gate, linked to the Lys and touching the Porte du Sas.

In 1828 the Trade Dock was connected with the Terneuzen canal which was located immediately below the lock Tolhuis-sluis, and in 1829 it was inaugurated in presence of William the First, King of Holland.

Quays were constructed for the unloading of ships, on the left bank of the basin and bridges on the two extremities, the roads to the Sas and. to Antwerp.

Ot the left bank of the Dock was erected, after plans by the architect Roelandt, the Ware-House. The first stone was laid. in 1844 by Leopold the First, King of the Belgians. From 1866 to 1878 the warehouse installations and the neighbourhood were improved by the construction of several piers and sheds.

During to progress in Shipbuilding and a steady increase of the dimensions of vessels, the Terneuzen Canal became gradually inadequate and could not face the needs of modern Shipping anymore.

Negociations between our administration and the belgian government on one side, and with Hollands government were opened. These negociations were long and strenuous, but they came to an end at last. In 187o the works of enlarging and deepening our canal were begun, but the agreement with Holland was not signed until the 31th of October 1879. Our government was bound to dig a basin of 8o to 100 metres in breadth on the «Avant Port » with on the right bank a quay wall of 1.050 metres, allowing to reach a landing of 7.50 metres. On the left bank should be erected a wall of sustentation, long 187 metres and two dry docks, whose proportions were such as the larger one actually measures : 130 m. in length ; 13 m. in breadth and 5.45 m. depth of water on the sill ; the other 75.85 m. in length ; 11m. in breadth and 4.45 m. of water depth.

As the terms of the agreement called, the City carried tho expenses of the building works on the plot of the Fore-Haven.

A special commission of the Town-Council, examining the question of the development to be given on the maritime installation, the creation of a Timber-basin, with its quays and sheds was decided on the right bank of the Trade-basin.

This timber basin was inaugurated on the 5 th of 7ber 1881, by the King, H. M. Leopold the second.

But it is the fate of a sea-port to be always on the height of the bettering of transport means and of the handling of wares; if not, it loses its utility.

And so it happened that, the works of deepening and rectifying the Terneuzen canal being just ended, and also the construction of the Fore-haven and of the Timberbasin the ships became of larger and larger proportions. New works to our canal and its basins were unavoidable.

In 1894 our Town council and the « Chambre du Commerce et des Fabriques » wiht united stress, engaged long and laborious conferences, which ended with the conclusion of a convention between the Belgian State and the government of Holland, for the improvement on a large scale of the Terneuzen canal. So that it can besaid now to be one of the most grandiose maritime ways in the world.

Fore harbour. — General view.

Our town council decided on its own account to realize a new extension of its port installations. A vaste scheme due to the initiative of our Mayer Emile Braun and of M. de Smet de Naeyer, chairman of the « Association des Intérêts maritimes de Gand «. That plan, with the consent of the Government, was laid down in session of our council, the 6th of August 1900. -It comported the creation of a vast basin, 230o m. in length and 18o m. in breadth, opening directly in the Terneuzen canal. On the right bank of this basin came, cutting askance, 5 darses or sidebasins, 140 m. in breadth and 500 m. in length.

A boating canal, named peripheric-canal, marks the limits of a large industrial ground of this new work, which covers a surface of more than 200 hectares.

The lines of this new darse became modified in 1912, by decision of our town-council, for many reason. The still growing anchorage of our basins, and the growing also of the tonnage obliged naturally to enlarge our darses, as the seaships occupy more and more room and require a larger space for their working. The higher tonnage required also a large platform, in order to permit a rapid and less expensive working.

Finally the radius of the railway siding, only of 100 m. in the primitive plan, should be brought to a minimum of 15o m., so as to avoid the great difficulties experimented in other ports.

To obviate all these inconveniences it was decided to substitute 3 larger darses to the 5 darses of the first plan.
Taking into account the work already achieved the lengths were brought to:

250 m. for the north Darse,

290 m. » » middle Darse,
and 250 m. » » south Darse.

It was justly observed that with such considerable breadth, the steamers could move and run along side with the greatest ease, but further that it would be possible to establish in the darses numerous a dead boats » permitting the direct unloading from the ships on lighters. The Great-basin, the north and middle Darses were successively built. On this new plan were executed, in the years 1910-14, the finishing work of the north Darse.

The basin digging and construction of quaywall, were followed immediately, in 1909, by the equipment and plant.

In 1903 the Westquay of the Great-Basin was provisionally `provided with 16 steam-cranes of 2 tons available since the Fore-Haven and the Petit-Dock were installed with modern and perfectioned plant.

Our town-administration acquired 25 cranes actionned by electricity, and movable along the quay, for its Fore-Haven and Petit Dock.

In 1909 the provisional plant al Port-Arthur quay was supplied by 3o electric cranes of 2.5 tons, with arcs.

The equipment of part of the south-quay on the Middle Darse followed at the end of 1911, with 3 electric cranes of 2.5 tons.

The year 1914 promised to be most favorable for the further development of our port, as fruit of long and assiduous efforts, when suddenly broke out the Great War.

Ghent and Northern Flanders were occupied by the German Army as soon, as the first fortnight of October. A long period of tedious inactivity succeeded to the hopeful activity of the previous months of 1914, and persisted more than four years, until the deliverance came, of town and land, the 11 of november 1918.

Our open way to the sea was then in a pitiful state. Indeed the length of the canal in Holland's territory, from Terneuzen to Sas of Ghent was untouched. But unfortunately in our land, the war had fought its furious struggle on the banks of our canal, during the last fortnight before the armistice, from the frontier of Holland to Ghent all was ruin on the canal ; the remains of sluices and locks lay scattered in the navigable passes of Selzaete and Riem, Terdonck and Langerbrugge.

Besides 4 large torpedo ships had been sunk in these passes, making navigation totally impossible for boats of any proportions.

The state of our port was not less disastrous ; 65 ships and punts lay sunk in the basins, and also wrecks of machines. The railway bridge was wrecked in the Forehaven, as the bridge of Meulestede. On the Peripheric-canal the bridges 1 and 4 were ruined. All the quays of the newly built installations were impracticable. On the eve of their flight, the german soldiers had, without any strategic necessity, blown up even the metallic frames, and destroyed the 6o cranes they were not able to transport.

One of the darse quays gave way and fell in, on a length of 75 m. under the weight of sand and gravel the Germans had accumulated on it, so that more than a year after the armistice it was not entirely removed.

Two sheds of the new basin, two more on the Petit Dock, and one of the Timberbasin were destroyed by fire. Electricity and water service existed no longer.

In a word, our port was, after all these willful acts of vandalism, in a state of utter ruin and desolation.

Immediately after the armistice, public and private initiative combined to repair the destruction.Thanks to the activity of our « Administration des Ponts et Chaussées and the stress of

able contractors well supplied with the best plant, our way to the sea was cleared, navigation was maid practicable to all ships, on the 15th of march 1919.

In the port the town administration, on its side, had rapidly cleared the Grand Basin*:* and the Fore-haven and so it was possible to receive on the 21th of march 1919 the *S. S.* Millinocket, the first high sea ship to enter our harbour since the war. She flew the American flag, had a water-line of 23 feet and came directly from the Mexican golf, loaded with 4.000 tons of cotton and rails. A medal was coined to commemorate this fact, by our town administration.

In 1920 the repair-work on the canal was vigorously pursued, but had to be slackened the following year. By law of the 26 August 1920 parts of territory of Oostacker, Ever gem and Wondelgem were joined to our territory, and so the limits of our port were extended Northward to a point down the islet of Langerbruggen.

In the port itself, reconstructing work was hastened to the extreme. It may be said that in 1921, not only the ruin was entirely repaired, but sheds built, new lifting machinery supplied. The building of two immense and two-storied sheds in concrete was ended. The whole of this construction, of a type unique in Europe, presents to the commerce the greatest facilities, so for the rapidity of handling as for the preservation of the wares.

In 1922 the movement of our port was higher than it was in 1913, and it could be foresaid with security that traffic was to rise, not only to its former importance, but in a measure beyond the most daring hopes.

The following years gave right to this prevision, and hand was laid to the rapid completion and extension planned in 1900.

In 1922 also, on the right bank of the « Grand-Bassin » the building of 1282 m. of quay-walls was begun and ended the next year. The south wall of the north-darse was equipped with 6 cranes of 5 tons, with an arc that projected over four pairs of railway-tracks.

In 1924, February, the construction of 644 m. of quaywalls on the North and East side to compleet the Middle darse, was untertaken. That work was ended in 1926. The quays were equipped with 8 cranes of 5 tons. 8 new cranes of 2.5 tons were put in working at the Riga-quay.

Put off in 1926, the construction of the quays and machinery ,of the Southdarse, was retaken in hand in 1927. Pursued with vigour, that work was solemnly inaugurated by H, M. King Albert, in presence of the Royal family, the 13th of July 1930.

The last part of the plan of extension of our port, is now, after 3o years realised in its whole extend. It may be observed that the completion of one third of the works took 18 years, before the war. Only seven years (1922-29) were necessary to execute the 2 remaining thirds. And yet the development of our traffic was in great advance of the progress of the building.

Inséré le 28 décembre OPEN FORUM Enlevé le 28janvier 2013

Cargo absorption challenges for chemical/product tanker operators

Transport by sea is still the most practical method of moving large volumes of liquid materials in a safe, cost effective manner.

Cargo volumes and the number of different cargoes shipped have grown steadily over the last few decades. This trend is expected to continue to do so as industrialisation spreads and global energy, chemical and food requirements expand.

To enable the carriage of a wide range of materials a chemical tanker owner has to decide between using coated mild steel tanks or stainless steel tanks. As the cost of stainless steel remains prohibitively high for many tanker operators, coated mild steel tanks remain the only cost effective

alternative. The correct choice of tank coating to meet the operational needs of the operator is therefore critical.

When using coated mild steel tanks, an important consideration in the industry is the absorption of cargoes into the tank lining. This can in turn lead to subsequent cargo contamination, which can occur as a result of the transport of small quantities of a previous cargo into the next one.

Different coatings absorb, desorb and retain cargoes in different ways depending on the coating type, the cargo in question, the temperature and duration of carriage and so on. When switching from cargo to cargo, the challenge then becomes one of cleaning and recovery in order to return the coating to an acceptable condition ready for the next cargo.

Significant expenditure

Depending on the specific trade patterns and coating type, tank cleaning operations can make for a very significant expenditure in terms of time and money. Couple this with tightening regulations governing permissible cleaning methods and materials and the problem is not going to go away.

Recognising this fact, International Paint spends a great deal of time and resource in its dedicated tank lining laboratory in Newcastle Upon Tyne in the UK, understanding the issue of cargo absorption.

IP's dedicated tank lining laboratory in the UK.

"We study this at a molecular level", explained Paul Devine, product manager for International Paint. "The absorption profile of a cargo into a coating is heavily influenced by the coating technology type but also by the cargo itself. Having an understanding of the most challenging cargoes, in terms of their fundamental chemistry and physical properties enables us to tailor our new product development work to more effectively meet the needs of the industry.

"Low cargo absorption is always a key focus in all of our tank lining development work. We were heavily involved in a project with Marinspec Associates, the aim of which was to evaluate cargo absorption of current tank linings and subsequent transmission into the next cargo and we were very pleased with the results.

"Building on this the aim now, is to move beyond the established technologies and deliver a coating which eliminates cargo absorption in the vast majority of cases, thus massively reducing the likelihood of subsequent contamination, increasing vessel operating flexibility, cutting cleaning times significantly and opening up new trade opportunities for our customers, " he concluded.

Turning to hull coatings, International Paint has claimed success with its Intersleek® 700 antifouling.

The 2006 decision by the National Shipping Company of Saudi Arabia (NSCSA) to apply Intersleek® 700 on the hulls of eight VLCCs has resulted in fuel savings of more than 6% and CO2 emissions cuts running into many thousands of tonnes.

The VLCCs are managed by Mideast Ship Management, the vessel operating subsidiary of NSCSA. NSCSA which runs a fleet of more than 30 vessels including 17 VLCCs, took the decision to replace self-polishing copolymer (SPC) biocidal antifoulings with International Paint's biocide-free silicone-based foul release coating, Intersleek® 700, when the eight ships were docked successively through

2006 and 2007. The application involved blasting the ships' hulls and coating their vertical sides with the coating.

Since then, detailed performance analysis on board one of the VLCCs, the Ramlah, has proven the relative fuel savings and emissions reductions resulting from the use of Intersleek® 700 rather than the earlier SPC antifouling. The analysis covered the whole docking period prior to the application of the Intersleek® 700 system (the previous 60 months) and the on-going performance since the application (up to 54 months to date).

The results demonstrate an overall 6.4% improvement in fuel efficiency which translates into a saving of more than 6,500 tonnes, equivalent to around $3.2 mill at $500 per tonne. Corresponding savings in greenhouse gas emissions mean that more than 20,000 tonnes of CO2 have been prevented from entering the atmosphere from this one vessel. The data has been independently verified by vessel performance specialists, BMT.

“These results are very important for us,” said John Willsher, Intersleek® product manager. “They demonstrate that ship operators can not only benefit from substantial fuel savings but that the latest generation of foul release coatings can play a key role in shipping companies' environmental strategies as they seek to reduce emissions. As we have said previously, there are many new technologies currently under development, some quite complex and expensive which do offer potential, but Intersleek® is relatively simple, available now and these results prove the positive impact it can have.”

TankerOperators

Inséré le 28 décembre BOOKS Enlevé le 28 janvier 2013

Van Fokkenmaat tot Hemelvaarder

Cees de Baare

Het boerenarbeidersgezin Zorgdrager leidt een armoedig bestaan. Vader Zorgdrager stuurt de elfjarige Cornelis naar Groningen zodat hij als fokkenmaat kan varen aan boord van de koftjalk 'Neerlandia'. Het bevalt hem goed. Jaren later krijgt Cornelis zijn eigen schip en trouwt hij met Stephanie. Samen krijgen ze een zoon genaamd Bram. Uiteindelijk bouwt Cornelis met behulp van een boeren echtpaar dat hem lief is een rederij op. Tijdens de Tweede Wereldoorlog maakt Cornelis en zijn bemanning, tijdens de vaart voor de Engelse marine, angstige en zeer gevaarlijke momenten mee. Een stukje Hollands Glorie verweven in een nautische roman die zich afspeelt tussen 1910-1945.

Een stukje uit het boek:

David pakt de kijker en tuurt naar het licht aan de horizon. Hij ziet geen licht, maar vlammen. "Dat is een schip in nood mijn jongen, dat is geen vast licht. Stuur jij maar op het vuur aan dan ga ik de kapitein even roepen."

Cornelis ligt net in diepe slaap als er op de deur van de hut wordt geklopt. Hij schiet zijn kooi uit en heeft al in de gaten dat ze een andere koers varen, of de wind moet verschrikkelijk zijn gedraaid. Hij schiet zijn broek aan, doet de deur van zijn hut open en kijkt recht in het gezicht van David.

"Cornelis, kom er even bij, wij hebben een noodvuur aan de horizon en varen er nu recht op af." Als Cornelis ook in de stuurhut komt, pakt hij direct de kijker en tuurt naar het licht in de verte. "Het is nogal wat mijl weg", zegt Cornelis, "roep Leo er maar bij. Ik wil vol vermogen, wij moeten ons haasten." Maar net als David Harry naar beneden wil sturen om de machinist te porren, komt de rest van de bemanning de stuurhut al in. "Mannen", roept Cornelis, "wij hebben een noodvuur recht vooruit, ik wil er zo snel mogelijk heen. Leo, ga jij naar beneden en haal alles wat je hebt uit de

motor, elke minuut telt!" Boris staat achterin de stuurhut en stelt voor om maar een grote pot koffie te gaan maken, het wordt voor iedereen een lange nacht. Het vuur nadert niet snel, maar komt wel steeds dichterbij. Als de contouren van het schip in zicht zijn, heeft iedereen al snel in de gaten dat het een gemotoriseerde grote klipper is met beperkt zeiltuig. Achterhalen wat er aan de hand is blijkt lastig, er wordt gegist. Als het een gemotoriseerde klipper is en de motor is defect, dan kan men nog met het zeilen uit de voeten. De bemanning begrijpt niets van de situatie.

Title : Van Fokkenmaat tot Hemelvaarder Auteur : Cees de Baare aantal pagina's : 248 geïllustreerd : nee uitvoering/format : paperback 12,5 x 20 cm ISBN : 978-94-6176-888-9 vaste prijs : € 17,95

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Game changing new chemical tanker coating introduced

International Paint has introduced Interline®9001, a new bimodal epoxy coating specifically designed for chemical tankers' cargo tanks.

With enhanced cargo resistance, zero absorption for many cargoes and fewer cycling restrictions, Interline®9001 simplifies the carriage of a wide range of liquid cargoes, optimising vessel earning potential, IP claimed.

Modern chemical tankers built to IMO Ship type I, II and III are designed and equipped to handle a very wide range of liquid cargoes, ranging from relatively innocuous materials, such as vegetable oils, to more aggressive types, such as ethylene dichloride and caustic soda.

Most chemical tankers are fitted with coated mild steel tanks, stainless steel tanks, or a combination of both.

The most commonly used type of coating on mild steel tanks is epoxy phenolic, which provides broad cargo carriage capability but can absorb and retain certain cargoes. This can create a difficult cleaning challenge to remove any absorbed cargo and thus minimise the risk of contaminating subsequent cargoes. A 'recovery period' may also be required.

It takes around five days to coat a large tank.

The extra activities needed with this type of coating can incur significant expense for a ship operator in terms of time and money.

The next most common type is zinc silicate. These coatings provide excellent resistance to solvents and pure chemicals but are limited in their use due to an inability to resist acids and alkalis. The rough surface of zinc silicate coatings can also be difficult to clean, again costing time and money.

IP explained that the costs of on board cleaning are significant. Bunkers for hot water for example could mean a tank cleaning operation alone adding over $100,000 to operating expenses for one full vessel clean and this doesn't take into account manpower or costs of cleaning materials.

Andrew Hopkinson, IP's business development manager explained that Interline®9001 was designed to deliver greater efficiency and flexibility in the operation of chemical tankers, easily switching from one cargo to the next with minimal downtime. It can carry all of the cargoes that standard epoxy phenolic technology can, plus a further 25% of the large volume cargoes that it cannot and has over 60% fewer cycling restrictions.

He claimed that the new coating could handle all but 10 out of the 1,000 cargoes on the IMO list. He also said that the technology opened up new -previously restricted - cargo sequences for the carriage of aggressive cargoes, for example, methanol to fatty acids to ethylene dichloride back to back, with no coating recovery required.

Its low cargo absorption profile reduces the risk of contamination between cargoes and combined with its smooth, glossy surface, can cut cleaning time and materials by up to 70% compared to standard epoxy phenolics, or zinc silicates.

With reduced cleaning requirements comes a corresponding reduction in fuel and CO2 emissions. In addition, a low volatile organic (VOC) content and 80% volume solids helps to enhance operator environmental profile.
Based on bimodal epoxy technology, Interline®9001 is a carefully engineered blend of polymers. First, a special combination of low and high molecular weight polymers creates a loosely bound, but highly cross linked flexible network chain on ambient curing.

The post cure process then locks these network chains firmly together to provide a highly chemical resistant paint film offering low absorption properties and easy clean while still maintaining flexibility to ensure crack resistance on welds when subjected to vessel flexing, Hopkinson said.

He claimed that the new coating would last about twice as long as an epoxy phenolic type coating and could easily handle cargoes, such as ultra low sulphur diesel fuel, which is being carried in greater volumes, due to the IMO restrictions on high sulphur bearing fuels.

Bunker costs reduced

Methanol was one of the largest cargoes carried today and to clean the cargo tanks, it would take around $100,000 worth of bunkers. This activity could occur about six or seven times per year, which is a costly exercise. Hopkinson claimed that the cost could be significantly reduced by using the new coating.

The product was assessed by L&I Maritime (UK), which offers consultancy services to the chemical tanker market.

L&I Maritime's Guy Johnson said; "Having assessed the cleaning properties of Interline®9001 in a range of cargoes and in accordance with the Dr Verwey Tank Cleaning guidelines*, it is evident that compared to the industry standard epoxy phenolic and zinc silicate systems, Interline®9001 is easier and quicker to clean.

"Furthermore, there is data to support the claim that when Interline®9001 is cleaned in direct accordance with Dr Verwey, or by up to 70% less than Dr Verwey recommends, the level of cleanliness achieved is the same. This will likely translate into considerable savings in time, materials and manpower for vessel operators when cleaning from one cargo to the next," he concluded.

This level of efficiency means that a typical 45,000 dwt chemical/parcel tanker could reduce its CO2 emissions by up to 400 tonnes each time it carries out a full vessel clean.

Hopkinson said, "Interline®9001 is the result of working very closely with customers to fully understand their needs while engaging cutting edge research in our dedicated tank lining laboratory.

"Our detailed knowledge of the most aggressive cargoes, together with our experience in tank coating application, allows us to offer a new product that maximises both operational and environmental efficiency in an increasingly challenging market. We believe Interline®9001 represents a smarter solution to maximising profitability," he said.

Market potential

He outlined the market potential saying that between 2002 and 2102, the number of vessels had doubled. Today, there are about 4,000 chemical tankers and 3,000 product tankers in service with about 800 to 900 more on order in each sector. In addition, the size of the vessels has grown with the average rising from 20,000 dwt to 30,000 dwt and even 75,000 dwt chemical tankers being ordered.

IP's new tank coating could last for up to 15 years.

Although new orders had virtually dried up, Hopkinson said that he was expecting contracting activity to pick up again in 12-18 months time. He said that IP was negotiating for about 14 contracts with seven different owners. The vessels involved range from 2,500 dwt to 45,000 dwt. They are split between six newbuildings with the other eight being repair & maintenance contracts.

He said that the thrust of IP's marketing campaign was aimed at owners rather than shipbuilders, as the builders tend to always quote for a ship contract with the cheapest possible option.

IP saw the market potential for the new coating both in repair & maintenance and newbuildings, as the older vessels need their cargo tanks re-coated, which for epoxy phenolic lasts around seven and a half years. Although not tested for that length of time, IP thought that Interline®9001 would last around 15 years. The company said that the product had been under development for 12 years.

For a larger vessels, a full coating would take around 30 days with one tank taking five days from start to finish. It has a higher cost base – about $1 mill for a 45,000 dwt vessel - but Hopkinson said that the payback time would be within 12-18 months, depending on the size of the vessel and the number of tanks involved.

The amount of paint involved for a full coating ranges from 1,500-2,000 litres for a 3,000 dwt vessel to 15,000 litres for a 45,000 dwt chemical tanker. TO

*Dr A Verwey is the author and publisher of the well known and worldwide used Tank Cleaning Guide.
The 8th edition lists over 400 liquid substances carried in bulk. The cleaning charts give the tank cleaning procedure for each listed product to clean from and to in a matrix form.

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High cost of bunkers impacts on earnings

In the weak market seen at the beginning of February, bunker prices were a critical factor for tanker earnings.
The continuing rising fuel costs can once again undermine the ability of shipowners to breakeven on their operating expenses, warned Gibson Research.

In the last few months, bunker prices have risen sharply, with the upwards pressure on oil prices. Since September 2010, the average monthly price of 380 cst fuel oil in Fujairah has increased by $96 per tonne (+22%), reaching $540 per tonne in January 2011 and has since climbed still further to $623 per tonne by the second week of February.

While volatility helps oil traders, shipowners have to battle another drop in revenues. The average TCE earnings on the benchmark VLCC route TD3 (ME Gulf – Japan) have dropped from their seasonal high of $31,000 per day in November to $14,000 per day in January and only $9,500 per day at the beginning of February.

In a stronger market, the relative weight of an additional $100per tonne in bunker costs would be significant, but not dramatic. However, in a situation when tankers are hardly covering their operating costs, this is a painful situation.

As to a rule of thumb, for every $15 per tonne increase in bunker prices; VLCC owners operating on TD3 require an extra WS point to cover these costs. With the latest Fujairah 380 cst bunker price passing the $610 per tonne mark, this would mean that as much as WS 40 points of the VLCC freight rate goes on paying for the fuel.

Considering that the current spot rate on TD3 balances at WS 49, Gibson said that there was not much room left for profit. When this article was written at the beginning of February, TCE earnings were below the average VLCC operating costs of around $11,000 per day, which put another way, this means that shipowners pay for the pleasure of transporting charterer's cargoes.

Similar scenario

This scenario is similar for other tanker size groups. TCE earnings for both Suezmaxes and Aframaxes were way below their operating costs. Ever rising bunker prices are one of the reasons that pushed both markets over the edge. This is another indication of unique challenges that tanker owners will face in 2011.

However, the major concern is still the over abundant supply of new tonnage. With the crude tanker fleet expected to grow quicker than global oil demand this year, the downwards pressure on the freight rates could be maintained. At the same time the rising bunker prices, which accompany the world economic recovery and political risk, will be another burden to owners.

Slow steaming is possible, but is only a part solution. After this owners are in a dilemma. The first option would be to continue running vessels at a loss, but be ready for any rebound in the market. An alternative would be to idle their fleet, therefore risking approvals, knowledge and momentum in the market; thus, they are between a rock and a hard place, Gibson concluded. TO

Inséré le 03 janvier News Nouvelles Enlevé le 03 février 2013

Owners and unions extend IBF piracy high risk area

Following in depth discussion among the parties of the International Bargaining Forum (IBF), a new agreement was reached for vessels/seafarers trading in the Gulf of Aden, Arabian Sea and North Indian Ocean regions.

It will come into effect on 1st April 2011, allowing ship operators time to make any necessary preparations to follow the new agreement.

In essence, The Joint Negotiating Group (JNG) and the International Transport Workers Federation (ITF) agreed extend the geographical coverage of the IBF High Risk Area and terms and conditions applying in the area as follows:

1. With effect from 0001Z on 1st April 2011 the Extended Risk Zone is - the western border of the zone runs from the coastline at the border of Djibouti and Somalia to position 11 48 N, 45 E; from 12 00 N, 45 E to Mayyun Island in the Bab El Mandeb Straits. The eastern border is set at 78 E, the southern border is set at 10 S and the Northern Border set at 26 N.

2. The IBF constituents have agreed that during a vessel's transit of the Extended Risk Zone protection of seafarers through the provision of increased security measures should be adopted. Such measures must be above the latest Best Management Practice (BMP) level and may include the provision of personnel or systems, which appropriately reduce the vulnerability of a vessel. The sufficiency of such extra security measures should be determined depending on vessel type, size, freeboard during transit and speed, with consulting and seeking advice of respective ITF union(s) where necessary.

3. The IBF constituents confirm that the adoption of BMP is required of all vessels operating under IBF agreements as a minimum standard of protection.

4. Within the Extended Risk Zone the IBF constituents agree to retain the previously designated IBF High Risk Area as it is recognised that the pirate attacks emanate mainly from bases in this region. The Western Border of this High Risk Area runs from the coastline at the border of Djibouti and Somalia to position 11 48 N, 45 E; from 12 00 N, 45 E to Mayyun Island in the Bab El Mandeb Straits. The Eastern Border runs from Rhiy di-Irisal on Suqutra Island to position 14 18 N, 53 E; from 14 30 N, 53 E to the coastline at the border between Yemen and Oman, together with a 400 mile zone off the eastern coast of Somalia, ie from Suqutra Island down to the Kenyan border to the South.

5. During the period of transit of the area designated as the IBF High Risk Area, seafarers shall be entitled to compensation amounting to 100% of the basic wage and a doubled compensation payable in case of death and disability. This entitlement should apply on each day of the vessel's stay in the High Risk Area.

6. In the case of vessels that will transit the IBF High Risk Area outside of the east bound and west bound lanes created under the International Recommended Transit Corridor (IRTC), seafarers have the right not to proceed with the passage. In such an event, the seafarer concerned shall be repatriated at the company's cost with benefits accrued until date of return to the port of engagement. This entitlement shall only apply in respect of vessels which are bound to enter the IBF High Risk Area and will not apply in case of crossing the rest of the Extended Risk Zone.

7. Vessels may deviate from the International Recommended Transit Corridor (IRTC) lanes without affecting the terms and conditions for the seafarers on board for collision avoidance purposes only, as long as they are returned to the original lanes as soon as it is safe and practicable to do so.

8. During the period of transit of the IBF Extended Risk Zone, outside the area which is designated as High Risk Area, each seafarer shall be entitled to a bonus equal to 100% of the basic wage and a doubled compensation in case of injury or death - on any day during which, the vessel he serving on is attacked. The proof of these entitlements shall be subject to a confirmed entry into the ship's log book and a report of attack being lodged with recognised international reporting authorities, such as UK MTO.

The maximum period when these entitlements may apply shall not exceed the number of days of the vessel's transit of the IBF Extended Risk Zone outside the area designated as High Risk Area.

9. The IBF constituents believe that, in order to assist the military efforts to counter piracy in this region, all vessels that are subject to a confirmed attack should report to international navies present in the area, or other relevant authority, to assist in the deployment of naval resources to appropriate areas, where piracy attacks are occurring.

10. Within all of the IBF Extended Risk Zone, including the High Risk Area, the above identified entitlements to double basic pay and double compensation for injury or death will not apply while vessels are alongside a berth, at anchor in secure anchorages off ports, or attached to SBM facilities - with exception of Somali waters and ports. It is understood that vessels will have to transit the high risk area in order to proceed to certain ports and as such the bonuses mentioned in above should cease when a vessel is either all secure alongside, brought up to her anchor or fully coupled to a SBM in any port of the IBF Extended Risk Zone, excluding Somalia. Likewise when sailing, the applicability of bonuses etc should commence when the vessel is "all gone", ie the last line is let go from a berth, when the anchor is aweigh, or a vessel has de-coupled from a SBM.

11. This Revision of the IBF High Risk Area remains in force from 0001Z on 1st April until any further revision or amendment is adopted by the parties of the IBF.

Piracy – a call for armed guards

Reducing the number of ships that are hijacked by Somali pirates is a realistic prospect in the near-term if shipowners and operators are willing to adopt a security posture on board their ships.The response should be directly and robustly proportional to the threat said Gray Page and Protection Vessels International (PI V) at a joint presentation this week.

They said that merchant shipping faced a more widespread threat from Somali pirates than at any time over the past three years, with a fall in incidents in the Gulf of Aden notably offset by an increase in attacks and hijackings in the Indian Ocean and Arabian Sea, where pirates roam on 'mother ships' largely unchallenged by naval forces.

Up to now, shipping industry bodies have been reticent to support the implementation of more robust security options - such as armed guards on vessels and most shipowners and operators do not currently employ armed guards on board their vessels when transiting high risk areas.

Instead, most rely on other preventative measures, such as razor wire, water hoses, warning signs and dummies. Gray Page managing director James Wilkes said; "Understandably, there continues to be a lot of debate about the merits and consequences of employing armed guards on merchant ships and we understand that, in an ideal world, this is not what the industry would want to be doing. However, it is time for shipping to emerge from its comfort zone and face up to the facts and realities of the threat posed by Somali pirates".

Dom Mee, the founder and operations director from Protection Vessels International added: "There is a growing demand from the shipping industry to stem the exponential rise in piracy. PVI is responding to this by providing an armed escort for vessels transiting through established key shipping lanes. Indeed there is palpable relief from masters and crew to have PVI staff on board during a transit. We employ high calibre individuals from a British Military background and use established Rules of Engagement based upon deterrence and self-defence." Wilkes added: "Our view - informed by real experience and a thorough analysis of the situation in the Gulf of Aden, Arabian Sea and the Indian Ocean over the last three years - has been for some time that the armed guarding of merchant ships in these circumstances is a rational and reasonable response to the threat. We believe that fewer vessels would be attacked and hijacked if they employed professional armed guarding services".

Dom Mee continued: "Be in no doubt, piracy is extremely expensive, to shipowners, insurers, charterers and the customer. The human cost of losing a crew to hostage for extended periods of time also cannot be underestimated. The use of private maritime security against the average ransom payment of $3-4 mill demonstrates a clear cost benefit advantage to the sustainment of international maritime trade.

"PVI operates in a challenging environment, providing a high quality response to a clear and present threat to global trade. Until a land based solution is implemented to address the causes of piracy, it

will continue to flourish leaving shipowners and operators little choice but to adopt more robust form of deterrence to counter the threat," he concluded.

Inséré le 05 janvier Historiek Historique Enlevé le 05 février 2013

Lloyd's Register (part I)

1760 – 1834

In the earliest of the Register Books, issued in 1764, the first surviving entry is for the Albemarle. Unlike most British sailing ships, which were built either in Britain or in North America, the Albemarle

A	Albemarle	Wm. Tatam	Lond.	Philadelphia	300 s	2	6	20	Spanish 1743	Mayler & Co.			
	Albemarle	Tho. Beak	Cowes	Hamb.	170			13	Boston 60		A G		
	Albertus —	H. Ludeman	Lond.	Sound & Stet	160	S D B		8	Mecklenb. 63	Frese & Co.	A G		
	Albion —	S. Welborne	Hull	Petersburgh	110	S d S L		8	Hull 64	R. Dewsbury	A G	A M	
	Albion —	G. Falconer	Lond.	Jamaica —	300 s	10	6	20	French 53	Alex. Grant	E M	out	
	Albion —	F. Banks	Hull	Petersburgh	170	S d B		10	Hull 62		A M		
	Alexander	B. Cook	Lond.	Seville —	120			10	Boston 56	B. Cook			
	Alexander	J. Crawford	Liverp.	Virginia —	200			14	Plantation 63	Speers & Co.			
rl	Alexander	J. Rend	Lond.	Mad. & Gran.	250 s			20	River 52	Fordyce & Co		E M	
	Alexander	Ed. Richards	Lond.	Jamaica —	305 s	2	3	18	River 59	Currie	A M		
	Alexander	G. Waldron	Topsh.	Genoa & Leg	70	S d		7	Spanish 56	John Gills			

The first entry in the 1764 *Register Book* is for the ship *Albemarle*. Built in Spain in 1743, she was typical of the ships of that time.

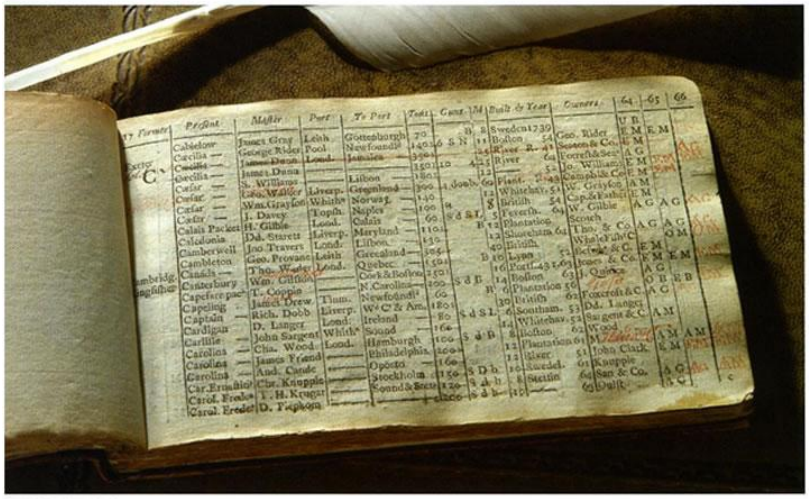
was built in Spain in 1743. She may well have been a prize from the Seven Years' War, which had ended only the year before the Register Book was published. At 300 tons, her size was also unusual for she was almost three times the size of the average sailing ship. Under the command of her master, William Tatum, equipped with 20 crew and a couple of guns, her regular route lay between London and Philadelphia, a journey which could take as long as three months, depending on the state of the sea and the direction of the prevailing winds. Today the Atlantic Conveyor, a container/roll-on roll-off cargo vessel, of a size (58,438 gross tonnage) which Tatum could never have contemplated, completes her journey from the east coast of the USA to Liverpool in 13 days - and that includes ports of call at Baltimore, Hampton Roads and Halifax in Nova Scotia. The voyage from Halifax takes just eight days.

Coffee House was located close to the River Thames and the Legal
where in the 18th century all cargo had to be landed, causing
ion on the river.

The Albemarle was just one of the growing number of British cargo ships sailing all over the globe. British trade more than doubled in value and volume between 1700 and 1750, by which time almost half of all British ships were engaged in transatlantic traffic. At the same time, as Ronald Hope has written, 'bad food, disease and brutality, and the hazards of shipwreck, fire and accident were common to most ships, particularly those which pursued ocean voyages. Falls from rigging were frequent and drunkenness was rife.' Shipping cargo from one end of the world to the other was a risky business. With vessels and their precious cargoes lost so frequently, merchants wanted to know which ships were fit to carry their goods across the oceans, as did underwriters who wished to minimise their risks. The Society for the Registry of Shipping was founded so that everyone with a commercial interest in the wooden ships sailing in and out of British ports should have the best possible information on which to base their decisions.

Organised shipping intelligence first developed in the City of London during the late seventeenth century. Owners, merchants and underwriters met in coffee houses to share information with each other. Commercial offices were almost unknown and coffee houses were beginning to rival the taverns and public houses which for so long had been the convenient place to talk business and exchange news. Coffee, recently introduced into England, had the advantage of leaving the drinker with a clear head after two or three cups. Among the most popular coffee houses was Lloyd's Coffee House, started by Edward Lloyd in Great Tower Street in 1688. Later moving to Lombard Street in the heart of the City, it became popular because successive proprietors specialised in providing the shipping fraternity with up-to-date and accurate information about shipping and the marine insurance market. In an age when newspapers were unreliable, Lloyd's gained a reputation as an information exchange. Amidst the coffee cups and the business gossip emerged three outstanding British success stories — Lloyd's List, the Corporation of Lloyd's and Lloyd's Register. One of the oldest continuously published journals in the world, Lloyd's List was started in 1734 to bring uniformity to the lists of ships and shipping movements which had been published sporadically since the 1690s.

The Corporation of Lloyd's originated with the marine insurance business discussed by underwriters over their coffee in Lloyd's Coffee House, although formal arrangements were not made until the underwriters moved to the Royal Exchange in 1774.



The 1764 *Register Book*
The first surviving *Register Book* published in 1764, contains details of 4,118 ships of which almost 2,000 were built outside the UK.

The Register Book published by the Society for the Registry of Shipping, later to become Lloyd's Register, filled in the gaps left by Lloyd's List. This gave no indication of the seaworthiness of any of the vessels it mentioned, information which was critical for merchants and underwriters assessing the risks of any one voyage. Like Lloyd's List, the Register Book was the first publication to give this information on a regular basis. Backed by a group of like-minded underwriters and merchants, the Register Book listed vessels rated, or classed, after the condition of their hulls and equipment had been surveyed. The subscriptions generated by the Register Book paid for the surveyors to carry out the work. This was the true beginning of classification and the Society for the Registry of Shipping was the first classification society. Classification was and continues to be all about quality. Put simply, it is an assessment against defined standards of the seaworthiness of a ship either under construction or already in existence.

The first subscribers paid ten guineas (worth nearly £1,500 today taking into account inflation in retail prices) for their copy of the Register Book. Surveyors were employed in 16 ports around the country. They included London, Liverpool and Hull but they also included ports like Topsham, Whitehaven and Teignmouth whose limitations had not yet been exposed by the advent of the larger steamships. Mention of Thomas Whitewood surveying the Mills Frigate prior to February 1764 appears to be the earliest reference to a surveyor employed by the Registry; George Hayley, the ship's underwriter, was also involved with the organisation.

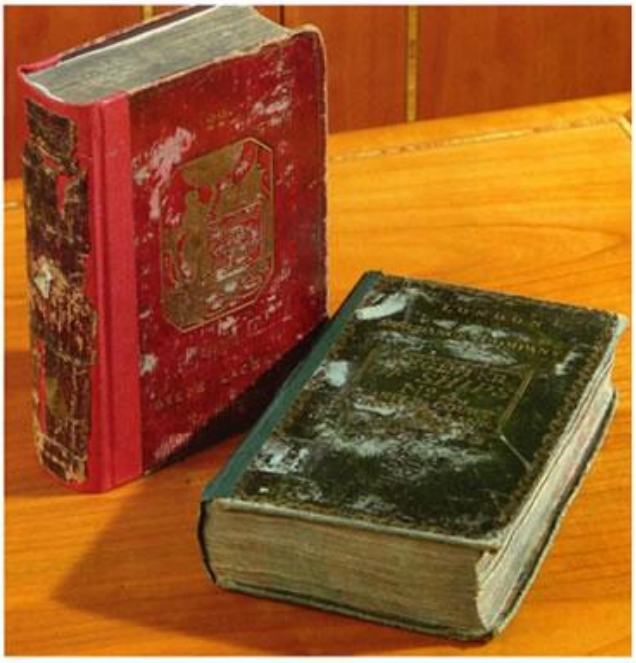
In 1797, when there were 215 subscribers, the Registry was run by an organising committee of 11 members, chaired by a prominent underwriter, John Julius Angerstein. An office was also taken, initially in Sun Court, off Cornhill, and soon afterwards in Castle Court, off Birchin Lane. The

committee clearly concluded that the existing classification system required change. Members were sceptical of the quality of construction and materials used at the shipbuilding yards growing rapidly in northern ports, which were already building 40 per cent of the country's ships.

They decided that in future age and place of construction would determine the class of a ship. In practice this meant that ships built along the Thames, where many of the most important yards were situated, remained in class for longer than ships built elsewhere. There may have been some justification for the committee's decision but it was unfair on the many sound sailing ships being built elsewhere in the country. The brush applied by the committee to paint over a limited problem was too broad and the change, so suddenly imposed after so long, enraged many subscribers, particularly since there had been no consultation. It did not help that the committee turned down a meeting with a deputation from the discontented.

The protesters may have been unhappy but they did not want to abandon the idea of the Register Book. They placed such value on the information it contained — it was, they said, 'a Book of Authority' — that instead they started their own. Forming a group which they called the Society of Merchants, Shipowners and Underwriters, based in Old Broad Street in the City, they issued the New Register Book of Shipping for the first time in 1799. From the colour of its cover it became known as the Red Book, or Shipowners' Register, in contrast with its rival, the Green Book, or the Underwriters' Register. On the Committee governing the Shipowners' Register was Robert Curling, regarded as the founder of the London General Shipowners' Society, which would later provide a chairman and secretary for Lloyd's Register. A prefatory explanation in the Red Book complained that the revised system of classification had no regard for how a ship was built nor for her subsequent history. This, it was suggested, at once did away with 'the necessity of surveying the hulls of vessels, lessening the inducement to build Ships upon principles of strength and durability, and taking away the encouragement to keep them in the best state of repair'.

By 1802 the original Register Book, the Green Book, was being referred to by underwriters in Liverpool as the Lloyd's Register Book of Shipping although this title was never adopted officially for the publication until 1829.



Dissent over the system of classification led to two registers being published, one by the Shipowners and known as the 'Red Book', the other by the Underwriters and known as the 'Green Book'. The rivalry lasted from 1799 until 1833.

At the time the country was still at war with the French. The British merchant marine profited from the opportunities and more than doubled in size, growing from 1.2 million tons in 1792 to 2.6 million tons in 1815. The two Register Books gained nothing from this expansion. Both were falling out of favour. Both books included brief and elementary rules governing classification. After only three years the Red Book listed more vessels (9,540) than the Green Book (9,145). By adopting what one historian of Lloyd's Register described as 'unsound' methods of classification, and splitting the market between them, both books were on the road to financial ruin.

For many shipowners, enough was enough. They valued the system of classification but despaired of reforming either register book. In 1820 protests were made to the Society of Ship Owners of Great Britain, later the London General Shipowners' Society. At the same time three Sunderland shipbuilders were pressing for an investigation to prove that ships being built on the

River Wear were as sound as those built anywhere else. The Society pressed both registers for change but won little response. This compounded the growing resentment against the self-appointed and unaccountable men who were running the affairs of both registers. On December 11, 1823 the Society met in London. Those in attendance heard an eloquent speech from one of their members, John Marshall, who argued for wholesale reform of the classification system. In particular he pressed for a single register, a revised classification system, based on age, condition and the quality of construction, greater control over surveyors and a reformed committee with representation beyond merchants and underwriters. The meeting unanimously backed Marshall and agreed to establish a committee to investigate and report on his proposals. So did another meeting held on January 22, 1824 when eight shipowners and eight merchants were elected to sit on the committee.

The Cooper Fleet, 1803 by Robert Willoughby
The painting depicts the whaling fleet of Samuel Cooper a Hull merchant; from left to right each vessel is shown in stern view and profile: *Thomas*, *Brothers*, *Samuel* and *North Briton*. The latter three were co-owned by John Marshall, an important facilitator in the reform of the classification system.

Then the reform campaign hit a snag. Although the Committee of Lloyd's was supposed to elect eight underwriting representatives to the committee of inquiry, many underwriters failed to see the point of changing a system which they believed had served them well. The day was saved by John Marshall's eloquent argument in favour of their participation, which proved so persuasive that only two members voted against the nominations. Discontent continued to simmer behind the scenes and some discreet arm-twisting turned out to be so effective that almost all those nominated from Lloyd's withdrew their names by the day of the election. On March 3, 1824 yet another meeting was held, when arguments for and against were rehearsed once again, 'at great length and with much warmth', in the words of one historian of Lloyd's Register. Opponents demanded a ballot on the participation of Lloyd's and manifestos were circulated. Finally, a week later, a ballot was held, a narrow majority of underwriters, by 352 votes to 327, voting in favour of Lloyd's taking part. It had been a frantic campaign. Marshall would later write of 'almost every counting-house and coffee-house in the City being visited to procure the attendance of every Subscriber who could be found', adding that 'suffice it to say, REASON TRIUMPHED!'

The Committee to Inquire into the Mode of Classing the Mercantile Marine at Lloyd's, as it was called, also elected representatives from key ports outside London, the so called 'outports', which included Liverpool, Hull, Glasgow, Newcastle and Sunderland. Taking evidence from an extensive range of witnesses, the Committee spent two years preparing its report. Issued in February 1826, it recommended the formation of a single register governed by a more representative committee, including members from the 'outports'. Surveyors should be properly paid, stationed throughout the country and recruited from men of integrity, intelligence and determination. Above all, a new and more rigorous scheme of classification should be introduced. This should

commence from the moment a new vessel was under construction, the report suggested, specifying three surveys before completion. Depending on age and condition, a vessel would be placed in one of three classes.

After all this effort and hard work, almost nothing happened. There was some anxiety over how the new register would be funded. Committee members were dismayed when a request for state funding was rejected by the Board of Trade. This, together with the deaths of two leading members of the Committee, seems to have taken the wind out of the campaign's sails.

By now, the shipping climate was very different. After the defeat of Napoleon, a long recession had set in, depressing trade and bringing a halt to the growth of the shipping industry. After 1815 the total tonnage of the British merchant marine did not increase for 20 years. This only added to the financial pressures on the two register books which had been losing money heavily before 1815. The Red Book was actually insolvent by 1829, kept going only through the financial support of committee members.

Thought of as the father of the London General Shipowners' Society, which was founded in 1811, Robert Curling was a member of the Committee of the Society of Merchants, Shipowners and Underwriters. He part-owned the Limehouse shipyard of Curling and Young, which built some notable ships including the *British Queen*, considered by many to be the finest achievement of shipbuilding in London.
Reproduced by kind permission of the London Shipowners' and River Users' Society

The General Shipowners' Society, asked for help in 1832, had nothing to give, and instead suggested that the time had come for both registers to unite. The two sides were brought together at the Merchant Seamen's Office on August 14, 1833 and agreed in principle to merge. A further meeting at the Royal Exchange on October 10, led to the formation of a United Committee of the two registers and the election of a chairman, George Palmer, and secretary, Thomas Chapman. On January 17, 1834 the United Committee of the Registry published its 'Prospectus of the Plan for the Establishment of a New Register Book of British and Foreign Shipping'.

The Prospectus provided the framework for the unique character of Lloyd's Register. The united Register would be run by a permanent Committee of 24 members, with equal numbers of owners, merchants and underwriters. Its first chairman would be David Carruthers. This new body was being set up a decade before the first legislation which made it much easier and less expensive to establish joint stock limited liability companies. For more than 140 years the General Committee, as it became, would run the new Register as an unincorporated Society whose members were personally liable for its affairs, and when change did come the essential nature of the Society remained unaltered. The Society has never had shareholders and the only right enjoyed by subscribers was their entitlement to a copy of the Register Book. Survey fees, as well as subscriptions, would fund running costs, although the Society was helped in the short term by the underwriters at Lloyd's who gave the Society £1,000 (£80,000 today. based on the retail price index).

The Society had asked for financial help from the state which had been refused but this was the first and only time such a request was made The loan from the underwriters was very soon repaid — the Society was making a clear statement that it had no wish to compromise its independence through financial ties with any external organisation.

The Prospectus also set out the basis for a new and improved system of classification, of which the General Committee would be the final judge, based on reports submitted by the Society's surveyors. The latter would be properly paid, based in all the major ports around the country and work

exclusively for the Society. The United Committee, now renamed the Provisional Committee, drew up new Rules for the Classification of Ships, appointed the first surveyors, began classifying existing ships for entry in the Register Book, made arrangements for producing it and took offices in White Lion Court. Their work, so speedily and effectively done, came to an end with the issue of the first edition. On October 21, 1834 the dissolution of the Provisional Committee marked the formal unification of the two registers as Lloyd's Register of British and Foreign Shipping.

Following "Lloyd's Register (part II)

Inséré le 07 janvier OPEN FORUM Enlevé le 07 février 2013

Langzaam naar uitstootvermindering

Een nieuwe regel met de naam EEDI stelt een maximum aan de kooldioxide-uitstoot per vervoerde ton vracht per zeemijl. Nieuwe schepen moeten vanaf 2013 aan de norm voldoen, maar schepen van Nederlandse werven halen het streefcijfer nu al met gemak. Wel wordt het lastiger om snelvarende transportschepen te bouwen: snelheid kost brandstof. @ Hans Btlltelza.~t

In de praktijk is het invoeren van EEDI vooral een snelheidsbeperking", vat David Anink van Scheepsbouw Nederland de milieumaatregel samen. Op 15 juni dit jaar werd na lange voorbereidingen de Energy Efficiency Design Index als regel aangenomen door de scheepvaartorganisatie IMO. De milieucommissie van de VN-organisatie nam een verplichte uitstootbeperking op in de voorschriften van het convenant dat de maritieme ecologie beschermt, het MEPC. De regel komt erop neer dat een schip voor iedere vervoerde ton lading per afgelegde zeemijl een vastgesteld maximum aan CO2-uitstoot mag veroorzaken. Hoe lager het indexcijfer, hoe schoner de lading wordt vervoerd.

Zo'n index kan voor ieder schip worden uitgerekend. De regel geldt voor nieuw gebouwde schepen boven de 400 GT. Als de kiel is gelegd na 1 juli 2013 of het schip wordt opgeleverd na 1juli 2015, moet het aan de milieunorm voldoen. Aangezien het gaat om kooldioxide-uitstoot per vervoerde ton lading, is het duidelijk dat de Energy Efficiency Design Index geldt voor transportschepen, niet voor werkschepen. Scheepsbouw Nederland zet zich in voor een uitzondering voor vrachtschepen in de kustvaart, die voor heel specifieke omstandigheden en vaargebieden zijn ontworpen.

STEEDS STRENGER

De maximale hoeveelheid uitstoot is per categorie schepen vastgesteld. Bulk-, tanker-, container-, algemenelading- en koelschepen moeten allemaal aan een eigen indexcijfer voldoen. In vier stappen wordt de milieueis steeds strenger. Dat begint op 1 januari 2013, als de grotere schepen van alle categorieën aan het initiële indexcijfer moeten voldoen. Voor de kleinere schepen geldt het verplichte indexcijfer dan nog niet. De volgende stap is in 2015, dan geldt de index ook voor de kleinere schepen en moeten grote schepen io procent onder de huidige norm zitten. Vanaf 2020 is dat 20 procent, om in 2025 3o procent onder de huidige emissienorm uit te komen.

"Als we de index uitrekenen voor de schepen zoals we die nu bouwen, zitten we ruim onder de grens van CO2-uitstoot per vervoerde ton per zeemijl", meldt Staffan Utzon, ingenieur in de projectontwikkeling bij Damen Bergum. "Als we blijven bouwen zoals we nu doen, halen we de toegestane waardes tot 2025. Intussen investeren we nog in terugwinning van warmte van de motoren, waardoor we energie besparen voor warm water en verwarming van de verblijven. Dat vermindert eveneens het brandstofverbruik. Ook de doorgaande investeringen in innovatieve elektrotechniek aan boord helpen mee met het verminderen van energiegebruik."

GUNSTIGE REGEL

Utzon vindt de EEDI wel een gunstige regel. "De index is gebaseerd op het type schepen dat wij bouwen. In Nederland lopen we voorop in schone scheepsbouwtechniek, dus het is geen verrassing

dat we de huidige norm ruimschoots halen. Alleen voor roro-schepen en heavyload-schepen is het wat lastiger. Voor ons is het lage indexcijfer dat we halen een mooi verkoopargument. Het geeft aan dat een reder probleemloos jaren met onze schepen kan varen en dat er dus bovendien efficiënt met brandstof wordt omgesprongen. Dat maakt zo'n reder concurrerend en winstgevend."

"Het type schepen waarin wij specialiseren vaart relatief langzaam met een enorm laadvermogen", verklaart scheepsbouwkundig ontwerper Rick Brinkman van Ferus Smit. "Daardoor gaan wij weinig last hebben van de EEDI. Op basis van wat ik er tot nu toe van gezien heb, voldoen wij al aan de progressieve normen voor jaren vooruit. Toegegeven: de energienorm geeft me als ontwerper minder vrijheid. De keuze voor een slanke romp met veel vermogen, om het schip sneller te laten varen, wordt nu bestraft. Snel varen kost nu eenmaal meer vermogen per vervoerde ton. Meer brandstof en meer uitstoot dus. Reders moeten zich nu nog eerder gaan afvragen of hun vracht echt zo heel snel van A naar B moet, anders halen ze de normen misschien niet meer. Zoeken naar rompen met minder weerstand zal niet ineens heel andere resultaten opleveren waarmee het mogelijk is toch veel vracht op hoge snelheid te vervoeren bij laag brandstofverbruik. Onderzoek naar optimale rompen is een voortdurend proces dat al decennia loopt en dat altijd door zal blijven gaan."

Brancheorganisatie Scheepsbouw Nederland heeft al in een vroeg stadium de werven gewaarschuwd dat de milieucommissie van de IMO een uitstootregel aan het voorbereiden was. "Ze houden ons proactief op de hoogte", verzekert Brinkman. "Als regelgeving zou ontstaan waar we slecht mee uit de voeten kunnen, dan proberen we daar gezamenlijk middels een gerichte lobby iets aan te doen. Zo is het bijvoorbeeld ook gegaan met de nieuwe regels voor ballast tank coating."

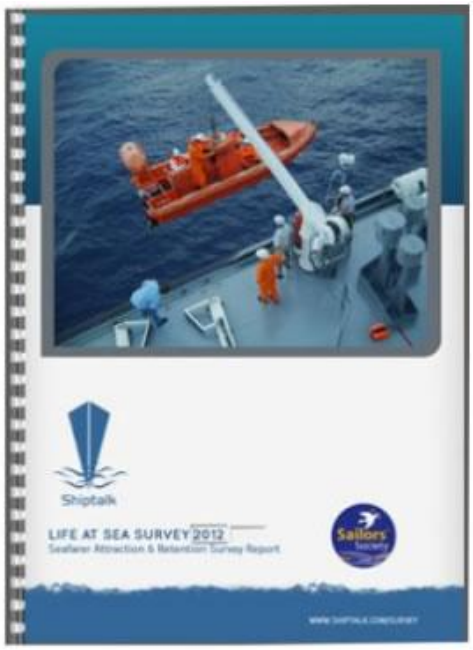
NIEUW INSTRUMENT

Klassenbureaus zoals DNV hebben een nieuw instrument om ontwerpafdelingen van werven te helpen in de beoordeling van bouwtekeningen. DNV was betrokken bij de ontwikkeling van de EEDI-normen, laat vice-president en communicatiedirecteur Per Wiggo Richardsen van Det Norske Veritas weten. Op basis van hun kennis van de normen is al een rekenmodel ontwikkeld om de uitstoot per vervoerde ton per mijl in een vroeg stadium van het ontwerp te bepalen. DNV helpt ontwerpers vervolgens met het verminderen van brandstofverbruik om de norm te halen, zodat beoogd

laadvermogen en snelheid zo veel mogelijk gehandhaafd blijven. Uiteraard zijn het de klassenbureaus die certificaten uitgeven voor schepen binnen de normen van de EEDI.

Inséré le 07 janvier Boeken Livres Enlevé le 07 février 2013

Seafarer Attraction & Retention Survey Report



Four years ago Shiptalk set about finding out what it was really like to live and work at sea – we wanted seafarers voices to be heard ashore, and we are doing it again.

Over the coming months Shiptalk is conducting its series of "Life at Sea" surveys once again. We will be asking serving seafarers their views about the issues faced by our industry today.

The first of five surveys "Personnel Attraction & Retention", which asked seafarers why they chose to pursue a career at sea, is now available to purchase. The survey looked at the issues that make people choose their jobs, the things that make them stay and the problems that make them look elsewhere. The report contains some fascinating results. The surveys in the series will include:

1. Attraction/Retention – Choosing to Work at Sea
2. Salary and Employment Benefits – Payment, Wages & Rewards
3. Qualifications and Training – Learning & Experience
4. Career Progression – Rising Through the Ranks
5. Regulatory Effect – Governments, Laws & the Seafarer

Each survey will run for approximately two - three months, so there will be plenty of time for our 40,000 seafarers to give their views. The surveys are supported by 'The Sailors Society' and we hope that we can gain a real, honest view of what it means to be a seafarer today. Once each survey has been completed the data will be analysed and reports from the information will be produced. These will include:

1. The Key Findings book, providing a concise summary of the most important survey results.
2. A comparison between the last survey in 2008 – what has changed in 4 years?
3. The Full Report, containing the summary, key findings and details of the statistics behind the survey.

Inséré le 09 janvier Logboek Nouvelles Enlevé le 09 février 2013

Panama Canal to offer better outlook for tanker markets as well

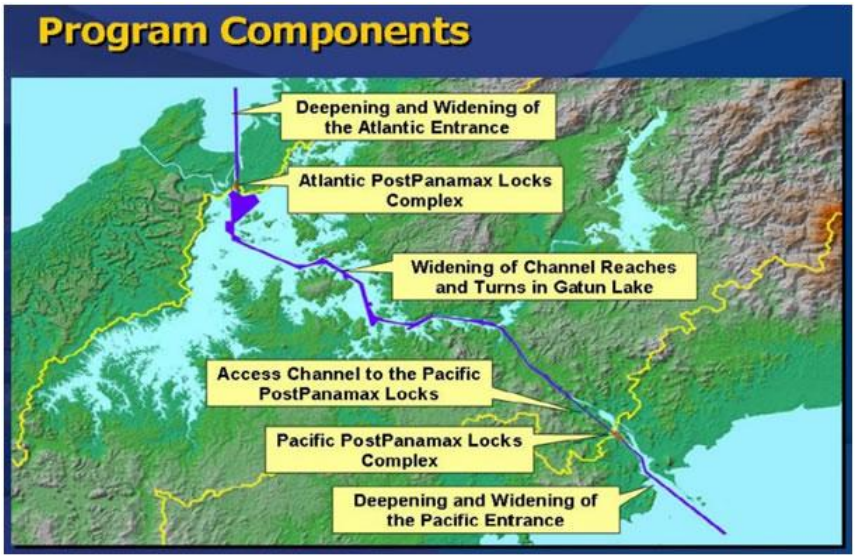
With current crude tanker period market activity remaining limited and the VLCC and Suezmax sport markets close to multi year lows, it's no wonder that many tanker owners are already looking to the future and possible parameters that will help the tanker market regain its footing. One such determining factor could very well be the expansion of the Panama Canal, due late 2014, which, as already has been debated will have a significant impact on world trade, particularly for the dry bulk and liner trades, according to researches.

Shipbroker Gibson takes a look to the impact on the tanker market, suggesting that at first glance, things look promising, with Aframax tankers appearing to be the largest size of vessel able to transit the canal while fully laden. "Suezmax tankers also in theory have the physical characteristics that would allow transit part laden. Rising Latin American demand is already resulting in increasing quantities of products moving from the US, whilst Chinese imports of crude from the Americas are also rising. The expansion could further aid this flow of trade, with products moving from the US Gulf to the Pacific South American Coast, crude from Brazil and Venezuela to the US west coast and more importantly to Asia" said Gibson in a relative report.

However, it noted that "a host of obstacles suggest that the $5.25bn expansion may not offer any profound benefits to the global tanker market. Despite the expansion possibly offering the tanker market an opportunity for more efficient trade, owners will be faced with the cost of the expansion through continuous increases in transit tolls. In the current market, such increases could in fact be a detriment to the canal if transit fees are too high. In addition there is also a question of preference. Although the canal would allow the transportation of crude oil from Venezuela, at present US west coast refiners preference appears to be for lighter, low-sulphur Russian Crude Oil from Kozmino rather than the heavier Venezuelan crude. A further obstacle is port infrastructure. Current US west coast terminal restrictions, with the exception of Los Angeles, appear not to be keeping up with canal investment, discouraging the use of larger tankers. This failure to accommodate larger tankers ultimately reduces the benefits of the expansion to the tanker market. On the other hand, the expansion is likely to have limited impact on long haul trade as fully laden Suezmax vessels will be required to offload part cargo before transiting the canal adding to the cost. This would again emphasise the economic value of maintaining the presence of VLCC cargoes in the Atlantic trade, particularly in light of rising Chinese imports from Latin America (e.g.Venezuela). Despite offering a number of opportunities, the related obstacles faced by the expansion of the Panama Canal fail to indicate any profound benefit or detriment on the current tanker market. While other shipping sectors have introduced 'Post Panamax' designs to capitalise on the canal improvements,

there appears to be no significant benefits to imply any changes to the present trading patterns" concluded Gibson in its analysis.

Meanwhile, in its press release detailing its first half results, Crude Carriers mentioned that the VLCC and Suezmax spot markets remained close to multi year lows, as increased demand for crude oil imports in the East was offset by oversupply of tonnage, higher bunker prices and weak US crude oil imports in the first half of 2011. "During the second quarter 2011, the TD3 (Middle East - Japan) and the TD5 (West Africa - US East Coast) indices average TCE earnings were $9,400 and $9,646 per day, respectively, compared to $13,499 and $12,173 per day, respectively, earned by the Company's VLCC and Suezmax fleets. Activity in the crude tanker period market remains limited due to the poor performance of the spot market.



On a positive note, orderbook slippage remains at high levels, as approximately 35% of the expected VLCC and Suezmax newbuildings have not been delivered in the first half of 2011" said the listed company.

In an earlier report this week, Bloomberg had said that demolitions of supertankers, which carry about 20 percent of the world's oil, are slowing as ship owners accept unprofitable rates rather than write off assets, creating the industry's biggest glut in 29 years. "Scrapping vessels, each the size of the Chrysler Building, will drop 19 percent to 2.8 million deadweight tons of carrying capacity this year, according to London-based Clarkson Plc, the world's largest shipbroker. The fleet will expand 7.5 percent to 176.7 million deadweight tons, the most since 1982, as demand for seaborne crude advances 2.8 percent, the broker estimates.

Owners are effectively paying clients $1,037 a day to charter vessels on the industry's benchmark route in the single- voyage market, the first negative rate since at least 2008" said the report.

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MEPC 62:Energy Efficiency Design Index adopted

IMO Steps aimed at reducing shipping's greenhouse gas emissions have enjoyed high priority in the International Maritime Organization (IMO) in recent years, often leading to controversial discussions. After much debate, it was decided at the 62nd session of IMO's Marine Environment Protection Committee (MEPC) to amend Annex VI of the MARPOL Convention to include the Energy Efficiency Design Index (EEDI) and the Ship Energy Efficiency Management Plan (SEEMP). In the following, the effects that these new instruments will have on existing and new ships are explained.

Climate change caused by green-house gas (GHG) emissions is seen as one of the greatest challenges of our time. According to scientific findings recognised thus far, the concentration of CO2 in the atmosphere must be stabilised at a value between 450 ppm and 550 ppm (CO2 equivalent) to avert serious consequences for humankind. The goal is to limit average global warming to 2 ° C. The current CO2 equivalence level is approximately 450 ppm with a rise of 2 ppm per year currently

observed. The Stern Review [1] comes to the following conclusion: "There is still time to avoid the worst impacts of climate change, if we take strong action now." The fourth systematic worldwide evaluation of scientific publications by the IPCC (Intergovernmental Panel on Climate Change) has also documented this challenge [2]. Shipping is by far the most energy-efficient mode of transport and exhibits the lowest specific CO2 emissions per tonne-kilometre. Approximately 90% of the global exchange of commodities takes place by sea. The share of the shipping sector in anthropogenic CO2 emissions amounts to about 3%. Nevertheless, this sector has also been called upon to help reduce greenhouse gases.

IMO mandate to reduce greenhouse gas emissions

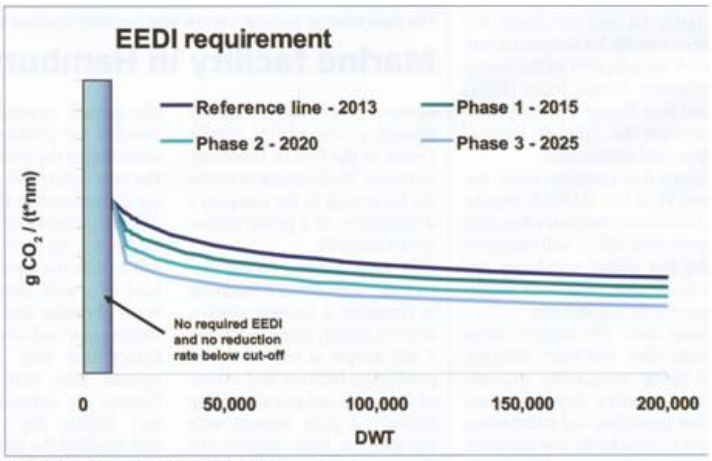

Figure 1: EEDI reduction scheme
(value of the reference line and cut-off depending on ship type)

In 2003, the IMO was mandated by the UN Framework Convention on Climate Change (UNFCCC) to develop policies and practices aimed at mitigating greenhouse gas emissions from ships. This initiative was adopted as an IMO resolution outlining the development of technical, operational and market-based instruments [3]. The first outcome of the activities was the Operational CO2 Index [4], which was later renamed the Energy Efficiency Operational Indicator (EEOI). The EEOI is a voluntary instrument for tracking a ship's transport efficiency during its operation. Updated guidelines are available in the form of an MEPC circular [5]. The EEOI can be used as a supplement to environmental management systems, such as the SEEMP [6].

In addition, the MEPC is currently discussing the introduction of market-based instruments to reduce GHG emissions. This is generally understood as comprising measures that assign a monetary value to CO2 emissions and thus create an incentive for prevention. Such measures may include an emission rights trading scheme or a compensation fund that adds a CO2 tax to the fuel price.

Under the UNFCCC regime of the Kyoto Protocol, a distinction is made between industrial nations (called "Annex I countries") and emerging or developing countries ("non-Annex I countries") with regard to their emission reduction targets. This flexibility is intended to give developing countries a degree of support in elevating their level of prosperity. This mechanism is described by the term "common but differentiated responsibilities" (CBDR). At the IMO, however, which is likewise a body reporting directly to the UN General Assembly, the same rules and regulations apply to all ships irrespective of the flag - a conflicting approach known as the "no more favourable treatment principle" (NMFT). This discrepancy accounts for the slow progress of all IMO discussions on rapid and targeted implementation of CO2 reduction measures because many developing countries question the IMO mandate to regulate ships' CO2 emissions or demand application of the CBDR principle. Discussions at the IMO have therefore focused on the EEDI, an area where the IMO - as the competent technical organisation for newbuilding standards - is not obstructed by emerging and developing countries in achieving robust implementation.

To resolve the debate about the term CO2, the CO2 Design Index was renamed the Energy Efficiency Design Index at the request of the Chinese delegation.

The EEDI is an index evaluating a ship's potential transport efficiency. Theoretical CO2 emissions at 75% of main engine power are expressed in relation to the corresponding ship speed at a defined draft.

Adoption of EEDI and SEEMP at MEPC 62

At long last, the IMO included the EEDI and SEEMP as an amendment to the MARPOL Convention, Annex VI, in July at the 62nd session of the MEPC. With this decision, the EEDI, as a newbuilding standard, and the SEEMP, as an operational measure, will become mandatory for all ships beginning on January 1st 2013. The SEEMP applies to all ships in service and must be carried on board for the first renewal or intermediate survey after the aforementioned date. For new ships of 400gí and above, the keel of which is laid after January 1st 2013, it will be necessary to calculate and verify an EEDI (the "attained EEDI"). Initially, the EEDI will be compulsory for seven ship types. It currently applies to new bulk carriers, gas tankers, tankers, container ships, general cargo ships, refrigerated cargo carriers and combination tank/bulk carriers. For other ship types, work is still progressing at the IMO on ways to incorporate them into the EEDI regime.

For new ships above a defined size, there is not only the requirement that the EEDI be calculated, but also that the value obtained be no greater than a specified limit (the "required EEDI").

The area framed by a light-blue line in Figure 1 indicates the zone demarcated by this "cut-off limit." Below this size ceiling, which is individually assigned to ship types, solely a calculation is required - not the observance of a particular EEDI limit value. Only above this ceiling is a simultaneous requirement for compliance with an EEDI maximum, which is a function of ship size.

Required EEDI = a • DWT-c

The IMO will also be using the reference line for more stringent future requirements, i.e. the admissible EEDI maximum will be decreased at five-year intervals. This approach is comparable to that of a statutory emission scheme. Four different phases are envisaged. Phase 0 is effectively the introductory phase of the EEDI beginning in 2013. This first reference line, or baseline, was determined by means of a simplified EEDI calculation method from existing ship data gathered over the last ten years. The reference line is determined as the regression curve of the individual EEDI ship values of the past years.

For the future five-year phases starting in 2015, the regime proposes to reduce the required maximum EEDI values by 10% in each case. The proposed reduction factors will be subject to review at the beginning of Phase 1 and in the middle of Phase 2.

There is the possibility of adapting the reduction requirements to account for technical developments.

The aforementioned conflict over consideration of the CBDR principle for the EEDI had been expected to flare up' at MEPC 62. Moreover, a large number of "non-Annex 1" states demanded more time before introduction of the EEDI. The demand was addressed by Singapore's proposal allowing these states to dispense with monitoring existence of EEDI certificates, even after general introduction of the EEDI regime in 2013, during port state controls in their own territorial waters (the "waiver clause") . The introduction of port state control of the EEDI may now, however, be delayed by flag states for a maximum of four years if they are not in a position to implement the EEDI from a technical standpoint.

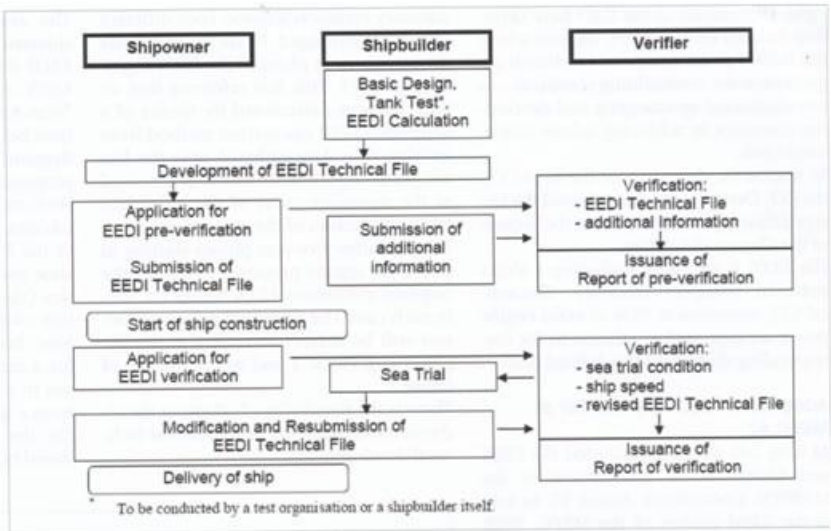

Figure 2: Basic EEDI verification process according to [9]

On the other hand, flag states are allowed by UNCLOS, Article 25, to deny passage to new ships not carrying an EEDI from 2013 onwards. Industrialised countries will presumably make use of this right.

This means, for example in the case of China (an opponent of the EEDI at IMO/ MEPC), that new ships

sailing under its flag in Chinese waters or ports will not be monitored for a valid EEDI certificate during the first four years. However, ships built in China after 2013 (date of keel-laying) will probably have to present an EEDI certificate in most of the port states they call at regardless of the flag under which they sail. Because of this, the EEDI is expected to be accepted and applied widely from the start - and not only by the signatories to MARPOL Annex VI.

A number of technical issues need to be clarified before the EEDI regime can be introduced. In view of the tight time frame, the IMO has drawn up an ambitious work plan. Besides various technical details (e.g. guideline development), it includes schedule targets for incorporation of ship types that have not been listed to date. Solutions, e.g. for RoRo ships or diesel-electric drives, are to be developed by mid-2013 (for MEPC 65) at the latest.

Certification of the EEDI The process for calculating the EEDI covers the entire ship design. The IMO has developed a two-stage process for this (Figure 2) in which preliminary verification of the EEDI must take place at the design stage. Initially, the ship in question will be checked to see whether it meets the requirements of the corresponding reference line. Final calculation and verification of the EEDI can only be performed after the ship's sea trials since shaft power and ship speed are determined at full scale. If sea trials cannot be carried out with the fully loaded ship, the results for the design stage are used (speed-power curve from towing tank) to estimate the speed referred to in the EEDI guideline. Calculation and verification of the EEDI are described in two IMO guidelines [8], [9]. The basic document to be used for the verification and certification is the EEDI Technical File. This document contains all the parameters of relevance to the EEDI. The EEDI Technical File should always be included as an appendix to the EEDI certificate. In this respect, the documentation is analogous to the Engine International Air Pollution Prevention (EIAPP) certificate and the appended NOx Technical File. The verification and certification of the EEDI can be performed by a recognised organisation ("verifier") . For this, the EEDI Technical File must be submitted together with the NOx Technical File, trim and stability booklet, inclining test and sea trial report for reasons of verification. Additional information is also required. If such information is confidential, contractual provisions protect the rights of intellectual property and the documents submitted are returned after the verification process has been concluded. The additional information may include the following: description of the tank test, report on calculation of model speed, and lines of the model ship. When all the necessary data have been received and examined, the EEDI can be calculated for the corresponding ship and an EEDI certificate may be issued.

Conclusions

With the adoption of the EEDI and SEEMP at MEPC 62, the IMO has demonstrated its ability to pass mandatory GHG-reduction steps for the entire shipping sector. With regard to the ambitious IMO work plan, a number of challenges must still be faced on the way to implementation of the EEDI regime. To best take into account the interests of the shipping sector in forthcoming discussions, intensive teamwork is needed with participation by all maritime stakeholders, such as shipowners, yards, model test basins, suppliers and classification societies. The first EEDI certifications - on a voluntary basis, in accordance with IMO guidelines -have already been conducted by Germanischer Lloyd (GL). The certified EEDI values of these ships consistently remained below the currently valid limits (i.e. reference line) . At an early stage, GL became involved with a wide spectrum of topics relating to the enhancement of energy efficiency, and so is well positioned to give its customers the advice and services they need to meet the requirements.

The EEDI's potential for wide-ranging impact is illustrated by an announcement from Singapore [10]. As part of its Green Ship Programme, the Maritime Port Authority of Singapore announced that new Singapore-flagged ships would enjoy a 50% reduction of the initial registration fees and a 20% rebate on the annual tonnage tax if the certified EEDI value of the vessel complied with prescribed Phase 1 limits. A special feature of this incentive programme is that it went into effect on July 1st 2011 - considerably before mandatory introduction of the EEDI by IMO.

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Lloyd’s Register (part II)

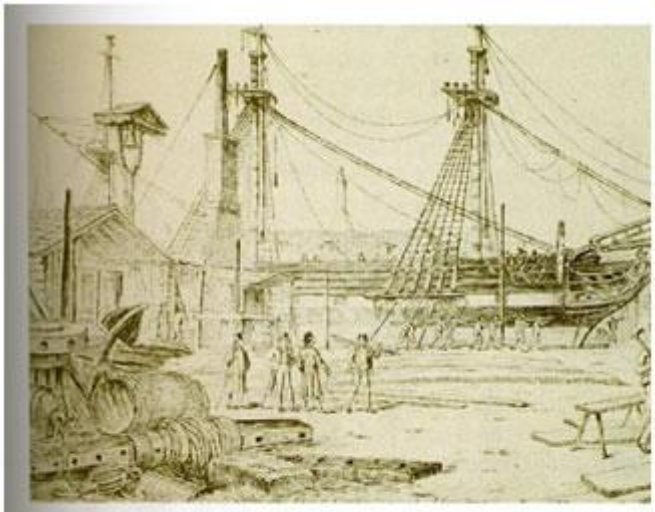
1834 - 1870

Of the 2.3 million tons in the British merchant fleet in 1840, steam accounted for just 87,000 tons. While the fleet doubled in size by 1860, the volume of steam tonnage rose more than five times, reaching 454,000 tons. By 1870 steam made up 1.1 million tons of the fleet's total tonnage of 5.7 million tons. The tonnage of sailing vessels launched in 1860 and 1870 changed scarcely at all, at some 126,000 tons, while the tonnage of steamers launched in 1860 rose from 68,000 tons to 268,000 tons a decade later.

Mary Bibby by Joseph Heard
The first ship owned by Bibby Line of Liverpool, *Mary Bibby* epitomises the ships of the early 19th century that were under the survey of Lloyd's Register and appeared in the *Register Book*.
Reproduced by kind permission of the Bibby Line Group

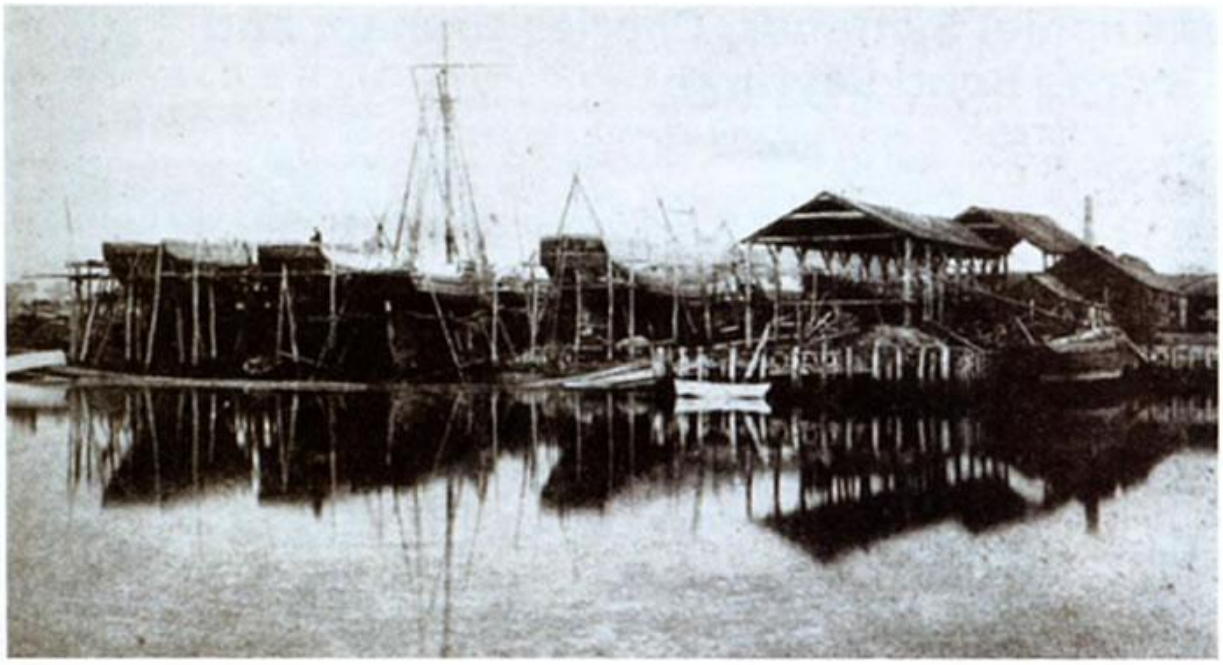
The ships of the Liverpool-based Bibby Line embodied the changes which were taking place In the 1830s and 1840s the largest vessel acquired by the Line was the 380 ton wooden sailing ship Cestrian built in the Isle of Man in 1833. The Line acquired its last new wooden sailing ship, the Pizarro (416 tons), classed by Lloyd's Register, in 1853. Three years earlier the Line had bought its first iron screw steamer, the Rattler, of only 276 tons; 20 years later, the Line was taking delivery of three iron screw steamers from the Belfast yard of Harland and Wolff, each of 3,052 tons.

Innovation came at a price as life at sea became even more dangerous. The number of seamen lost each year rose from an average of 763 in 1816-18 to 894 in 1830-35. As shipping disasters multiplied, so official concern grew about the safety of life at sea.



Drawn by Harry Cornish this 1834 scene depicting Cox and Curling's shipyard at Limehouse in the East End of London is typical of shipbuilding and repair yards of the time. It was the same shipyard that Robert Curling once part-owned.

All this was central to the development of Lloyd's Register. Classification, a choice made entirely at the discretion of the shipbuilder or owner, was a mark of quality assurance. At a time when sending cargoes or passengers by sea appeared to be increasingly dangerous, a vessel classed 'Al' at Lloyd's Register gave comfort to merchants and passengers and reassurance to underwriters and owners. More and more newly built vessels were built under survey to the Society. Charles Graham, Secretary from 1836 until 1855, cited the growing number of certificates issued, which rose from 271 in 1837 to 1,206 in 1842, as evidence of the growing popularity of classification. It was becoming the norm, rather than the exception.



Bayley's Halifax shipyard, Ipswich, c. 1850
George Bayley, Lloyd's Register's first Principal Surveyor was a member of a shipbuilding family from Ipswich who built many merchant and naval vessels. The largest was the East Indiaman *Orwell* launched from their Halifax yard on the River Orwell on August 28, 1817.

The rising demand for the Society's services placed it under considerable pressure. As the author of the Society's first history wrote in 1884, 'the transition from the old, loose practice to the new systematic course of procedure was naturally attended with no small difficulties. Shipowners and shipbuilders, who had hitherto been left to follow their own inclinations in many cases, did not take

kindly to the altered circumstances, and, as a result, the Society gained a notoriety in some quarters for being arbitrary and too strict in its requirements'.

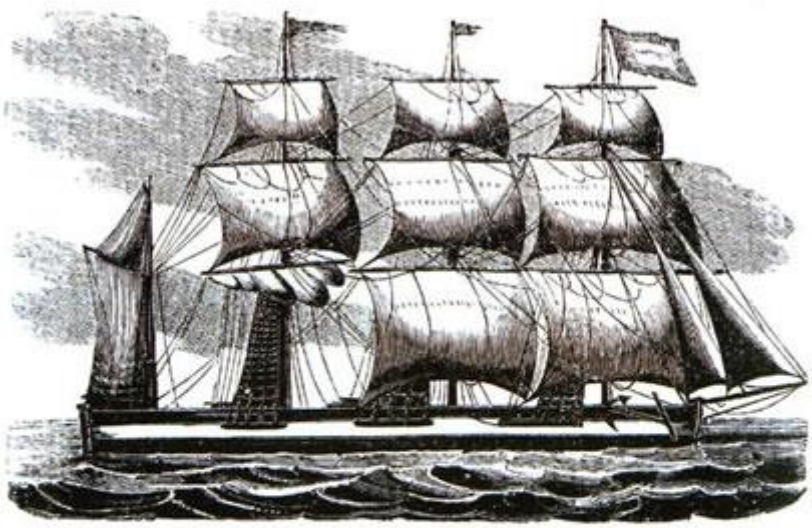
There was some concern about whether or not the Society would survive as subscribers fell and funds shrank. Towards the end of 1836 a dishonest clerk swindled the Society out of £700. The clerk fled and the Secretary, Nathaniel Symonds, although he had provided security to cover most of the loss, felt obliged to resign. The Chairman, Thomas Chapman, made a temporary loan of £300 to pay salaries and part of the Society's investments were sold to cover this hiccough in the Society's cashflow. In fact, this seems to have been the only financial embarrassment endured by the Society, which steadily built up its reserves to more than £20,000 (£1.3m today) by 1854.

Cartoon of Bayley by Lance
A man of high principles, when George Bayley was offered a bribe he threw his tempter overboard.

Lloyd's Register resisted pressure from shipbuilders and shipowners in the face of changing technology for several reasons. Firstly, the Society's surveyors quickly earned a reputation for competence and integrity. From the outset those who ran Lloyd's Register believed the technical expertise of its staff was paramount. Advertisements placed by the Society were aimed at shipwrights 'possessing the highest attainments of their profession' and at others, usually sea captains, 'well informed in the construction and quality of shipping'. The former, called shipwright surveyors, were employed to survey vessels under construction, the latter, nautical surveyors, inspected vessels already in service. The Society also paid its surveyors properly so they would not be tempted to misrepresent the condition of ships under their inspection in exchange for bribes. George Bayley, the first Principal Surveyor, earned £500 a year, placing him on a par with doctors, lawyers and the most senior clerks. The 13 surveyors working exclusively for Lloyd's Register in the busiest ports around the country earned between £150 and f200 a year. By comparison, the wage of an agricultural labourer around this time was less than f30 a year and a semi-skilled worker in the cities was earning about £50 a year, while the salary of a schoolmaster might range between £100 and £200 and that of a reasonably senior clerk would be around f150.

There was a clear distinction between exclusive and non-exclusive surveyors. Exclusive surveyors were salaried officers who undertook all surveys and other work on behalf of Lloyd's Register, including surveys of ships under construction. Later on, when plan approval was delegated by the General Committee in certain parts of the world, it was only exclusive surveyors who were permitted to carry this out. Non-exclusive surveyors carried out all surveys except those for vessels under construction. They were non-exclusive because they were allowed to undertake work for others, provided this had the consent of the General Committee. Non-exclusive surveyors were paid a smaller salary plus a percentage of fees from the surveys they performed, reflecting their appointment for less busy ports. Their numbers gradually declined as the Society appointed more exclusive surveyors to cope with a growing volume of work.

From the outset the Society also banned its exclusive surveyors from having an interest in any of the ships under their survey or expressing any view on the state of the vessel to the builder or owner. They were accountable only to the General Committee or the Sub-Committee for Classification, which dealt with decisions on classification from 1835. They were also regularly moved from port to port to prevent them becoming the poodle of the local shipbuilders. The Society imposed less onerous conditions upon the 50 non-exclusive surveyors in smaller ports over whom it had less control. But they too were held to account, along with their fully employed colleagues, initially through visits from the Principal Surveyor and then from the Visitation Committee, formed in 1840. Made up of members of the General Committee, including the Chairman, as well as the Principal Surveyor, Secretary and Head Messenger, this visited a different number of outports every year. They watched the surveyors at work, spoke with builders and owners, inspected records and accounts and discussed procedures. In 1851, for instance, the Committee visited Newcastle, Sunderland, Leith, Glasgow, Greenock, Whitehaven, Harrington, Workington, Maryport and Liverpool.



Columbus
An acute shortage of timber in the UK led to timber imports from the Baltic and North America for shipbuilding. In 1824 two enormous ships were launched at Quebec: *Columbus* and *Baron of Renfrew*. They measured 3,690 and 5,294 tons respectively, at a time when the average size was 300 tons. Joseph Horatio Ritchie, who would become Principal Surveyor from 1852, worked at the shipyard where they were built. Once completed the ships were filled with timber, rudimentary masts and rigging constructed and then sailed across the Atlantic on a single voyage. On reaching the UK they were dismantled, the cargo and hull being sold for shipbuilding.
Reproduced by kind permission of the SS Great Britain Trust, David MacGregor Collection

The *Liverpool Underwriters' Registry for Iron Vessels* was first published in 1862 and continued until 1885 when it amalgamated with Lloyd's Register. Surveyors taken on from the Underwriters' Registry included Chas. Jordan, who at the time he retired was the Society's last sailing ship expert.

A reputation for objectivity and impartiality was crucial in reaching decisions so important for the safety of those who would eventually take the ship to sea. In 1835, as the dangers of overloading vessels became more and more apparent, this led the Society to stipulate that the vessels it classed should have freeboard, that is, the distance from the waterline to the upper deck level of the ship, of three inches for every foot depth of hold. The so called 'Lloyd's Rule' was being used more than half a century before load lines became compulsory on all British ships.

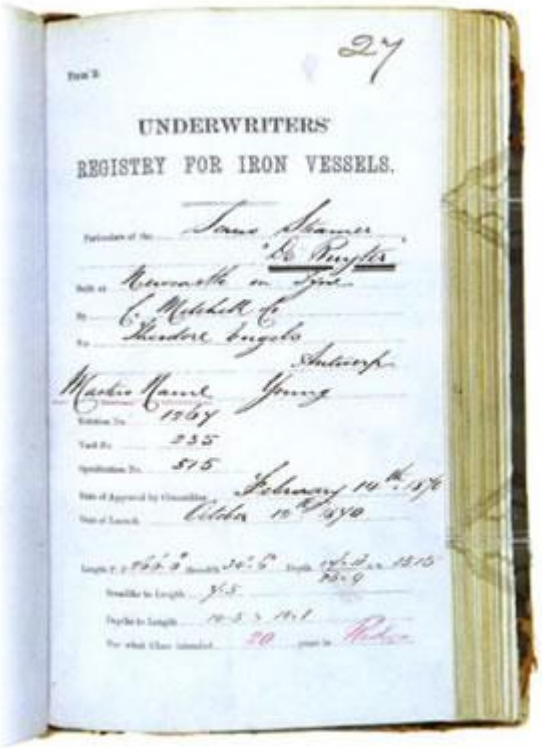
The opinions of the Register's surveyors and officers were sought during this period by several official enquiries, including the Parliamentary investigations into steam-vessel accidents in 1839 and shipwrecks in 1843. An earlier House of Commons committee had already asserted in 1836 that the classification system would 'effect a great improvement in the general character of the ships of the United Kingdom'. The General Shipowners' Society concluded in 1840 that the work of the Register

was 'impartially and beneficially performed', while the Shipping & Mercantile Gazette, once hostile, reported that the General Committee had 'exercised their functions with honour, firmness and

Canada Dock, Liverpool
Liverpool was a major shipowning and shipbuilding port. Representatives of these industries continually pressed Lloyd's Register for representation from their port.
Reproduced by kind permission of National Museums Liverpool

impartiality'.

The growth of British shipping and in particular the expansion of ports outside London created more and more pressure for wider representation on the General Committee. Although the Provisional Committee had included representatives from the outports, none had been appointed to the General Committee. Occasionally nominees of the Shipowners' Society were proposed by other ports but this made no difference to the composition of the Committee, which was entirely made up of members based in London. The Committee betrayed some reluctance to share its authority, spurning the request for a local committee from shipowners and underwriters from Liverpool, the country's second port. As a result a rival register was formed in Liverpool in 1835, which lasted for ten years before an accommodation was reached. A branch committee was established in Liverpool in 1845 and three of its members were given seats on the General Committee, the first from outside London.



27

UNDERWRITERS'
REGISTRY FOR IRON VESSELS.

Liverpool Underwriters' Registry for Iron Vessels survey book for the North East coast showing the survey report for the screw steamer *De Ruyter*, owned by Theodore Engels and registered at Antwerp.

The Society was faced throughout this period by the challenge of responding to enormous change within shipping. The approach it took was to devise rules governing innovations in shipping only after accumulating knowledge based on practical experience. Rules covering steamships were

published in 1835 but throughout this period the Society refused to consider engines and machinery as part of the classification process.

Although the first iron ships appeared in the Register Book in 1837, classed as 'Experimental', it was not until 1844 that reference to them appeared in the Society's rules and the first Rules for Iron Ships were not issued until 1855. For some this was too cautious an approach and Liverpool once more became the focus of protest. An alternative register, the Liverpool Underwriters' Registry for Iron Vessels, was produced for the first time in 1862 by the Liverpool Underwriters' Association and remained in existence until it amalgamated with Lloyd's Register in 1885. In response, the Society did acquiesce in the request from a number of other Liverpool shipowners and underwriters made in 1863 for even more Committee members. At the same time, in response to similar demands from elsewhere, representatives were also added from Bristol, Hull and the ports along the Rivers Tyne, Wear and Clyde.

Quebec, 1850s
Captain Thomas Menzies, a shipbuilder from Leith, became the first surveyor to be sent overseas after the reconstitution. British North America was important during the wooden shipbuilding era, the vast forests providing timber both for the shipbuilding industry and for export.
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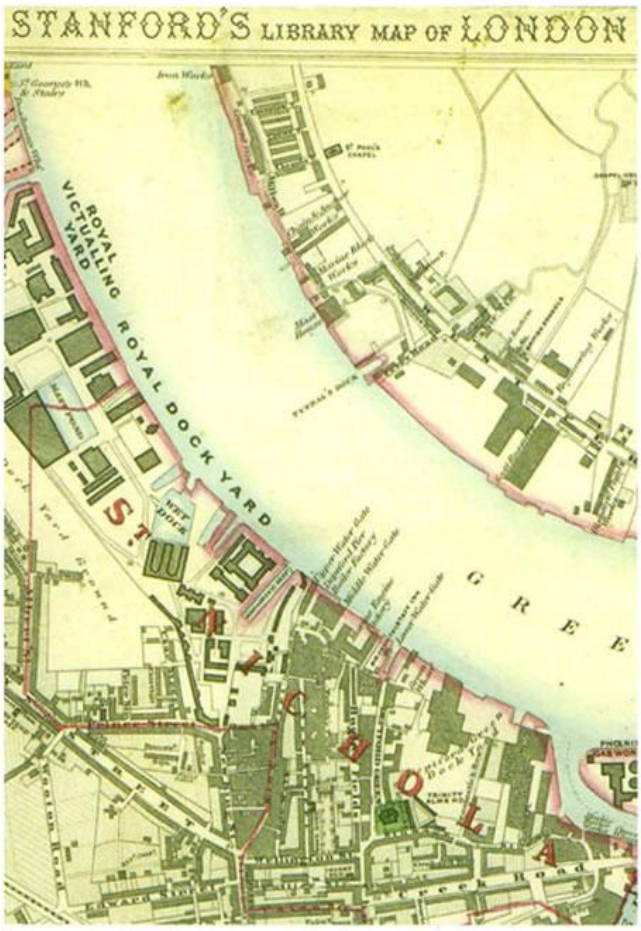
By then the Society had adopted rules, issued in 1862, requiring all anchors and cables for vessels classed by Lloyd's Register to be publicly tested and certified. This followed a Parliamentary investigation in 1860 which had condemned the existing method of testing chains and cables. The Society, which had been testing anchors and chain cables since 1808, had anticipated such changes, for surveyors since 1846 had been inspecting anchors and cables to make sure they were stamped as a sign they had been tested. In the 1860s the Society opened its own Proving House in Poplar but this lasted only until 1873, after competition with other proving houses made it unprofitable. In any case, since 1863 the Society had also insisted that wherever such testing was conducted, it would be recognised only if had been supervised by a Lloyd's Register surveyor.

This experience of inspection as a means of assuring quality assisted the Society when it first became involved in the assessment of steel. In 1863 the General Committee refused to approve the building of a steel ship when the builder failed to convince them that the metal was superior to iron. Cautious but open-minded, the Society was more than willing three years later to send a team of surveyors to inspect the quality of steel being made for shipbuilding at the Barrow Haematite Steel Company which ultimately led to the first elementary Rules for Steel Ships in 1868.



The Society opened its own Proving House in 1862 at Poplar, on the north bank of the River Thames.

Since 1834 one of the Society's priorities had been to build up a network of staff at the main ports throughout the UK. As a result, it had turned down several pleas for the appointment of surveyors overseas. In 1851 the Society relented, agreeing to a request from a group of shipowners in St John, New Brunswick, where ships were still being built for the UK, to fund the appointment of a surveyor for five years. The first, Thomas Menzies, was sent out in 1852, followed by a second, John Tucker, in 1853 and shortly afterwards by two assistants.

Menzies and Tucker were the first exclusive surveyors appointed overseas. Menzies was the son of Leith shipbuilder Robert Menzies who had built the paddle steamer Sirius in 1837 which in the following year became the first vessel to cross the Atlantic from Europe to the United States under continuous steam power. In the 1850s and 1860s the Society appointed several surveyors in Belgium and Holland as well as one in Shanghai, where the cost was shared with a marine insurance company.

By and large, under the Chairmanship of Thomas Chapman, the Society prospered financially for most of this period. Annual surpluses helped to build up significant reserves, the interest on which shielded the organisation against losses incurred at the bottom of the shipping cycle or when the Proving House was losing money in the 1860s. More importantly, Lloyd's Register had also succeeded in establishing its reputation in the world's leading shipping and shipbuilding nation. From 1870 onwards, it would export this with equal success around the world.

Following soon "Lloyd's Register (part III)"

Inséré le 15 janvier Nouvelles Logboek Enlevé le 15 février 2013

Costa Concordia wreck an accident, not crime, captain says

The fifth estate reports 'black box' evidence appears to support captain's story

The Italian cruise ship **Costa Concordia's** captain suggests he has been unfairly blamed for both the shipwreck that killed 32 people and for appearing to abandon ship prematurely, CBC's the fifth estate reports in an exclusive documentary airing Friday. In an interview, **Capt. Francesco Schettino** describes to the fifth estate's Bob McKeown how he believes that the ship wasn't on the course he had ordered and how he believes a helmsman's brief error contributed to the problem. As well, Schettino says that evidence from the ship's recovered "black box" appears to support his contention. Watch the fifth estate's documentary about **Costa Concordia** this Friday

"It's not a crime, it's an accident," he says. "And there is a difference between crime and accident. In this case, it's being treated like a crime, and I don't understand why." Schettino had ordered a sail-past "salute" to the island of Giglio on the evening of Jan. 13, travelling parallel to the shore at a

distance of about half a nautical mile. When he arrived on the bridge to command the salute, however, he said the ship wasn't on the course he had ordered. As he took control and turned the ship, he saw foam and realized he was in shallow water. The Costa Concordia had in fact been heading at full speed toward rocks.

As the black box indicates, Schettino says, he ordered a turn to port, to the left, but it appears the opposite happened. Shortly after, the aft section of the ship struck rocks in the shallow water, and a 35-metre gash was torn in the hull below the water.

Schettino told the fifth estate that he delayed ordering the passengers to abandon ship because he didn't want to create panic. He says that there was also the expectation that they would be safer closer to shore where they could be rescued. The moment that you do that, you do that only when you are sure that it's more dangerous to keep them on board," he says. With the ship still in motion toward deeper water, it would have been dangerous to man the lifeboats, the captain says.

"It's only one passenger that starts to give the example to jump overboard, and you can provoke a kind of hysteria. Mass hysteria. And that would have been the worst thing to happen."

Removal of passengers

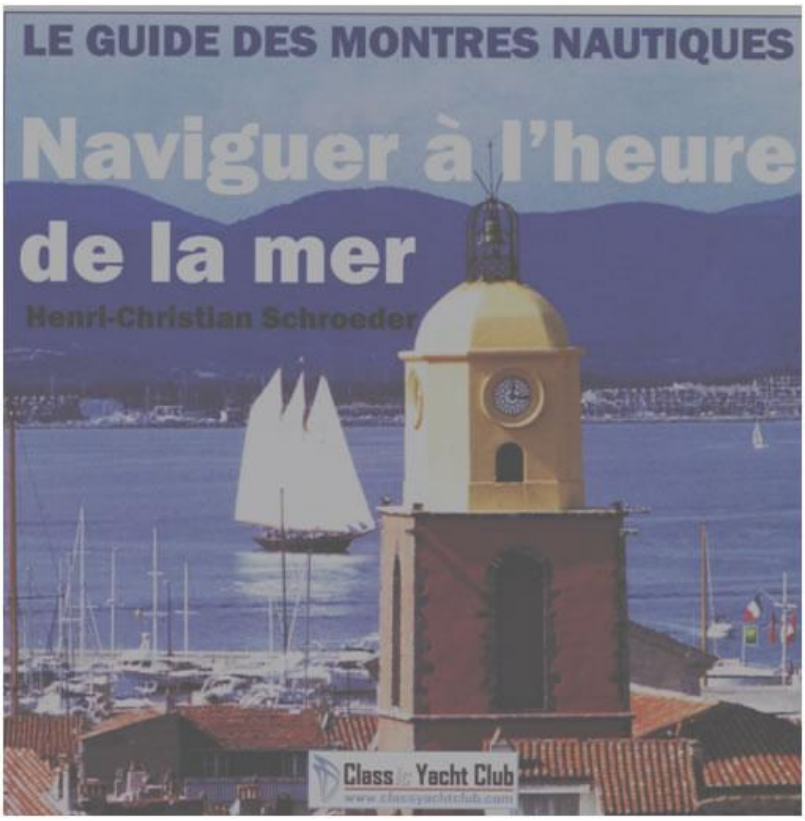
In the end, the **Costa Concordia**, now without power, drifted into shallower water against rocks near Giglio and began to tilt severely to the right. The salvage of the ship continues, as do numerous lawsuits against the owners. Charges of negligent manslaughter against Schettino are pending, as a judge in Italy decides whether to proceed. Schettino was accused after the wreck of trying to abandon ship before the passengers were off. However, he says that while he was co-ordinating the evacuation of the ship, he accidentally slid off the side of the listing ship and onto a lifeboat.

When the famous conversation with Italian Coast Guard commander Gregorio de Falco took place, in which the captain is upbraided and ordered back on to the ship, Schettino says the passengers on the submerged side of the ship were already off. The problem was to get to those on the high side, on the left. Where Schettino and his crewmembers were, they were at risk of being crushed by the still-listing ship, he said.

"We had no other option, because we were on the starboard side, the sinking side of the ship," he tells McKeown. "We were forced to go: otherwise we would have died." To be sure, suspicions about Schettino's actions that night remain, and the fifth estate talked with survivors such as Laurence and Andrea Davis, who live in Calgary.

"I saw too many bad things happen to panicking people," Laurence Davis says. "They were getting hurt, injured, people falling between lifeboats." With lifeboats either full or gone, the Davises were faced with the decision whether or not to jump into the cold water. "During all these emotions, I never did think we were going to die until I was standing on that deck and the water started coming over my feet," Davis says. "That was the first time I said to myself, this is the end. And this is why I looked at Andrea and said, well, sink or swim." Eventually — they don't remember how long it took — they reached the rocks and safety. As for Schettino being blamed in Italy and elsewhere, the captain seems at a loss to respond. "I cannot feel responsible," he says." Of course I feel sad for that, but it's something that I can deal with, because I know that it's not the truth. And I know that one day, the people — that this is the beginning of this. We will start to make clear on the dynamic, all the circumstances that led to happening to this accident." **Source : CBC News**

Inséré le 17 janvier Boeken Books Enlevé le 17 février 2013



L'auteur nous livre une revue des différentes marques de montre thématique nautique, offrant à l'armateur, au capitaine ou à l'équipier comme aux passionnés de yachting et aux collectionneurs de montres, un choix élargi de modèles appropriés à tous les moments et lieux propres .à l'Art de Vivre la mer bord d'une embarcation, à la manoeuvre ou dans le carré, dans les salons de son yacht-club préféré ou lors d'une réception mondaine.

A l'occasion du Salon Nautique International de Paris (NAUTIC) en décembre 2012, le CLASSIC YACHT CLUB, club-house digital du yachting classique, publie NAVIGUER A L'HEURE DE LA MER, le ter GUIDE DES MONTRES NAUTIQUES.

Son auteur, Henri-Christian Schroeder, fait un point très complet de la production actuelle, et moins récente, de montres à thématique nautique, en en proposant un classement très utile par catégorie, agrémenté de nombreuses photographies :

- les montres mécaniques avec complications nautiques,
- les montres mécaniques à connotations nautiques, dites de yacht-club,
- les montres mécaniques de marques héritières des maîtres horlogers de marine,
- les montres à quartz analogiques avec fonctions nautiques,
- les montres digitales avec fonctions nautiques,
- les montres de soirée à évocation nautique,
- les montres de dame à évocation nautique,
- les marques de montre partenaires d'évènements nautiques et de skippers.

Les fonctionnalités utiles en navigation sont identifiées. Plusieurs skippers renommés, concurrents des plus grandes régates internationales et personnalités de la mer, apportent leur témoignage sur l'importance de la maitrise du temps en mer et d'un chronographe multifonction spécialisé à bord.

Une liste des sites web des marques citées et une bibliographie ad-hoc complètent cet ouvrage qu'il sera bon de ranger dans sa bibliothèque et de consulter avant tout achat d'une montre ou tout simplement pour rêver durant les longues soirées d'hiver sans navigation.

Particulièrement utile au plaisancier, que celui-ci soit propriétaire, skipper ou équipier, ce guide permet à chacun de choisir la montre la plus adaptée à son usage: croisière ou régate en mer ou sur un lac, course au large en Méditerranée ou sur l'Atlantique. Ce guide intéressera également beaucoup le passionné de montres à la recherche d'un thème de collection et souhaitant identifier les modèles incontournables de celle-ci.

Henri-Christian Schroeder est collectionneur de montres nautiques, Commodore du Trophée Bailli de Suffren, course croisière internationale au large de yachts de tradition au départ de Saint-Tropez et administrateur de l'Association Française de Yachts de Tradition.

Classic Yacht Club est un portail d'informations, gratuit et ouvert à tous. Il a vocation à rassembler tous les acteurs de l'univers de la voile classique et des yachts de tradition : Armateurs, marins, organisateurs, clubs & associations, professionnels et simples amateurs grâce à son magazine en ligne, son encyclopédie et ses dossiers dédiés au yachting classique ainsi que son espace d'échanges entre membres.

Classic Yacht Club regroupe déjà près de 800 membres et une page Facebook suivie par plus de 1500

personnes à travers le monde.

Un marin sans chronographe est comme un navire sans gouvernail

La maîtrise des mers et la découverte de nouveaux continents ne furent possibles qu'avec l'aide des instruments de navigation que l'homme s'acharna depuis toujours à inventer : l'astrolabe des anciens, la boussole, l'octant, le sextant puis les chronomètres de marine, et enfin aujourd'hui le GPS. Ces « chronomètres de marine » incarnent aussi bien la légende de la conquête des routes maritimes par les grandes flottes de commerce, que celle des forces navales, mais également depuis un siècle celle de la plaisance ainsi que des régates et des courses au large...

Ainsi aujourd'hui, tout armateur d'une embarcation d'exception qui se respecte se veut souvent être aussi un collectionneur avisé de garde-temps ! Et tout passionné de plaisance est toujours très intéressé par une " montre de bateau", soit pour son utilité en mer, soit pour sa symbolique à terre, soit pour les deux à la fois. Le choix alors d'un chronographe de navigation (jamais en or jaune à bord en journée ou sur un blazer, étiquette oblige) est alors un prolongement naturel et évident de la pratique de la plaisance, que ce soit àla voile ou au moteur, pour la croisière ou pour la régate, sur une unité high-tech ou sur une nef « classique », en mer, sur un lac ou un fleuve, voire sur un canal. Et si les chronographes ont tendance à exhiber de plus en plus souvent une foultitude coûteuse de complications absconses parfaitement inutiles, incompréhensibles et difficiles à activer ou à exploiter, il n'en reste pas moins vrai que certaines fonctionnalités de tels instruments de poignet peuvent être particulièrement déterminantes à bord, et que celles-ci doivent donc être choisies en fonction du type de navigation pratiquée ; croisière, régate ou course au large, en Méditerranée, sur l'Atlantique ou sur le lac Léman, d'Annecy ou du Bourget, etc...

Comme il n'existe étrangement aucun salon nautique ou horloger, ni ouvrage spécialisé, voire aucun article de presse vraiment complet sur ce sujet il nous a semblé qu'il était temps de faire le point ici sur les différents modèles de montre à thématique nautique, intéressant aussi bien le plaisancier que le régatier et le coureur au large ou le collectionneur, disponibles sur le marché, que ce soit dans l'une des horlogeries de luxe très bien achalandées ou même sur internet pour les séries limitées, épuisées ou non...

Inséré le 17 janvier OPEN FORUM Enlevé le 17 février 2013

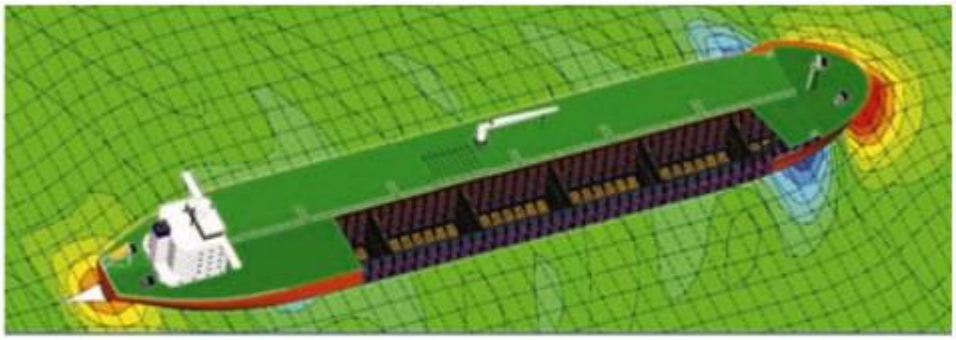
Super efficient Aframax design unveiled

Following last year's launch of DNV's revolutionary gas powered VLCC conceptual design, comes news of an upgraded Aframax design from Hamburg-based class society Germanischer Lloyd (GL).

This is a Mark II version of the original design launched in conjunction with the National Technical University of Athens (NTUA) in 2008.

GL's Dr Pierre C Sames, senior vice president strategic research and development, speaking at Nor-Shipping, explained that following feedback from shipyards and tanker operators, the design was sent back to the drawing board, resulting in the launch of a new Aframax design concept, called BESTplus.

One of the reasons for the re-design was that tanker safety had improved over the last decades, which has been documented in a recent Formal Safety Assessment (FSA) study for large oil tankers submitted to the IMO.



A schematic of BESTplus.

The risk picture for modern oil tankers shows that the danger to the environment is dominated by collision, grounding and fire. The FSA study suggested considering larger double hull widths and double bottom heights as potential cost-effective risk control options.

Since the introduction of the double hull concept, oil tanker design has not evolved and any changes were recently driven primarily by improving shipyard production.

Little attention has been paid to a vessel's performance over her lifecycle and, in particular, the fuel-efficiency – as measured by the Energy Efficiency Design Index (EEDI) – has not improved in the last 20 years, despite the general improvement in systems and their efficiency.

The recently developed EEDI, which is planned as a future mandatory newbuilding standard, is a simple but accurate measure of a vessel's inherent fuel efficiency, which compares CO2 emissions to transport work.

Although tankers are considered to be among the most energy efficient vessels today, with an EEDI value ranging from 2 to 6 g CO2 / (t*nm), they emitted about 115 mill tonnes of CO2 in 2009, which is an 8% increase compared to 2007. The current share of tanker CO2 emissions is approximately 12% of the total CO2 emissions from international shipping.

In response, GL and NTUA teamed up in 2008 to develop a novel Aframax tanker design concept, which won awards for technical achievement in 2009. GL also received feedback from shipyards and tanker operators regarding the desired features of new tanker designs and these were incorporated in the new BESTplus design concept.

GL said that BESTplus enhances the attractiveness of the initial design concept by also integrating hydrodynamic optimisation of the hull form, thus reducing fuel consumption and emissions.

GL and NTUA again co-operated on the new design concept, and were supported by Friendship Systems – a GL company and provider of the Friendship-Framework computer aided design (CAD) and computational fluid dynamics (CFD) integration platform.

Potential cargo loss

Based on current growth rates, oil transport demand is expected to be lower than available oil tanker supply for the next couple of years. However, even small changes in demand will open up opportunities for new Aframaxes - starting in 2014.

This was recently documented by Intertanko. A second analysis undertaken by GL based on IHS Fairplay data shows that approximately 20% of existing Aframax tonnage will be older than 15 years in 2012, which could trigger replacement activities. GL claimed that the BESTplus design concept anticipated this possible demand for new tanker tonnage by integrating only available technologies.

The design concept targets the typical Aframax tanker trades in the Caribbean Sea. Facilities in the main US ports and the US Emission Control Area (ECA) set the operating conditions. If a Mexican ECA were also to be implemented, about 30% of the total transit distance for this trade would be inside of an ECA.

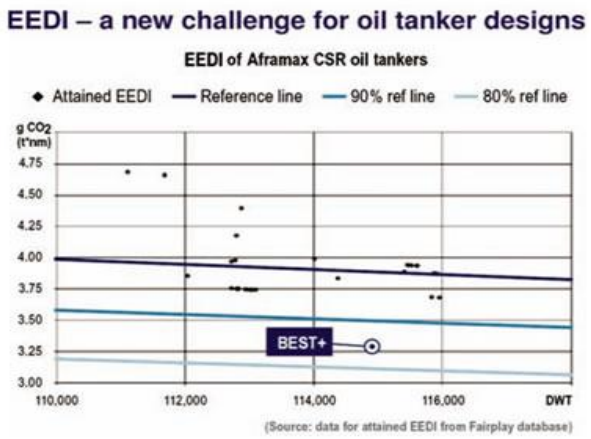
The current design assumes the use of MGO as fuel when sailing in an ECA. LNG as ship fuel, or the use of scrubbers, was considered as alternatives to the basic design concept. The need for relatively high speed, which has been mentioned by ship operators active in this trade, must be considered with regard to the upcoming EEDI requirement to ensure superior vessel competitiveness.

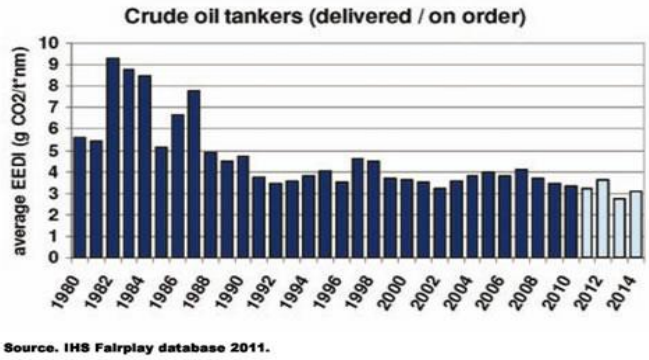
Design approach

The design approach used an advanced optimisation environment, which integrates tools to predict required propulsion power, stability, oil outflow index, cargo capacity and hull structural scantlings, according to IACS Common Structural Rules (CSR).

This was achieved through the linking of the Friendship-Framework with Shipflow, NAPA and Poseidon, and by using parametric models for the hull form, layout and structure, respectively.

GL said that the design concept addresses the need for safer shipping by reducing the oil outflow in case of an accident. It contributes to greener shipping by improving energy efficiency and, thus, reducing CO2 emissions per unit transport. In addition, the design offers smarter shipping by reducing fuel costs with an optimised hull form, and by increasing revenues with greater cargo capacity, the class society claimed.





The resulting design concept features a best-in-class cargo capacity with unrivalled speed performance. The main particulars are comparable with those of similar-sized Aframaxes.

The optimisation targeted speed at three different drafts, a cargo capacity taking due account of cargo volume and mass, hull structural mass, cargo oil tank and ballast tank layout, as well as double hull width and double bottom height, which determine the oil outflow volumes in accidents. Related design parameters were systematically varied and around 2,500 design variants were generated and assessed.

Cost of transport (ratio of annual capital, fuel and other operating costs to annually transported cargo mass), normalised with respect to the reference design, was used as the primary target function for the optimisation. Capital costs were based on a typical newbuilding price of $58 mill and 25 years lifetime. Fuel costs were computed according to a dedicated roundtrip model (with HFO at $500 per tonne and MGO at $800 per tonne) for Caribbean trading. Other operating costs are constant (about $3 mill per year) and based on Moore Stephens' Opcost 2009.

BESTplus
Principal Particulars

Dwt	114,923
Cargo volume	129,644 cu m
Length, overall	250 m
Beam	44 m
Depth	21.5 m
Design draft	15.7 m
Block coefficient	0.85
DB height	2.1 m
DBH COT 1	2.75 m
DB width	2.65 m
Oil outflow index	0.0142
Speed at max draft	15.6 kn
Speed in ballast	16.8 kn
EEDI	3.2814 g CO2/(t*nm)

The reference design for comparing cost of transport is an existing pre-CSR tanker, which was used as reference in GL's 2008 study. Compared to the reference design, a 7% improvement in cost of transport was realised due to the better hull form for the best design variant.

TankerOperator July 2011

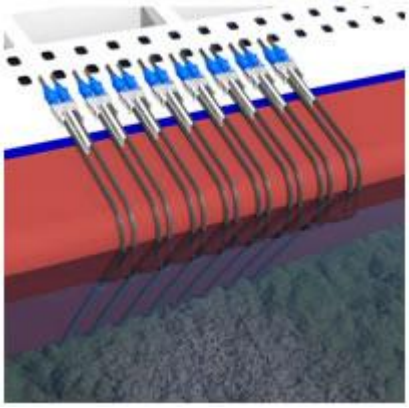
Inséré le 21 janvier Logboek Nouvelles Enlevé le 21 février 2013

Costa Concordia refloating

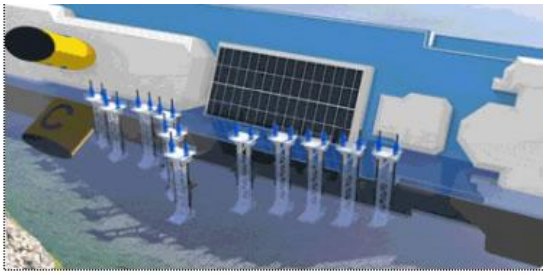
Stabilisation

The first phase involves the anchoring and stabilisation of the wreck to prevent any slipping or sinking. This will make it possible to work safely even in bad weather.

Stabilisation is performed using an anchoring system made up of four submarine anchor blocks fixed to the sea bottom between the center of the wreck and the coast. Two cables are fixed to each of the anchor blocks (a total of eight cables, each consisting of 18 smaller cables). These sixteen cables are anchored to the strand jacks welded to the left side of the wreck. The strand jacks are hydraulic jacks used to tension the cables and give the wreck more stability.



In parallel, 12 retaining turrets will be installed for use during the parbuckling of the wreck. Jacks mounted on the tops of the turrets are attached to chains (two per turret or a total of 24 chains) that pass under the hull and are fixed to the port side of the wreck. These cables will be used for balancing purposes during the rotation and parbuckling of the wreck.



Installation of submarine supports and starboard side caissons

This stage involves the preparation of the false bottom on which the wreck will rest after rotation.

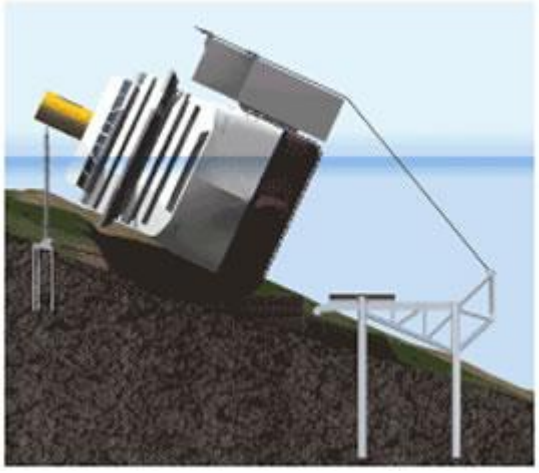
The preparation of the false bottom is divided into two separate phases.

First grout bags will be positioned and filled with cement to occupy the empty space between the two spurs of rock on which the wreck is resting and create a stable base for the hull. After divers have positioned the bags, mortar prepared on a barge will be injected into them. The grout bags have eyelets for easy removal during clean-up operations.

After positioning the grout bags, three large platforms (each resting on six piles) and three smaller ones will be fixed in place. The piles have a diameter of 1.6 m. The piles will be inserted into the ground by drilling a 2 m hole, using a closed circuit system so that no waste is dispersed in the sea. The space between the pile and the hole will then be filled with cement. After testing against a template, the platforms will be lowered onto the piles and cemented in place. The base of the platforms is made of wood and all the rest is metal. Of the three smaller platforms, one rests on four

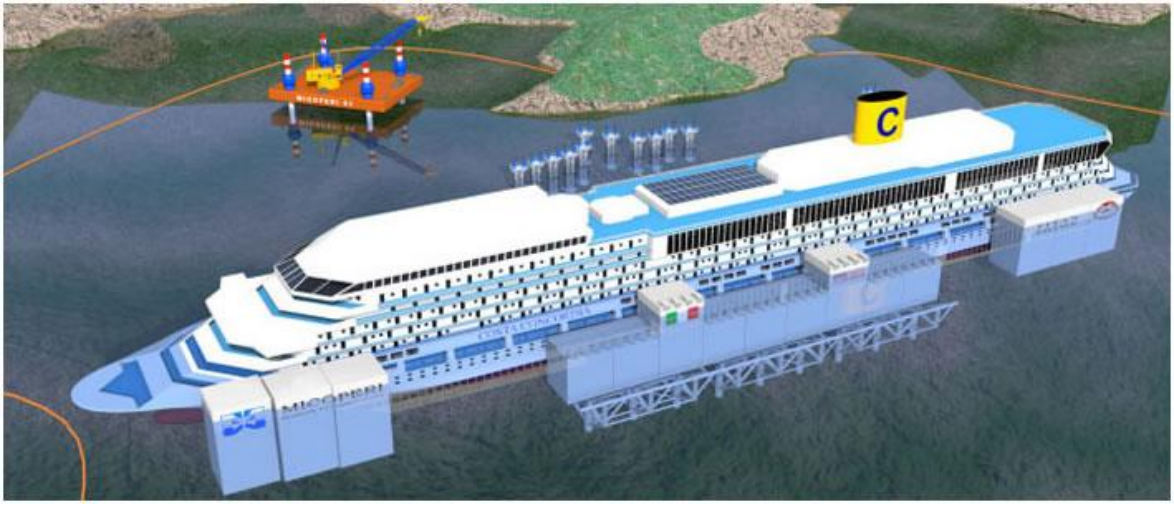
piles and the other two on two piles each (a total of 26 piles).

After preparing the false bottom, the Micoperi 30 crane will be used to install the caissons on the left side of the wreck. The caissons are attached to guides previously welded onto the wreck.



Parbuckling

This stage will take about two days, as the movement has to be extremely delicate and constantly monitored. The parbuckling will be performed using tie cables attached to



the top of the caissons and to the platforms, which will be pulled seawards, while the cables attached to the starboard turrets will be used for balancing. This is a very delicate phase, during which the forces involved have to be offset carefully to rotate the wreck without deforming the hull.

Installation of caissons on starboard side

In this stage the caissons are attached to the starboard side of the wreck. These caissons will be used during the subsequent re-floating stage.

Re-floating

At this point the hull is resting on the false bottom at a depth of about 30 m. A system of hydraulic pumps will be used to empty the water gradually from the caissons on both sides of the wreck, pushing it upwards. On completion of the emptying process, a section of about 18 m will remain submerged.

Inséré le 19 janvier Logboek Nouvelles Enlevé le 19 février 2013

After salvage op, beached vessel has nowhere to go

Salvors have pulled **Pratibha Cauvery** from the seabed, but the oil tanker will find it tough to extricate itself from the legal mess it is in. Having come from Haldia to Chennai with a single-voyage permit in the last week of September, its classification certificate had expired soon after it unloaded its last cargo. After remaining grounded for 11 days till Sunday, the ship has now been towed three nautical miles off the Chennai coast, but it can neither go out of the Tamil Nadu jurisdiction nor come to the city port to find a berth.

The city port on Monday clarified that it will not allow **Pratibha Cauvery** to enter the port unless there is such a direction from the Union shipping ministry. With relatives of some of the sailors who died while trying to escape from the beached vessel approaching the Madras high court, it cannot sail away to another port. Chennai port finds no reason to give a berth to Pratibha Cauvery. "We are a commercial entity with three berths for oil tankers which are being used. We can't let a dead ship take up the space and deny us business," said a port official. Port authorities are already cut up with political interferences at the shipping ministry level that force them into letting abandoned vessels take up precious space at the port.

Chennai Port Trust chairman Atulya Mishra said they have not committed to alloting a berth to the ship. "There are safety issues and financial issues. There are different reasons, especially with an expired classification certificate. We will follow directions from the shipping ministry," he said.

Six sailors were killed while trying to escape from the ship which started drifting in the winds of Cyclone Nilam on October 31. Sources who visited the ship said its engine is working, but both the anchors are broken. It doesn't have valid classification documents needed for voyage. The DG Shipping clearance for trade operations expired on October 30, and the vessel was awaiting permission from the owner, Pratibha Shipping, to head to a dry dock when the accident happened. On Monday, the Seafarers' Port Welfare Association distributed clothes to the surviving sailors of the ship for Dilwai. Source : Indiatimes The UNION

Cops grill owner of ship that ran aground

As part of the investigation by Tamil Nadu police into the grounding of oil tanker **Pratibha Cauvery** on the Chennai coast on October 31, police officers on Friday interrogated the owner of the vessel and two senior officers of his shipping company. Six sailors died when the lifeboat in which they were trying to escape the stricken ship capsized in turbulent waters when Cyclone Nilam hit the city, causing the vessel to run aground off Besant Nagar beach.

A senior police officer said investigators questioned **Pratibha Shipping Company** CEO Sunil Pawar and two senior officials of the firm. "They arrived for questioning on directions of the Madras high court, which asked them to appear before the Sashtri Nagar police on November 23," the officer said. Two investigations are being carried out, by the state police and the directorate-general of shipping, to determine what caused the ship to beach and who was responsible for the deaths of the sailors. Both investigations are also looking into the condition of the vessel, alleged criminal negligence by the ship's owner and captain. Pawar, Sunil Kumar Rai, captain-designate on shore, and Avinash Mohan, additional captain-designate on shore, appeared before police in the city on Friday after obtaining anticipatory bail from a court in Mumbai. Investigators said they had completed questioning Rai but Pawar and Mohan face additional interrogation on Saturday. **Source : Indiatimes**

Inséré le 23 janvier HISTORIEK Enlevé le 23 février 2013

Lloyd's Register (part III)

1870-1914

The position so rapidly established by the Society was summed up in a history of merchant shipping published in 1876. The author, W S Lindsay, remarked that, in considering the improvement in the quality of ships over the previous 25 years, 'it is impossible to question the great value of the services this Institution has rendered to the country. Here we have another instance of the valuable work done in this country without Government aid or interference in any shape or form. A few individuals for their own protection, as well as for the protection of the public, associate themselves together, and, by their organisation, do perhaps more to save life and property at sea than all the laws which have been passed having that subject in view'.

The Society's activities embraced all the key developments arising in shipping, from the first oil tankers to the first vessels driven by the marine diesel engine.

Led by men of undoubted talent in the fields of both engineering and administration, from Bernard Waymouth and Benjamin Martell to later Secretaries and Chief Surveyors such as Andrew Scott and Harry Cornish, Lloyd's Register grew into an immensely respected and confident organisation.

The Society kept up with the quickening pace of technical change by adopting a more scientific approach to the formulation of rules.The pattern for the future was established with the new Rules for iron Ships in 1870. They were adopted only after overcoming some stiff resistance, which reflected the lack of knowledge among many of the Society's surveyors as shipbuilding became more technical. As a result, with bigger and more complex ships and engines being built than ever before, the first engineer surveyor was appointed in 1874. Within ten years such men accounted for more than a third of technical staff, with an increasing number based overseas, and they outnumbered ship surveyors by 1900.Bernard Waymouth believed that a combination of practical and theoretical training delivered the best surveyors. Recognising the need to foster an improved scientific approach to shipbuilding, Lloyd's Register began sponsoring scholarships to British universities offering relevant courses from 1877. But Waymouth, speaking in 1873, was also clear that 'you cannot make a surveyor in a day... the best thing our committee can do is to take young men, well educated and well grounded in the theory and practice of their profession, and then put them with good experienced surveyors, and in the course of a few years they make first-class men'. The Society began recruiting young men mainly from the Royal School of Naval Architecture but also a few from the Royal Naval College at Greenwich, training them in London and sending them to major shipbuilding ports.Many of these young men would soon find themselves serving overseas. The expansion of the British merchant fleet carried Lloyd's Register with it around the globe. By the mid-1870s the Society was appointing non-exclusive surveyors all over the world, from Scandinavia and Italy, Burma and South Africa to the United States, Australia and New Zealand. The number of exclusive overseas surveyors grew during the 1880s, prompted by the request of a major marine underwriter insuring a thousand steamers; the first of these new appointments was Thomas Congdon, sent out to New York in 1881. By the First World War there were few countries of any importance where Lloyd's Register

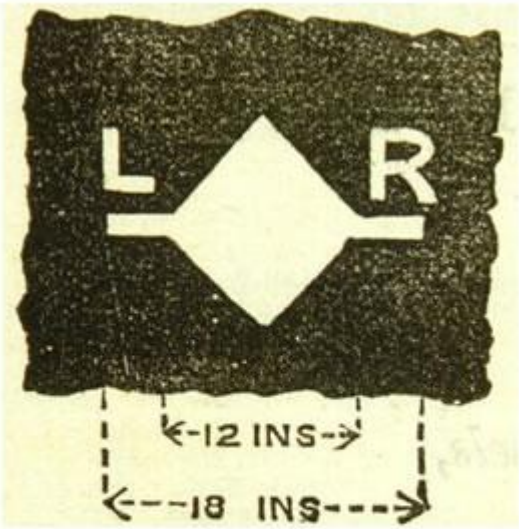
Royal Naval College Greenwich – On the Flood by Charles Dixon
Many of the new young surveyors came from the Royal School of Naval Architecture and Marine Engineerin College, Greenwich. After receiving their training in London they were sent to outports covering the major s

British Corporation Coat of Arms
Founded in Glasgow in 1890, British Corporation was amalgamated with Lloyd's Register in 1949.

did not have a surveyor. In 1914 there were 153 surveyors based overseas out of a total of 360.

The influence of Lloyd's Register overseas was even greater than this suggests. In many countries the very fact that a vessel was classed by Lloyd's Register made it exempt from inspection by government surveyors. In addition several countries appointed the Society to undertake statutory duties on their behalf. In particular, the UK Merchant Shipping Act passed in 1890, which made load lines compulsory for the first time, specified Lloyd's Register as one of the bodies authorised to assign load lines to all eligible vessels registered in the UK and British colonies. As compulsory load lines were adopted overseas, Lloyd's Register was given the same task in other countries.

There was another advantage in pursuing the classification of foreign-built and foreign-owned ships. British shipping boomed during the late nineteenth century, and the natural cycle was given an extra kick by the Boer War, which stimulated further growth. When this came to an end, the British shipping industry fell into the doldrums, and was only beginning to pick up when the First World War was declared. On the other hand, the fleets of many overseas nations continued to expand, and it was this which helped the Society weather the adverse impact of the downturn in UK shipping.



Lloyd's Register had advised on freeboard from 1835, giving rise to what became known as 'Lloyd's Rule'. From 1870 the Society published Rules covering awning deck vessels including the application of a load line. This became compulsory for all new awning deck vessels from 1874. The diamond device was the first form of load line used.

The load line debate had stimulated domestic competition for the Society. The government had originally intended to give Lloyd's Register the monopoly over the assignment of load lines. This was opposed by a group of independently minded Scottish shipowners and shipbuilders on the River Clyde. They considered the proposal ran counter to the Society's founding ethos — if classification was ultimately a decision for the owner and builder, then surely they should also be able to exercise some choice in this matter too. They formed the British Corporation for the Survey and Registry of Shipping (BC) to provide this choice. As men of significant influence in the British shipping industry, their views were heeded by the government and the eventual legislation in 1890 added both the British Corporation and the French classification society, Bureau Veritas (BV), as load line authorities. This very act in itself cannot have endeared the fledgling organisation to Lloyd's Register, so confident of its position as the leading classification society. BC won growing support from shipyards and shipowners not just in other parts of Britain but also overseas, due in part to the reputation and leadership of the BC's eminent Chief Surveyor, Dr James Foster King. It was only after King's departure in 1940 that it would be possible to initiate serious discussions between the two sides about amalgamation.

In belated recognition of the importance of Clydeside to British shipping, which was now producing almost a third of the tonnage launched in the UK every year, Lloyd's Register set up a branch committee in Glasgow in 1900

A decade earlier the Society had given greater voice to the views of shipbuilders by agreeing in September 1890 to establish a Technical Sub-Committee, which met for the first time on March 24, 1891. This may have been in direct response to the formation of BC. The Sub-Committee was initially composed of a dozen shipbuilders and marine engineers from the principal shipbuilding ports of the UK, with representatives of steelmakers and forgemasters being added later.

Throughout the 1890s and early 1900s Lloyd's Register kept up with the accelerating rate of change in shipping as iron gave way to steel, refrigeration plants were installed for the carriage of frozen

meat, steam propulsion became increasingly powerful and sophisticated and the first marine diesel engines were introduced. Lloyd's Register would even be invited to inspect onshore cold stores by 1911.

The Society expressed its confidence through the development of an impressive new head office at 71, Fenchurch Street in London. Completed in 1901 at a cost of more than f160,000, the building was designed by Thomas Collcutt and decorated by some of the leading artists of the day.

An early advertisement for the Bell-Coleman refrigerating system
Reproduced by kind permission of the Science Museum/Science & Society

Rivals were left trailing in the Society's wake: BV, established in 1828; Registro Italiano Navale (RINA) (1861); the American Bureau of Shipping (ABS) (1862); Det Norske Veritas (DNV) (1864) from Norway; Germanischer Lloyd (GL) (1867); the Japanese society (1899), founded as Teikoku Kaiji Kyokai (Imperial Japanese Marine Corporation), now ClassNK (Nippon Kaiji Kyokai or NKK); and the Russian Maritime Register of Shipping (RS) (1913). The Society's officers were hostile to competition among the classification societies, believing it would lead to the construction of inferior ships, although there were times they felt compelled to face such competition head-on. The only society to trouble the Society much prior to the First World War was BV.

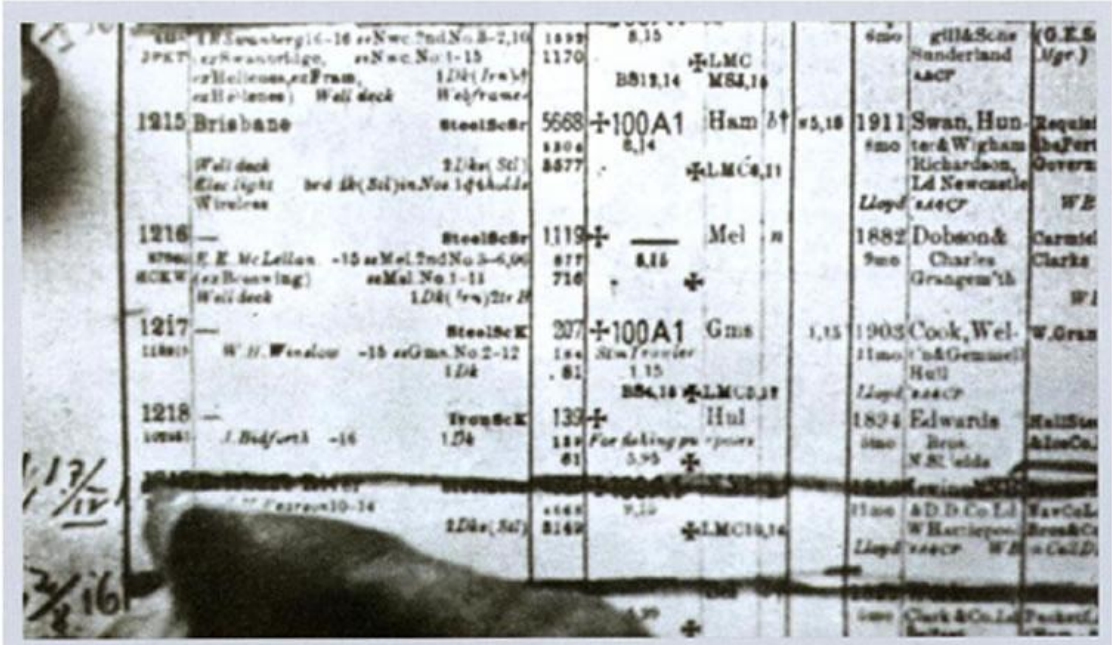
By 1914 the Society still classed nearly half the world's shipping. It was entirely justified when it was agreed that the name of the Society should be simplified to become Lloyd's Register of Shipping.

1914-1919

Many of the Society's staff were seconded to the UK government as advisors, including the refrigeration staff who were attached to the Ministry of Food. The Society had first surveyed insulated barges for the Port of London Authority after 1911 and during the war inspected cold stores with a total capacity of 7.5 million cubic feet. *Reproduced by kind permission of the PLA Collection/Museum of London*

With the advent of war many ships were pressed into government service, from the largest, such as passenger liners used as troop transports, to the smallest fishing vessels used for mine-laying and mine clearing. *Reproduced by kind permission of the Imperial War Museum*

With British shipyards instructed to give priority to military requirements, the Society found itself busier than ever, declaring the tonnage classed during 1914-15 to be a record. Nevertheless it took the authorities some time to wake up to the national importance of the unique service offered by the Society. They were happy to take away senior staff for secondment to government departments or projects. Among them were Westcott Abell, the recently appointed Chief Ship Surveyor, who ultimately became Technical Adviser to the Controller of Shipping; and Robert Balfour, then Principal Expert on Refrigeration, as Engineer Director of the Cold Storage Department of the Ministry of Food, where he provided the technical advice for the refrigerated vessels being built to ship supplies of meat for troops at the front. The government was slow to recognise the strain that this, together with the call-up of other staff, imposed on an organisation which was being tested to the limits. It was only after a fight that certain posts were declared reserved occupations and other staff were reclaimed from the forces. A number holding posts in hostile territory succeeded in getting back to London after the outbreak of war but two did not make it — George Dykes, the Principal Surveyor for the German Ports of the Baltic and North Sea, was interned in Hamburg and James Dykes in Fiume, then part of Austria-Hungary. Of the 108 employees who joined the armed forces, 15 lost their lives, and their names are commemorated on the war memorial at 71, Fenchurch Street. In an attempt to make up the shortfall, the Society also recalled from retirement several former surveyors, such as Thomas Pearce, who returned at the age of 66 in 1917. Women, previously appointed as clerks in small numbers at the outports, were recruited for the first time to head office on temporary contracts.



Despite restricted circulation the Imperial German Navy managed to obtain copies of the *Register Book* during both World Wars. Copies were made, marked AUSZUG, and placed on every submarine and warship.

Although the bombing raids over London could not compare in intensity with those endured by the city during the Second World War, they did cause death and destruction. Lying at the heart of the City and close to the docks, 71, Fenchurch Street proved a safe haven for many working locally as the Society agreed to open its basement and sub-basement as shelters. The worst raid came on June 13, 1917, when 594 people were killed — remarkably Fenchurch Street was left unscathed.

Asano Shipbuilding Co. Ltd, Tsurumi
The First World War provided a major stimulus to shipbuilding in Japan, and showed Japanese efficiency with ships being completed in record time. One 9,000 deadweight ton vessel was delivered within 30 days of keel-laying.

Despite their best efforts, British shipyards, which had been turning out 60 per cent of the world's shipping before the war, simply could not supply enough ships. The government exacerbated the shortage during 1915 by requisitioning almost a quarter of the merchant fleet and the situation was compounded by the losses caused by German U-boats. The scarcity of ships propelled freight rates upwards, forcing a reluctant government to take control of shipping in 1916.

Part of the solution was building ships for the British government overseas. In particular this meant the USA, Canada and Japan. The Principal Surveyor in Glasgow, James French, visited North America in 1915 to assess their preparations for the extra shipping they were being asked to build. Discussions were already being held with the American Bureau of Shipping (ABS) about closer cooperation, including the appointment of a nominee of Lloyd's Register to the ABS board. The Society had also expected that ABS 'will act in agreement with [the Society] in all matters affecting the survey and classification and load line of American shipping', with a common office in New York. Such a one-sided agreement was clearly not something ABS was expecting, breaking off the discussions and forging instead a closer relationship with the British Corporation (BC). The Society's

During the First World War shipbuilding expanded on an unprecedented scale and new shipyards were constructed to meet the demand. At Hog Island on the Schuylkill River, Pennsylvania, a vast expanse of frozen marsh was thawed and reclaimed and 50 building berths constructed. At one point during the war, 30 of the Society's surveyors were working in the yard on the survey of ships building to class. *Reproduced by kind permission of the Smithsonian/NMAH-Transportation Collection*

approach was obviously rather high-handed, stemming from its confidence as the premier society and its roots in the world's leading shipping nation.

After the failure of negotiations with ABS, Andrew Scott, the Society's able Secretary, travelled to the USA and in February 1916 established an American Committee, the first of many national committees set up by Lloyd's Register around the world. Again the Society's standing was reflected in its ability to appoint as Chairman a leading American shipowner, Alfred Gilbert, President of the New York and Cuba Mail Steamship Company.

Jimmy French made a great impact in North America. The Society's Chairman, Sir Thomas Lane Devitt, would write in March 1920 that his 'wide experience and sound practical judgement have been of the utmost value to American shipbuilders, who have told me personally how greatly they have appreciated his services'. French constructed and controlled an organisation which grew from 22 to 124 surveyors between 1914 and 1918, as US shipbuilding expanded from just 200,000 gross tons a year to 3.5 million. During 1916 some 40 per cent of the ships classed by Lloyd's Register were built under survey in the USA. Two-thirds of all the shipping launched in the USA during the war were built to class, shared fairly evenly between ABS and Lloyd's Register.

New shipyards sprang up in the most unlikely places. The Hog Island yard belonging to the American International Shipbuilding Corporation was established on land reclaimed from the frozen marsh of the Schuylkill River in Pennsylvania. The Society employed a team of 30 surveyors at the yard where prefabricated sections were constructed on 50 berths. Prefabrication was a wartime innovation devised to speed up production when conventional yards could not keep up with demand. The scale of the work, with each type of prefabricated vessel requiring the approval of many separate plans, was one reason why so many more surveyors were employed in the USA. The efficiency with which the Society helped to ensure that parts made in so many different factories, many without previous experience of producing material for ships, eventually fitted tightly together when they reached the shipyard owed much to the organisation's long expertise in inspecting shipbuilding materials at source in the UK.

While the war stimulated innovation, it also led to a revival of traditional techniques, as timber ships were built once more in North America. The Rules for Wood Ships guided surveyors whose experience had been gained from steel construction as shipyards in Canada and along the west coast of the USA drew on the vast forests of their hinterland to build more than 700 wooden ships.

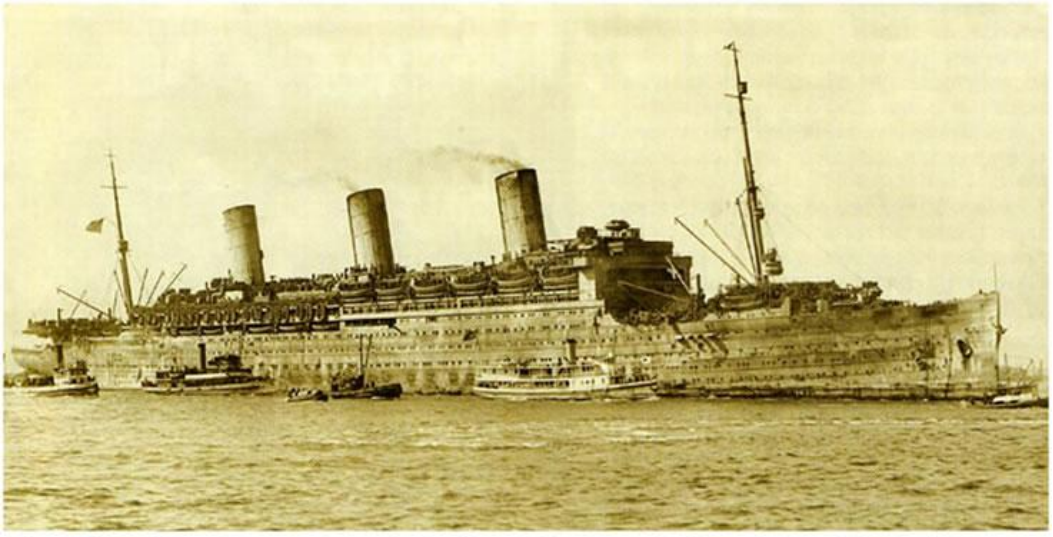
In the UK staff carried out most of the work for the inspection and delivery arrangements of the Standard Ship Programme introduced in 1917. James Montgomerie, then Principal Surveyor in

Scotland, was asked to help expedite the programme as liaison officer for the Controller of Shipping. Some 15 standard types of cargo ships were produced, from coasters to tankers, not only in the UK but also in the USA. The talented Westcott Abell also supervised investigations into the use of welding, another technique adopted to accelerate production.

The Society was also invited by the Admiralty to provide advice for new types of auxiliary vessels built by civilian yards during wartime. The Admiralty appreciated in particular the Society's expertise in the construction of lightly built and shallow draught vessels, including patrol vessels, minesweepers, gunboats, tugs and boom defence vessels. About a thousand such craft, totalling more than 650,000 gross tons, were built under survey. Another technique adopted during the war was the construction of ships from ferro-concrete. When the Admiralty placed orders for 154 ferro-concrete tugs and barges in 1917, Lloyd's Register was asked to carry out the surveys. This led to the recruitment of specialists in this field to fill the gap in the knowledge of existing staff. In the end, the building programme was significantly curtailed and eventually cut short by the end of the war. The same fate befell ambitious plans with which Lloyd's Register was involved to build a 3,500 ton cargo vessel from ferro-concrete in the USA during 1918.

The Society also acted for the Director of Naval Contracts in inspecting material such as condenser tubes and copper pipes produced for the Royal Navy in the USA. Inspection was an area which expanded considerably during the war. As well as surveyors sent as inspectors to the USA, surveyors also inspected steel forgings for the Ministry of Munitions and for the first time electrical engineers were appointed. For most of the war the Society, at the request of the French government, inspected the quality of steel used to produce shells for the French army. At one time 70 surveyors were employed on this task, under the direction of Assistant Chief Engineer Surveyor Harry Ruck-Keene, which also covered nickel steel bands for machine gun ammunition, corrugated and straight iron sheets for trenches, and steel for tanks, gas pipes and detonators. Throughout the war the Society inspected 1.4 million tons of shell steel as well as almost 8 million tons of ship and boiler steel.

By the end of the war Lloyd's Register employed 513 surveyors, of whom 455 acted exclusively, and this band of men had surveyed more than ten million gross tons of merchant shipping. While the bulk of this was produced in the UK and North America, the Society remained active in many other countries around the world. One nation whose shipbuilding industry was given a major fillip by the war was Japan, where the number of surveyors increased from five in 1914 to 18 in 1918. Jimmy French was also granted the authority to approve plans in Japan, whose shipbuilders relied heavily on materials exported from the USA. In 1918 a surveyor was even posted to Korea, extraordinarily remote in those days.



At the end of the war the troop ships were used to repatriate the soldiers to their home country. This photograph of the *Leviathan* shows just how many people the troop ships were capable of carrying during the war, in this case nearly 14,000.

As the war ended, there was little let-up in work. The system of periodic surveys had been curtailed during the war, so there was a growing backlog of surveys to carry out for existing vessels. There were surveys to conduct on ships requisitioned by the British government from neutral countries before they could be returned to their owners. Many of the enemy vessels surrendered at the Armistice had never been classed so they too needed surveying. Special surveys were carried out on auxiliary vessels being converted into merchant ships. The pressure was intense for there was a desperate shortage of shipping around the world.

To some it seemed as if the shipping industry in general, and British shipping in particular, would be able to resume where it had left off in 1914. Instead, shipping would be faced with acute challenges during the post-war years, challenges which would be shared by Lloyd's Register.

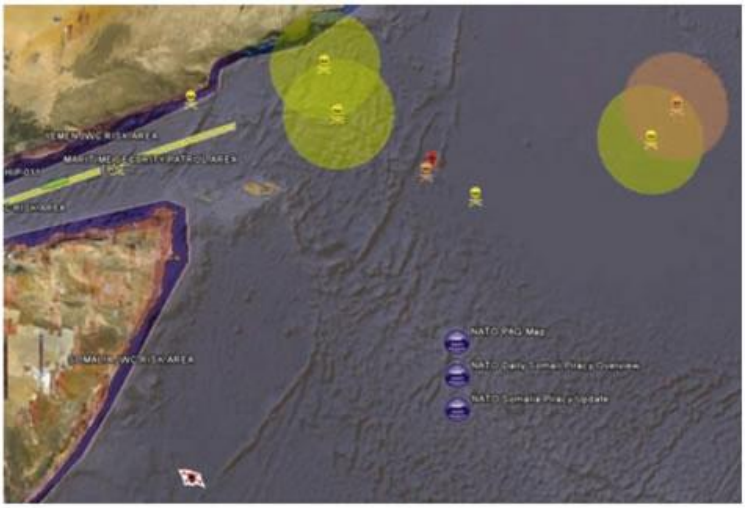
Following soon Lloyd's Register (Part IV)

Inséré le 25 janvier OPEN FORUM Enlevé le 25 février 2013

Tanker specific weather routing now available

Applied Weather Technology (AWT) has developed its ship routing and fleet management services to meet the specialised needs of voyages by vessel and cargo type, including tankers.

With maritime experts specialising in each of five ship types, AWT aims to meet the specific, segmented needs of the industry, ultimately helping to enhance fleet safety and reduce fuel consumption, the company said.



Screenshot of a pirate activity alert.

"At AWT, we are dedicated to continuous innovation to meet the needs of our customers," said Skip Vaccarello, AWT president and CEO. "We understand that ship routing and fleet management encompass myriad factors. Now, by offering specialised services, we are providing that next level of personalized service."

AWT's routing experts zero in on specific needs of the tanker sector, for example – including vessel age, type, size, speed, cargo, draft, client and vessel special requirements – then plot the most appropriate routes based on the goals of each individual voyage.

The company's experts include meteorologists, route analysts, forecasting specialists, maritime scientists, computer scientists and technology innovators, mathematical modelers, end-of-voyage analysts and vessel masters who are all focused exclusively on fleet optimisation to identify the safest and most cost-efficient routes while also reducing fuel consumption, costs and carbon emissions.

Pre-voyage planning and daily status reports with alerts and links to detailed voyage information are provided. AWT's BonVoyage (BVS) marine voyage optimisation software considers many variables, including weather and sea conditions, scheduled arrival times and fuel consumption targets. In addition, with AWT's GlobalViewTM fleet management system, fleet managers can track in-the-

moment ship performance, fuel consumption/ carbon emissions, weather conditions, ETAs, or other factors specific to tankers.

Laycan data

For example, as part of AWT's tanker service, fleet managers are given laycan data to ensure that the ETA of the vessel remains within the agreed laycan. Fleet summaries with colour-coded icons give a quick view to easily identify ships that need attention regarding fuel consumption and ETAs.

The data is refreshed every hour to show up-to-date status of the fleet. Custom reports can be generated for each vessel type and customer-centric reports vary by company and its departmental requirements.

"We believe AWT provides highly specialised services for our business needs," said Erik Hjortland, advisor, ship performance and bunker management, Odfjell Tankers. "We consider AWT to be a very innovative company, and they are very customer driven."

"AWT's shore-based service in combination with the (BVS) on board software assists us by protecting the crew and cargo, reducing heavy weather damages, providing more accurate vessel scheduling, curbing emissions and ultimately reducing fuel costs," He added.

The high-value cargoes carried by tankers can often be bought and sold several times during a single voyage, which can significantly affect its operational requirements. Because the vessels' crew and shore-based operating personnel must ensure that the ETA of the vessel remains within the agreed laycan, critical, well-founded decisions must be made throughout most passages.

These decisions relating to the weather, sea and current conditions expected en route help ensure the optimum route is followed, and the laycan achieved with the minimum cost.

AWT's tanker service provides a suite of services that can be mixed and matched to best meet a company's corporate goals. These include -Weather routing services.

- Pre-voyage planning.
- Least time routing.
- Safety first routing.
- Fuel optimisation.
- Laycan.
- Virtual Arrival.
- Voyage tracking.
- Position polling and AIS data.
- Daily status reports with alerts and links to detailed voyage information.
- Shelltime performance reports customised to the charterparty terms.

Tanker service benefits include: -

- 24/7 access to tanker routing expert.
- Comprehensive fleet management with GlobalView.
- Customised fleet and voyage summaries.
- Customised alerts.
- Access to latest global pirate activity.
- Access to resources consolidated from multiple websites.

AWT recently added safety enhancements to its GlobalViewTM fleet management system. These include comprehensive pirate data and rogue wave alerts, which are presented in one visual, easy-to-use format.

The company claimed that this helps fleet managers to manage their vessels' safe passage through pirate attack areas, war risk waters and embargo areas, and also regions known for rogue waves.

Tracking pirate activity

With the integration of real-time NATO pirate tracking information, GlobalView provides a comprehensive, at-a-glance overview of all pirate-related information in one easy-to-use, customisable visual format.

Available information includes 'mothership' locations and anticipated trajectory, hijacking information and pirate attack group operating areas. Live links are now integrated into GlobalView, which give fleet managers' one-click access to further NATO details in real-time. Additionally, users can customise the type of data available through myriad filters, including timeframe, location, type of pirate activity, historical data and more.

AWT claims to be the only company to provide severe motions and rogue wave alerts in its fleet management system. GlobalView now shows areas to avoid that have the potential for rogue waves, which are constantly changing based on conditions at sea.

Rogue waves (also known as freak waves, monster waves, killer waves, extreme waves and abnormal waves) are relatively large, spontaneous ocean waves that occur in the open ocean in deepwater and can be a threat to any vessel.

The scientific definition is a wave whose height is more than twice the significant wave height (SWH), which is defined as the average of the largest third of waves in a given area. Rogue waves are not always the largest found at sea; they are, rather, surprisingly large waves for a given sea state and are normally steep faced and often breaking.

AWT has developed a proprietary global model to forecast where current focusing rogue waves are likely to occur.

War risk and embargo areas.

GlobalView also provides visual information on war risk waters and embargo areas, as updated by the Joint War Committee of the IMO. Typically closer to shorelines, this helps fleet managers, masters and route analysts work together to visually identify these regions and either avoid or minimise exposure to high risk areas.

TankerOperators

Inséré le 27 janvier BOEKEN BOOKS Enlevé le 27 février 2013

"Nederlands-Brazilië in kaart"

B O E K B E S P R E K I N G door : Frank NEYTS

Bij Uitgeversmaatschappij Walburg Pers verscheen onlangs "**Nederlands-Brazilië in kaart. Nederlanders in het Atlantisch gebied 1600-1650**". Henk de Heijer en Ben Teensma tekenden als auteurs. Rietsuiker wordt ook wel beschouwd als het witte goud van de zeventiende eeuw. De Portugese kolonie Brazilië was destijds 's werelds belangrijkste producent van suikerriet, waarvan ter plaatse ruwe suiker voor de Europese markt werd gemaakt. Voor zo'n product waren honderden plantages, duizenden werkkrachten, veel schepen en natuurlijk Europese afnemers nodig. Zo waren Europa als consument, West-Afrika als slavenleverancier en Brazilië als suikerproducent nauw met elkaar verbonden.

De winstgevende suikerproductie had de begeerte van de West-Indische Compagnie (WIC) opgewekt. In 1630 veroverde de WIC de stad Recife, vanwaar zij haar macht over een groot deel van Noordoost-Brazilië wist uit te breiden. Maar voor een lucratieve suikerproductie, een effectieve

defensie, een doeltreffende administratie en goede scheepvaartverbindingen tussen de kustplaatsen van de kolonie en Europa was kennis van land en bevolking onontbeerlijk. Zo ontstonden diverse handgeschreven Braziliaanse leeskaarten of routeboeken van de hoofdkaartenmaker Hessel Gerritsz en compagniedirecteur Johannes de Laet. Een belangrijke manusriptatlas die zich in het Nationaal Archief in Den Haag bevindt, is echter lange tijd aan de aandacht van historici ontsnapt. Deze atlas bevat een aantal gedetailleerde hydrografische kaarten, aanzichten en beschrijvingen van de Braziliaanse kust. In uitvoering ingegaan op de Nederlandse aanwezigheid in Brazilië en de schat aan kennis die dat heeft opgeleverd.

"**Nederlands-Brazilië in kaart**" (ISBN 978-90-5730-774-4) telt 191 pagina's, en werd als hardback op groot formaat uitgegeven. Het boek kost 29.95 euro. Aankopen kan via de boekhandel of rechtstreeks bij Uitgeversmaatschappij Walburg Pers, Postbus 4159, 7200BD Zutphen. Tel. +32(0)575.510522, Fax +31(0)575.542289. . In Belgie wordt het boek verdeeld door Agora Uitgeverscentrum, Aalst/Erembodegem. Tel. 053/76.72.26, Fax 053/78.26.91, E-mail: info@agorabooks.com

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Inséré le 27 janvier OPEN FORUM Enlevé le 27 février 2013

Market report on high altitude wind energy

The international renewable energy consultancy GL Garrad Hassan has issued a market report on the new industry of high altitude wind energy (HAWE), including its offshore potential. HAWE systems are designed to tap into the high-velocity, stable air currents at altitudes of 200m to 20km above the Earth, which the consultancy sees as a source of cheaper and more abundant electricity generation than current wind technology.

The report looks at the potential of high altitude winds as an energy source, the current technologies within the sector and their potential as mature systems. As well as assessing individual technologies

and the companies developing them, the report addresses the technical and regulatory challenges faced by the industry and the likelihood of its success. It identifies 22 companies that have already developed, or have announced their intention to develop, prototypes including kites, kytoons and aerostats as well as gliders or sailplanes with turbines or airfoils attached. In Europe and the United States, these developers are beginning to see an influx of investment from both private and governmental partners, and the report investigates the potential for investor involvement at the nascent stages of this industry.

Technological diversity

As explained by GL Garrad Hassan, a union of specialist companies forming the renewable energy consulting division of the Hamburg-based GL (Germanischer Lloyd) Group, the basis for a HAWE system is relatively simple: A tethered object flying at altitude uses a mechanical system to harness the kinetic energy from the wind. The design of the object, the extraction mechanism and tethering arrangement vary considerably among the many systems in development. The system might take the form of a kite, parachute, rotating balloon or fixed wing; it might be tethered in parallel or situated on a floating platform offshore. GL Garrad Hassan's report looks at the prototypes, the potential of the major players and the challenges that need to be met for the technology to flourish.

Greater wind potential at 200m plus

As altitude increases, so do wind velocity and consistency. Wind power increases with the cube of the velocity, so potential wind energy increases massively with the greater and greater velocities at greater and greater heights. This logic underlies the push to build turbines with higher towers. HAWE systems are expected to operate at heights of greater than 200m, with the focus being on altitudes above 2km. Data for extreme heights have been limited, but GL Garrad Hassan examines the potential resource and the associated energy figures, and analyses the energy potential at altitudes greater than 1 km.

Offshore potential

The wind industry continues to move offshore, with onshore locations often limited in regions with growing energy demand. High-altitude systems seem promising in terms of offshore application as they could overcome some of the currently challenging hurdles, according to GL Garrad Hassan. Its report looks at the potential of HAWE systems in offshore regions, especially where water depth plays a role in the installation of conventional turbine systems. Challenges facing the systems and the current and possible regulatory environmental are analysed in terms of their future commercial applications; and the political and legal frameworks across multiple regional energy markets, with the potential to affect high altitude technology application, are outlined.

GL GARRAD HASSAN

Inséré le 29 janvier 2013 OPEN FORUM Enlevé le 01 mars 2013

Drilling Off Cuba, and How the Embargo Could be Very Costly for the US

The **SCARABEO 9**, on contract for **Repsol,** is currently sitting at, or very close to, “TD” or total depth on the first deepwater well ever drilled off Cuban shores. So far, things have seemingly gone off without a hitch, a few mechanical issues here and there, but nothing atypical for a new rig, and no environmental impacts.

But what if a catastrophic blowout occurs?

This was the subject of last week’s panel discussion at the Carnegie Center for International Policy in Washington, DC.

“There is no standing agreement with Cuba on what to do in case of a blowout,” says Wayne Smith, a senior fellow at the Center for International Policy and director of the Cuba Project.

Nobody is predicting a catastrophe, the panel reiterated, and reports indicate that Cuban drillers on board the Scarabeo 9 are being exceedingly cautious, but there’s no substitute for being prepared in case disaster strikes.

Prior to commencing drilling operations, **Repsol** contracted **Helix Energy Solutions Group** to provide immediate well intervention and other subsea services in case of well issues. It’s a great start, and Helix certainly proved their capabilities during the 2010 Macondo well blowout and oil spill, however Cuba is under a full economic and diplomatic embargo with massive implications.

This means:

1) The Scarabeo 9’s blowout preventer, the most crucial piece of well control equipment on board the rig was made by a US company. The trade embargo prohibits OEM spare parts or repair items to be sold to Repsol. Also, technical expertise from the OEM cannot be provided.
2) The “capping stacks” which have been created by Helix ESG, BP, the MWCC and others, are not authorized for use in Cuban waters. This means, if an uncontrolled blowout does occur, these essential piece of equipment will not be available until authorization is given and a delivery method determined.
This is a significant issue considering the BP “capping stack” weighs somewhere around a half million pounds. Reports indicate there are no cranes in Cuba capable of lifting such a piece of gear that massive on to a ship.
3) The deepwater drilling experts in the US are not authorized to provide assistance to Cuba in case of a disaster.
4) All the training programs that have been developed post-Macondo are not available for Cuban nationals. In fact, any training that will result in a professional license or certification is off limits to Cubans.
5) Tyvek suits, the essential work-wear for HAZMAT cleanup, are not authorized to be brought into Cuba due to supposed military applications.

In addition…

The **Scarabeo 9** was classed by DNV on 19 August 2011 in Singapore, and she is due for her 1-year “checkup” on 19 August 2012, with a 3 month window on either side of that date. As expected, DNV has told us that there will be no US-based employees involved.

What sort of legal, or commercial implications might DNV face when they actually DO send someone to inspect the **Scarabeo 9**? We asked the Bahamian registry, which is the flag state for the rig, the same question about a week ago and received no response. I spoke with DNV today and they are still researching the matter.

In short however, Cuba’s access to containment systems, offshore technology, and spill response equipment is severely restricted by the US embargo, yet if a disaster occurs offshore, not only will Cuban ecosystems be severely impacted, but those of the Florida Keys, and US East Coast. If disaster strikes offshore Cuba, US citizens will have nobody else to blame except the US Government because outdated policies are impacting the ability to prepare sufficiently for real-life environmental threats. Considering Cuba waters are home to the highest concentration of biodiversity in the region and is a spawning ground for fish populations that migrate north into US waters, a Cuban oil spill could inflict unprecedented environmental devastation if not planned for in advance.

Panelists included Wayne Smith, senior fellow at the Center for International Policy and Director of the Cuba Project; William Reilly, co-chairman of the National Commission on the BP Deepwater Horizon Spill and Offshore Drilling; Dr. Lee Hunt, former IADC President; Robert Muse, Washington, DC-based lawyer specializing in Cuba; Dan Whittle – Cuba Program Director for the Environmental

Defense Fund; and Jonathan Benjamin-Alvarado, Professor of Political Science at the University of Nebraska at Omaha. **Source : gCaptain**

Inséré le 31 janvier 2013 NEWS LOGBOEK Enlevé le 01 mars 2013

Court case reveals role of negotiators in Somali pirating

It had been more than a year since Capt. Mahedo Makane turned his tanker away from the Somali coast and headed out to sea and freedom. But when he took the witness stand in a federal courtroom in Norfolk, Va., earlier this year, the ordeal he and his crew had endured was vivid in the captain's mind: Makane described how his ship had been hijacked on a muggy May afternoon in 2010 and how the mariners suffered through 10 months of stifling confinement, death threats and torture.

The nightmare finally ended, the captain said, three days after Christmas. His company had parachuted in a $5 million ransom, and the pirates had divvied up their loot. As the final two pirates stepped from the deck of the Marida Marguerite, one turned to address the crew. He was Mohammad Shibin, a smooth-talking, English-speaking Somali who had acted as the pirates' negotiator with the German shipping company. He had also helped keep the crew in line, often brutally.

As Makane, a father of three in his 50s with thick black hair and large glasses, recounted that final meeting, he looked into the courtroom at the gray-haired Shibin, who was sitting pensively at the defense table.

"You will definitely not like me to see you again," the captain recalled Shibin saying as he left the tanker that December day. "If you see me, you will hate me." The circumstances that brought an Indian ship captain, a Ukrainian engineer, German police officers and representatives of a German shipping company into a Virginia federal courtroom for the trial of the Somali negotiator are complicated, involving a second hijacking and centuries-old U.S. statutes on high-seas piracy.

But the case highlights what federal authorities say is the important and little-known role negotiators such as Shibin play in Somali piracy, which has received international attention in recent years. A U.N. Security Council report in July said that such piracy remains a "threat to global shipping" and a "humanitarian tragedy for hijacked seafarers and kidnapped hostages."

Although hijackings have declined in the past year or so because of stepped-up security precautions, attempted hijackings by Somali pirates are on the rise, international authorities say. This year, Somali pirates have successfully hijacked 13 ships and continue to hold more than 180 hostages. Multilingual, computer-savvy negotiators such as Shibin make piracy profitable, said Neil MacBride, the U.S. attorney for the Eastern District of Virginia, whose attorneys prosecuted Shibin this year.

"But for guys like Shibin, there would be fewer hijackings," MacBride said. "The six guys who seize the ship and speak no English, they need a man like Shibin to monetize the ship, its crew and its cargo." Shibin is not the only accused pirate negotiator in U.S. custody. Federal prosecutors are seeking to try Ali Mohamed Ali in the District's federal court on charges tied to the 2008 hijacking of a Danish ship. Shibin was arrested last year by the FBI shortly after he participated in the hijacking of the Quest, a U.S. sailboat on which four Americans were slain by Somali pirates. The 50-year-old former teacher - who learned English at school in the Somali capital, Mogadishu, is a father of five and formerly worked as an oil company dispatcher - was convicted of piracy and hostage-taking on the Marida Marguerite and the Quest. He was sentenced in August to life in prison. His court-appointed attorney, James O. Broccoletti, who argued that Shibin was nothing more than a humanitarian intermediary, is appealing the verdict.

Shibin's trial, which included testimony from crew members of the Marida Marguerite, fellow pirates and federal agents, as well as the playing of tape recordings of his negotiations, provided a rare account of a negotiator's work and the gruesome day-by-day life aboard a pirated ship.

The hijacking of the Marida Marguerite began May 8, 2010, in the Gulf of Aden, as the 30,000-ton red-and-white-painted tanker carrying castor oil and a gasoline additive traversed "pirate alley," an area of water between Somalia and Yemen known for its high number of hijackings, on its way from India to Rotterdam. That's when the crew noticed a blip on the ship's radar. It was approaching. Fast. It could only be one thing: pirates. Crew mates assembled on the bridge and hoped that their precautions would be enough. The ship was wrapped in razor wire, and sailors were ready to grab fire hoses to jettison any pirates who managed to board. An hour after the blip appeared, the ship's 43-year-old chief engineer, Oleg Dereglazov, turned to the stern and spotted a small skiff loaded with six men, all carrying rifles. The skiff, pounding through the waves at 20 knots, was gaining on the lumbering tanker. The pirates fired a rocket-propelled grenade that arced over the Marida Marguerite, then another. If one of the rockets hit the vessel and its volatile cargo, Dereglazov later recalled, "there would be no ship nor pirates." The ship slowed, and a sailor threw a ladder over its starboard side. The mariners watched as the six Somali pirates armed with AK-47s stepped onto the deck and headed straight for the bridge, where they ordered the captain to sail toward Somali waters. The captainrefused. A pirate took off the captain's glasses and slapped him hard across the face, making the demand plain: Comply, Makane testified, or be "physically abused." Two days later, the ship was anchored off the Somali coast, where 60 armed pirates boarded. One was Shibin, who picked up a satellite phone and contacted the representative of the shipping company in Germany. "Hello. I'm calling from the Marida Marguerite," he said before putting the captain on the line. Makane told his bosses, "They are saying if their demands are not met, they will harass us and they will kill us."

Taking back the phone, Shibin added: "I myself am not a pirate. I work for a local NGO, a human rights NGO in this area. And I volunteered to do this job because I want to save their lives, and I don't want these animals to get rid of your crew, okay?" But to the ship's crew, it appeared that Shibin was taking orders from the pirates' commanders.

Over the next few days, Shibin pressed Makane and other crew members about the value of the tanker, its cargo, its food and fuel supplies, and its ability to produce fresh water. He befriended the second officer, who provided valuable intelligence in exchange for privileges. Only then did Shibin make the pirates' initial demand. "They are asking for $15 million," he told the company representative, subtly distancing himself from the pirates. "Did you say $15 million?" asked an incredulous shipping company official. As days turned to weeks, Shibin continued to speak periodically with the shipping company; the crew lived on the bridge. The pirates roamed the ship, sipped tea and looted whatever valuables they could find. They also chewed copious amounts of the stimulative plant khat. Shibin ate so much that his belly became as round as an ocean buoy, and he soon earned the nickname "Dracula" because he only seemed to appear at night, when he was enjoying khat with the pirates.

In July, another pirate skiff approached the tanker, and a pirate asked for fresh water. The Marida Marguerite had a fuel-hungry desalinization system that removed salt from seawater to make it safe for drinking. The captain, worrying that he would waste valuable fuel to make freshwater for pirates, refused the request. "We have water which is enough for us, but we do not have water to give to other ships," he told the pirates. "You have to obey them," Shibin said.

Incensed by the captain's intransigence, the pirates dragged him and Dereglazov, the chief engineer, to different sides of the ship, blindfolded them and started shooting guns into the air. The pirates then strung them to pipes and let them hang from their arms. About a month later, Shibin instructed Makane to call his company to report that the ship was about to be handed over to a terrorist group. He allowed crew members to call their families - but only if they said they had "only 24 hours left to

live." More pirates docked next to the tanker, and Shibin told the captain and chief engineer that they had to turn over more freshwater. Again, the captain refused. With Shibin watching, the pirates dangled the chief engineer over the sea, as if he were going to be thrown overboard. They did the same to the captain. Then the pirates strapped a plastic bag over the captain's head so that Makane felt like he was suffocating. A pirate, wielding a big knife, said: "We are going to slaughter you. Now you better tell the truth [about] the freshwater."

By early September, with fuel running low, the pirates' tactics became more extreme. They stripped the captain naked, placed tight plastic ties around his genitals and locked him in a freezer. When Makane pleaded for help, Shibin smiled and turned away. By December, after scores of calls, Shibin and the German company had reached an agreement on a $5 million ransom. In the hopes of making a little extra cash for himself, Shibin forced the captain to get on the phone to praise his efforts as negotiator. "You have to understand that [Shibin] has done a lot for us," the captain said. The next day, the captain managed to call his company after Shibin stepped away from the bridge. "Nothing else has to be done for him," he told his representative. On a sunny day in late December, the pirates lined the crew members up on the deck of the ship as a small plane circled overhead, checking that they were alive. Then the plane dropped two containers filled with $5 million in cash. The hijacking of the Marida Marguerite was over. But two months later, a small group of pirates seized the Quest, a sailboat with four Americans on board, only to be intercepted by U.S. Navy warships. When the Navy urged the pirates to release their hostages, the pirates refused but provided the cellphone number of their negotiator: Shibin. Although the FBI determined that Shibin had researched the Quest and communicated with pirates about the hijacking, he never got the chance to play the intermediary. The pirates executed the four Americans when it became clear that the Navy was not going to allow them to slip into Somali waters. The killings sparked an intense FBI investigation; Shibin was arrested in a joint operation by the FBI and Somali security forces, turned over to federal agents and placed on a plane bound for America - and the courtroom where he would face the men he had promised would hate him. **Source: Independent**

Inséré le 02 février 2013 OPEN FORUM Enlevé le 02 mars 2013

MEPC (IMO) makes progress on several issues

A new Chapter 4 to MARPOL Annex VI was adopted at last week's IMO MEPC 62 meeting laying down the law on EEDI.

This calls for all new ships of 400 gt and above to be certified with an International Energy Efficiency Certificate and have an 'Attained EEDI' (Energy Efficiency Design Index) that does not exceed a maximum allowable 'Required EEDI'.

The new chapter is scheduled to enter into force on 1st January 2013.

New ships were defined as:
*Those with a building contract placed on or after 1st January 2013; or
*In the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after 1st July 2013; or
*Regardless of the building, contract or keel laying date, the delivery is on or after 1st July 2015.
Vessels, which undergo major conversions are also subject to the EEDI requirement to varying degrees.

All ships are also required to be provided with a Ship Energy Efficiency Management Plan (SEEMP) containing procedures to improve the energy efficiency of a vessel's operation.

However, the new Chapter 4 also allows an administration to waive compliance with the EEDI requirements for new ships that are contracted, keel laid, or delivered, as appropriate, up to four years after the above mentioned dates.

Required EEDI baseline values are provided for seven types of ships, including all tanker types for a range of deadweight tonnages.

The allowable EEDI values reduce in three 10% increments for new ships built over a period of 12 years. For example, the allowable EEDI for a ship contracted for construction on or after 1st January 2025 will be 30% lower than for the same ship had it been contracted for construction on 1st January 2013.

Vessels, which have diesel-electric propulsion, turbine propulsion, or hybrid propulsion systems are exempt until such time as the method of calculation of attained EEDI for these types of vessels is established.

MEPC also clarified questions raised by IACS by issuing an MEPC circular that removes the ambiguity concerning the possible retroactive nature of resolution MEPC.187(59), which entered into force on 1st January 2011.

This circular allows for an interconnection between the sludge tank discharge piping and bilge water piping using common piping leading to the standard discharge connection, which had been inadvertently removed in MEPC.187(59).

The only other connections that are allowed are manually operated valves to drain settled water from sludge tanks to the oily bilge water system.

ABS, which provided this round up of last week's events, said that this circular is consistent with its practice, which held in abeyance implementation of the retroactive provisions in MEPC.187(59) because the class society said that it understood that such provisions were unintentional.

Turning to ECAs, the current US/Canada ECA, which requires the use of 1% sulphur fuel oil on 1st August 2012, reducing to 0.10% on 1st January 2015, is now joined by an additional ECA adopted by MEPC. This includes the Caribbean waters surrounding Puerto Rico and the US Virgin Islands, which vary between 20 to 40 miles offshore. The additional ECA requires the use of 1% sulphur fuel oil on 1st August 2014, reducing to 0.10% on 1st January 2015.

The NOx Technical Code was also revised to allow for an alternative approach (Scheme B) to be used to certify engines fitted with selective catalytic reduction (SCR) units, which - due to technical or practical reasons – cannot be pre-certified either on a test bed, or on board following the standard code requirements.

Under Scheme B, modelling procedures are used to estimate the effect that the proposed SCR design and arrangement will have on the NOx emissions from the engine to which it is to be fitted. This modelling is to be validated by testing that can be undertaken using a scaled bench top mock-up operating on synthetic exhaust gas.

The entire engine group (engines that require minor on board adjustments and modifications) would not be approved until the NOx reduction efficiency, relative to the parent engine NOx technical file, has been demonstrated with the SCR installed on board.

Due to the uncertainties associated with the robustness of the modelling process and in order to ensure that the particular installation layout has not compromised the performance, owners should consider requiring that an acceptable NOx reduction efficiency value is established for each engine fitted with an SCR certified via the Scheme B approach – a provision which was removed from the newly adopted MEPC resolution.

As for ballast water, MEPC adopted new procedures for approving other methods of ballast water management in accordance with regulation B-3.7 of the BWM Convention.

This ensures that the other methods approved by an administration are capable of at least achieving equivalence to the level of protection provided by the standards of the BWM Convention.

One such system to be evaluated is VIM's AUBAFLOW, which allows sea water to flow through a vessel as it moves through the water. The flow through the double bottom is driven by the pressure created as it moves through the water.

MEPC agreed with the IACS interpretation on the application of the D-2 biological standard to ships with a ballast water capacity of 5,000 cu m or more that were/are constructed in 2009, 2010 and 2011.

These ships will be required to comply with the D-2 standard not later than the first intermediate or renewal survey, whichever occurs first, after the anniversary date of delivery of the ship in 2016 - a few administrations had understood that these ships needed to comply with the D-2 standard on 1st January 2016.

Also agreed was the IACS proposed revision of the guidelines on design and construction to facilitate vessel sediment control (G12) contained in resolution MEPC.150(55) that the design of ballast water systems should provide for a high sea suction point on each side of the vessel. Prior to this, the G12 guidelines recommended installation of high sea suction points on each side of the tank.

MEPC also approved a new circular on guidelines for the carriage of blends of petroleum oil and bio-fuels, which distinguishes requirements for bio-fuel blends containing:

*75% or more of petroleum oil – this is subject to MARPOL Annex I carriage requirements.

*More than 1%, but less than 75% of petroleum oil – this is subject to new MARPOL Annex II carriage requirements as contained in the circular.

*1% or less petroleum oil – this is subject to MARPOL Annex II carriage requirements.

*Physical blending (mixing), as opposed to any chemical processing, is prohibited except for OSVs

Inséré le 04 février 2013 NEWS Enlevé le 04 mars 2013
Lloyd's Register (Part IV)

1919-1939

The turbine steamer *Rex* held the Blue Riband from August 1933 to 1935 with a crossing of an average speed of 28.92 knots. Built by S.A. Ansaldo Cantieri Navali, Sestri Ponente in 1932, she was classed by both Lloyd's Register and RINA.

The British fleet was still the world's largest after the war but in the early 1920s it accounted for just under a third of world tonnage, rather than half in 1914. The inter-war expansion of world shipping occurred during the 1920s, with overall tonnage reaching around 68 million tons. It remained much the same throughout the depressed years of the 1930s. Expansion was greatest in the US fleet, which remained the second most important in the world, fostered by huge government assistance. Japan surged to third place, almost doubling its fleet to 5.6 million tons by 1939. Norway, the leading Scandinavian shipping nation, became the fourth largest national fleet. In contrast, British shipping grew not at all, so by 1939 it had shrunk to slightly more than a quarter of world tonnage. British shipbuilding suffered as well. After the record tonnage of the immediate post-war years, the volume of shipping completed in the UK collapsed from 2.4 million gross tons in 1920 to 800,000 in 1925. Output slumped further in the early 1930s and in 1939 stood at less than half the tonnage produced in 1914. It was not just the downturn in world trade which hit British shipbuilders; they were also outpaced by foreign rivals.

Yet in 1939 Lloyd's Register still classed more than 46 per cent of the world's shipping, a clear demonstration of the advantages of the Society's worldwide network and connections. In 1925-26, for instance, overseas ships accounted for almost half the tonnage classed by the Society.

Recognising the benefit gained from the National Committee formed in the USA in 1916, similar committees were formed after the war -in France (1919), Sweden (1920), Japan (1921), the

Netherlands (1921) and Denmark (1930). In most countries where this happened a Principal Surveyor was placed in charge, recognising their importance.

Two of the notable turbo-electric passenger liners built during the 1930s were P&O's *Straithaird* shown here, and *Strathnaver*, both built to class.

Lloyd's Register also returned to parts of Europe which were now independent nations in their own right, such as Czechoslovakia and Yugoslavia, as well as countries which were virgin territory, including Poland and Switzerland. Some of these were states without a coastline where resident surveyors were appointed to inspect local steel foundries and engine factories. Surveyors with the power to approve plans were appointed in Paris, Kobe, Trieste, Gothenburg and Rotterdam.

Despite Britain's hostility towards the newly formed USSR, the integrity of Lloyd's Register led to an invitation from the Leningrad State Shipbuilding Trust to survey a whole range of vessels, passenger ships, tankers, timber carriers and reefers, being built at yards in Leningrad (now St Petersburg) and in the Ukrainian ports of Nicolaieff and Mariupol. A team of seven surveyors under J S Helyer was sent out in 1926 and returned in 1929.

The determination with which Lloyd's Register fought its corner during tough times was illustrated in Japan. By the early 1930s there were seven British surveyors and seven Japanese surveyors in five offices across the country. National politics did not favour Lloyd's Register nor did it help that it had rebuffed Teikoku Kaiji Kyokai (TKK, the Japanese society) in its attempt to seek cooperation in 1919. Instead TKK turned to BC, as ABS had done only a few years earlier. James Foster King was instrumental in concluding this agreement. He had little time for the Society which at the time was suing him and BC over a patent matter. It was said that at a dinner in his honour held in Tokyo in 1920, he refused to make a speech until the guest representing Lloyd's Register, whom he described as 'that dog', had been asked to leave. By 1936 James Montgomerie was writing how 'the flame of economic nationalism burns fiercely in Japan today'. For instance, the Japanese government insisted ships classed by Lloyd's Register should also have a government survey, from which TKK-classed vessels were exempt. Rising militarism severely hindered the movement of surveyors not only in shipyards but in entire ports. Even so, in 1939 Lloyd's Register classed more than 90 per cent of all foreign-going tonnage built in the country.

Sir Joseph Isherwood's system of longitudinal framing became universal in the construction of tankers and other types. *Arcwear* was the first to be built using both longitudinal framing and Isherwood's 'Arcform' hull, which in cross-section resembled a barrel and was claimed to offer better capacity and lower fuel consumption compared to conventional forms.
Reproduced by kind permission of the National Maritime Museum

The self-belief of Lloyd's Register in its influence for the better around the world was reflected in the comments of the author of the 1934 history who remarked that the national committees were a means of creating 'a greater degree of mutual co-operation, a freer interchange of thought and service among the nations'. In this vein, the Society — particularly James Montgomerie who became

Navigazione Generale Italiana's *Augustus* was the most powerful motor ship in the world when completed to dual class with RINA in 1927. *Reproduced by kind permission of Roger Jordan*

Chief Ship Surveyor — played a key role in the International Shipping Conference of 1921. This eventually led to the International Load Line Conference of 1930, also held in

London, which resulted in the first international maritime convention. Most of the nations adopting the convention authorised Lloyd's Register to act on their behalf in assigning load lines. At a time when shipping was utterly depressed, the work involved in implementing the convention kept the Society's staff extremely busy, in a phenomenon known as the 'Freeboard Rush'. One clerk, Pat Dowden, recalled that a special department was formed at 71, Fenchurch Street, in 1932 to handle the work and clerks regularly worked from nine in the morning until ten in the evening. Only Saturday afternoons were exempt (for cricket matches). A week's extra holiday in summer was granted in lieu of overtime.

In 1922 the Society had signed a reciprocal agreement with Registro Italiano Navale. The 33,000 gross tons Augustus, classed by both societies in 1927, was a perfect example of the inter-war rise of the motorship, driven as she was by two powerful marine diesel engines, totalling 28,000 brake horse power (bhp). To keep abreast of progress in this and other areas, the Society continued to revise existing rules and formulate new ones.

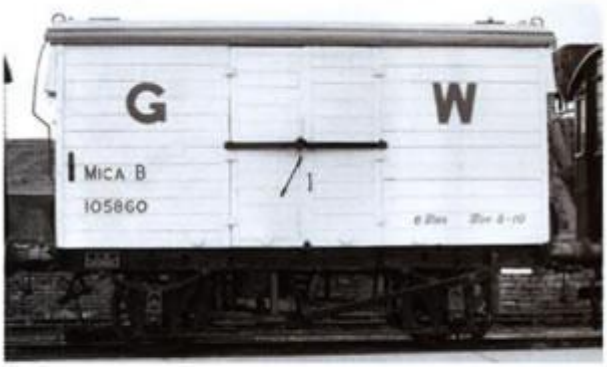
Between the wars, when air travel was in its infancy, it was the passenger liner that was responsible for the movement of vast numbers of people around the world. The *Queen of Bermuda* and *Monarch of Bermuda* operated a shuttle service between New York and Bermuda. *Reproduced by kind permission of the Ian Boyle Collection – www.simplonpc.co.uk*

The difficult economic conditions between the two world wars had an undeniable impact. The Society was forced to cut costs even though the policy had been to build up reserves to tide the organisation

through bad times. In the 1920s salaries were cut for the first time and in 1932 a number of unmarried surveyors were paid off with a small annuity and the promise of re-employment once the outlook improved.

By 1924 the Society's industrial inspections included structural steel for buildings and bridges, railway rolling stock, steel rails and other equipment, pressure vessels, pipework, diving gear, turbine forgings, castings and fabricated parts for electric generating stations.

The splendidly named Horatio Nelson Pemberton was among them, taking his £100 and finding a place on a training course for welding engineers with the shipbuilder Vickers-Armstrongs Ltd. Nine months later the Society called him back and he was asked to help with the formulation of guidelines for work on fusion welded pressure vessels, a world first when they were issued in 1934. He would later become Chief Engineer Surveyor. In 1933 there were further temporary cuts in salaries. In the interests of fairness, this was done on a sliding scale, with those earning less than £250 a year retaining their full salary, while those earning in excess of £750 a year suffered a reduction of ten per cent. By the late 1930s, following several years of poor returns on investments, there was also a significant deficit on the Society's pension fund.



Inspection of refrigerated rail cars was a development from inspection of refrigerating machinery at sea and on land in cold stores.
Reproduced by kind permission of Nick Baxter

In 1931 20 per cent of shipping worldwide was laid up. The Society was compelled by the reluctance of owners to pay for surveys in such circumstances to agree that ships laid up could continue in class without survey for an extra year. In 1932-33 the number of new vessels classed by Lloyd's Register was the lowest number for 50 years and the Society reported that many ships were being broken up. The number of surveyors in the USA fell sharply after the peak of the First World War, dropping to 32 across 16 offices in 1939. The Society lost money every year in the USA from 1929 to 1936.

As Lloyd's Register celebrated the centenary of the reconstitution in 1934 with a series of events around the world, including a dinner at London's Savoy hotel, it could take comfort from its premier position among classification societies. What could not have been anticipated was the impact other trends, as yet barely visible, would have on the future of the Society. Repeated requests for surveyors to inspect cold stores around the world led to a brief involvement with refrigerated rail cars, and the Society was also involved with the development of a technologically advanced railway locomotive.

With the enthusiastic support of the aircraft industry and insurance interests, the Society formed an Aviation Advisory Committee in 1930.
Reproduced by kind permission of the Vintage Ad Gallery

An aviation inspection department was formed in the late 1920s although this proved to be a dead end as such responsibilities were ultimately transferred to a government organisation in 1937.

Lloyd's Register also extended its onshore inspection activities to cover land boilers (1923) and the production of plant in Europe for use in the construction of a South American power station (1930). Much more important for the future was the request in 1936 from one client for the inspection of a major oil refinery in the Middle East. In 1939 all this type of work accounted for just half of one per cent of the Society's operations, and all told the non-marine activities of Lloyd's Register amounted to just two per cent of the organisation's income. Yet this was the genesis of a business which would develop extensively and rapidly after 1945.

1939 - 1945

Lloyd's Register made preparations well in advance of what was expected to be a new type of conflict. Contingency plans were drawn up in 1938 to increase the powers delegated to key members of the General Committee. With war increasingly likely, the Society acquired High Close in Wokingham, well away from London, and rented Worting, another property nearby, to accommodate records and staff from 71, Fenchurch Street.

The staff of High Close in 1940 before many women had been taken on. 'Polly' Eccles' wife acted as housekeeper looking after their welfare. The staff had to work long hours, seven days a week, but still found time for socialising and parties. Reports and documents were ferried between Wokingham and Fenchurch Street by despatch riders or shooting brake. Such was the importance of the work the government arranged for an open telephone line for two hours in the morning and two hours in the afternoon. The staff are left to right, back row standing: Henry Barnes, Dennis Cripps, R E Fisher, 'Snips' Parsons, Jack Somerville, Trevor Powell, Ron Pussey, John Huxter, Basil Moor, Morris Milner, George Perrier, Anthony Reid, Ollie Burke: middle row seated: Mr Nettleton, Mrs Eccles, 'Polly' Eccles, Alex Johnston, James Montgomerie: front row seated: Douglas Mayo, John Moss.

British staff serving overseas stayed in post until the last possible moment. Rex Shepheard and his family had been in Hamburg since 1935. The suicide of the family's Jewish doctor and his wife brought home to the family the terrible reality of the deteriorating political situation. Bullied at school, Shepheard 's sons were despatched to the safety of boarding school in the UK. The family suspected their domestic staff were spying on them and Shepheard found working in the shipyard increasingly uncomfortable. His family reached England in early August 1939

while Shepheard and his fellow surveyor, Freddie Cocks, in tennis gear and plimsolls, left two weeks before war broke out. James Dykes had been interned for much of the First World War in Fiume. Based in what is now Gdansk, he also managed to leave with his family before war was declared. Staff who had returned from Italy were initially sent back because of uncertainty over Mussolini's support for Hitler. John McAfee had left Trieste in July 1939 but was ordered back in late October. In May 1940 he was part of a small group including the Principal Surveyor for Italy, James Ormiston and his wife, once more making their way back to England. Travelling through France in difficult conditions, with roads choked with French families fleeing south, they reached Bordeaux, where they were fortunate to obtain a passage on a small cargo ship just as the news came through of the fall of France. McAfee recalled that 'Mrs Ormiston must have told the captain who they were as he had offered them his own accommodation'. The ship left the day before the Germans arrived.

Two surveyors did not return to the UK. In Genoa George de Caynoth Ballardie, married to an Italian, was interned from June 1940 until his repatriation in February 1943. The senior surveyor in Denmark, Jack Hodgson, was also interned following the German invasion.

Rotterdam photographed after May 14, 1940
Many of the Society's offices overseas were destroyed in bombing raids such as the Rotterdam office in May 1940 and the offices at Hamburg and Düsseldorf.
Reproduced by kind permission of the Bundesarchiv, Bild 146-2005-0003, Foto: O Ang

Local staff often found themselves in a much more difficult situation, cut off from London, and regarded with suspicion because they worked for an enemy organisation. Since the payment of wages and salaries was difficult, the National Committees in many countries stepped in to advance loans. They also took over the day-to-day running of the offices. In Holland the Rotterdam office was destroyed during a German bombing raid in May 1940. The Society's work was kept going by members of the Holland Committee and the two local surveyors, Johan Schoo and Leendert Vuijk.

Dutch surveyors came under suspicion from the German authorities who believed they were in a position to send important information across the North Sea. In fact in April 1940 the British intelligence services had asked the Society to put them in touch with surveyors overseas, especially those in Holland. Sir George Higgins, the Chairman, declined to cooperate, replying that 'it would be impossible for us to ask any of our surveyors abroad to act in the capacity you suggest'. Some Dutch surveyors went into hiding, and the Groningen surveyor, Lockwijk Wehrmeijer, was arrested and imprisoned. Even after the Germans had ordered the closure of the Society's operations in Holland at the end of 1943, Dutch staff found a way to keep things going under another name until worsening conditions made this impossible towards the end of 1944.

In Denmark, the Copenhagen office attracted little interest from the Germans but there was much less work to carry out in wartime. When survey fees no longer paid for the operating costs, the deficit was met by the Danish Committee.

In other countries, clients helped out. In Greece, for instance, the shipowners Yannoulatos Brothers made a loan to keep the local office going. In Norway, where the decline in survey work left the local offices in Oslo and Bergen short of funds, Norwegian shipbuilders agreed to guarantee a bank loan while local surveyors voluntarily agreed to cut their salaries by 20 per cent. The sole surveyor in Bergen, Soren Anton Eide, used his own savings to keep the office running. Watched closely by the Germans, he was regularly interrogated, his home searched and his telephone tapped.

The occupation of Norway left a number of Norwegian ships in neutral Swedish ports. The best of these were tasked with breaking out of the Baltic to join the Allied merchant fleet. In case they were intercepted, plans to scuttle them were drawn up by Stanley Townshend, the Principal Surveyor for Sweden, and his team. The five chosen vessels reached the UK successfully in January 1941, carrying 25,000 tons of ball bearings, steel tubing and machinery.

Sweden was left isolated by the occupation of Norway and communications became even more difficult as the war progressed. Eventually a Mosquito courier plane was deployed to fly at night between Sweden and the UK but letters were the only mail which could be carried. The occasional passenger spent the flight in the modified bomb bay. These restrictions led to the Gothenburg office taking over many of the responsibilities previously exercised by London, including the approval of plans and issuing certificates of class. Stanley Townshend and his staff examined 3,250 hull plans and 2,000 machinery plans during the war. When decisions could not be made locally, the Chairman of the Swedish National Committee, Consul-General Gunnar Carlsson, would travel to London for instructions. The flight to Scotland was a hazardous excursion, often taken in a B-17 Flying Fortress bomber. On the night of November 17, 1944 Carlsson and his son Per were among 14 passengers bound for Prestwick. The plane developed engine trouble soon after take-off. Another engine caught fire while flying over Norway and had to be closed down. The cargo of ball bearings had to be jettisoned over the North Sea since too much fuel had already been consumed. The plane was diverted to the Shetland Islands where the pilot, Captain Marshall Lindholm, skilfully guided the plane down. A member of the ground crew was heard to comment, 'bloody fine landing'.

In France the Society's activities were severely curtailed. The Marseilles office was kept going by a Belgian surveyor, Gustaav Valckeneers. As a refugee, equipped only with a Belgian identity card, he was constantly concerned he would be denied consent to carry on working. He became widely respected locally and the office not only managed to pay its way but also helped to subsidise the cost of the office in Paris. Still at work when Marseilles was liberated in October 1944, Valckeneers was transferred back to Antwerp, where he later became Principal Surveyor for Belgium.

The Society's surveyors in Germany carried on working after they lost contact with London, mainly conducting inspection work at German steel factories alongside some classification work. With the tide turning against Germany, Allied bombing raids destroyed the offices in Düsseldorf and Hamburg but staff managed to rescue most of the important records.

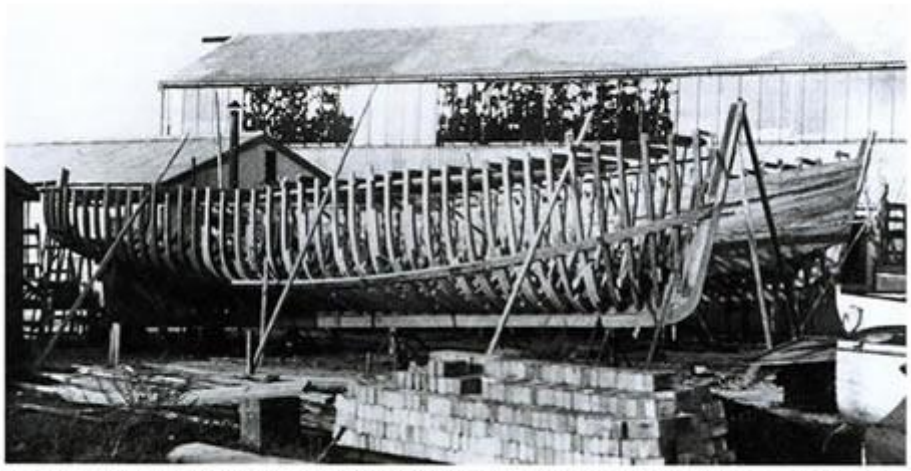
Following the declaration of war, Sir George Higgins and his Deputy, Ernest Jacobs, began travelling twice a week to Wokingham. After the Blitz began in late 1940, the General Committee started meeting only once a quarter. At Fenchurch Street, the basement became a shelter once again while the workers at the Printing House took refuge in the converted basement of a nearby warehouse. A number of staff were dispersed to Glasgow, Liverpool and Newcastle. James Montgomerie and five members of his team were among those transferred to Glasgow where they could be close to the Admiralty's Merchant Shipbuilding Department. Each week Montgomerie, then approaching 70, made the arduous journey to meet the Chairman in Wokingham. He eventually returned to London in 1943 to join other staff who had already returned to Fenchurch Street after the Blitz.

While surveyors were in reserved occupations, clerks were not and gradually women were recruited to fill the growing number of vacancies left at head office by those who were called up. Among them was Joan Frost, whose elegant handwriting graced many of the classification certificates issued

during the war, winning compliments from the Chairman. She recalled having to sign the Official Secrets Act and the work carried out at Wokingham was considered so important that consent was given to maintain an open telephone line to London for two hours every morning and every afternoon. Some 200 women were also appointed to positions in the outports. Restrictions were again placed on the use of the Register Book and the Society relaxed the requirements for the survey of existing vessels during wartime. The authorities also considered it expedient to relax load line regulations to enable vessels to carry more cargo, which gave work to Lloyd's Register as the assigning authority. Rules were similarly relaxed for the installation of refrigeration plants on board ships but quality proved so sub-standard that the Society felt compelled in many cases to issue a 'Qualified Certificate'.

The first air raid of the Blitz on September 7, 1940 claimed the life of a messenger boy. Ron Bond was only 14 when he was killed with his mother and three sisters after the school in which he and his family were sheltering received a direct hit. His brother Ted, another messenger boy, survived. He was among the staff at Fenchurch Street who would take turns on fire watching duty, playing his accordion for the singing sessions which helped to pass the dark, cold night-time hours. Their vigils paid off when an incendiary bomb that landed on the roof was extinguished by Stanley Drucquer with his sand bucket. 71, Fenchurch Street, despite the devastation all around it, had escaped harm again as it had during the First World War.

Seven of the Society's staff lost their lives on active service. Among them was Arthur Jones, the cricket club's leading fast bowler, killed at Singapore in 1942. Others were more fortunate — George Morgan, serving with the RAF, was shot down and held in Stalag Luft Ill, later famous as the camp of the Wooden Horse and the 'Great Escape' where he was a member of the escape committee.



Construction of a motor fishing vessel (MFV) in 1944 at the boatyard of Tom and George Cardnell, Maylandsea, Essex. Their boatyard was typical of the smaller yards building vessels under the Fairmile scheme during the war.

A number of surveyors were seconded to the Sea Transport Department of the Board of Trade, where they oversaw the conversion of ships into troop transports, hospital ships or merchant cruisers. Others helped to carry out surveys on requisitioned shipping. The work was intense, twelve hours a day, seven days a week, and took its toll on the health of several members of staff. With Lloyd's Register again involved in supervising the construction of a variety of craft for the Admiralty, a group of staff were seconded to the office of the Director of Naval Construction in Bath. The Society supervised the construction of more than 2,000 naval craft, including the 'River', 'Loch' and 'Bay' class frigates, the 'Flower' and 'Castle' class corvettes, minesweepers, armed trawlers, landing craft, tugs, salvage vessels and lighters. Some staff were seconded to help run companies making naval craft. In 1939 Gordon Scantlebury became production manager of the Fairmile Marine Company, which turned out wooden motor torpedo and gun boats, motor fishing vessels for Admiralty use and launches. Since few of these men returned during the war, Lloyd's Register was under increasing pressure to meet its commitments.

One of these was the need for more surveyors in North America. After the visit of a British mission in September 1940, a senior surveyor was sent out to advise on the layout and construction of two new shipyards at Richmond in California and at Portland in Maine. Rex Shepheard and Freddy Cocks were among those despatched to supervise the construction of 'Ocean' class standard cargo vessels. The design, based on the Empire Liberty, built by the Sunderland yard of J L Thompson, was later re-engineered for mass production after the USA entered the war, and 2,710 'Liberty' ships were built. To speed up production, welding was used to put many of them together but several vessels showed up flaws at sea. Shepheard, an expert in welding, was among those involved in the subsequent investigation, which was concluded only after the war.

The launch of a ship is a great occasion and many of the wives of Lloyd's Register surveyors working at Richmond and Portland were honoured to be asked to be 'godmothers', including Elisabeth Cocks, daughter of surveyor Frederick Cocks who launched *Ocean Vagrant* in 1942.
Reproduced by kind permission of the family

The Society also oversaw the construction of some 500 ships built in Canadian yards. The testimonial later given by an executive of the Canadian national shipbuilding organisation not only contained praise for the Society but also hinted at the difficulties wartime work involved: 'unnecessarily rough words were spoken at times by people who were unaware of the complications involved but we did manage to get these personal frictions worked out ... few people know what a grand contribution Lloyd's and her fine staff made to the eventual victory'.

The Japanese declaration of war on the USA in December 1941 brought a temporary end to the work of Lloyd's Register in Japan. The National Committee had been dissolved in March 1941 and the last of the British staff left in May the same year. The Society's affairs were left in the capable hands of ship and engineer surveyor Masawo Kamakura who, with members of the former committee, wound everything down as rapidly and efficiently as possible. Kamakura kept the Society informed by sending messages back to London through the Argentine embassy. He rejoined the Society in 1948.

The entry of the Japanese into the war altered circumstances for British staff serving in the Far East. A number were interned in Japanese prisoner of war camps, an experience which impaired the health of several of them, although all of them survived. One, Frank Bowie, worked on the notorious Burma Railway, his weight sinking to five stone.

The war in the Far East made Australia an ideal location to construct ships for the Allies and, just as the Society had done in North America, a senior surveyor, Thomas Pratt, was sent out to the new yard being constructed at Whyalla on the Spencer Gulf in South Australia. It was incredibly remote, relying on equipment and materials that had to be shipped over distances of 1,500 miles or more. Water was piped to the site from 230 miles away, helping the infant settlement of shacks and tents to develop gardens, a cricket pitch and even a roughly hewn golf course. The first vessel to be completed to class was a cargo ship, the River Glenelg, completed in March 1944.

In New Zealand Dunedin became a naval repair base, mainly for the US Navy, in 1943 and the local surveyor, George Martin, became the yard's naval engineer overseer in addition to his work for the Society.

Surveyor T D Scott was seconded to the UK Ministry of Supply to inspect the 12TP diesel engines being manufactured for tank landing craft by Paxman Diesels. *Reproduced by kind permission of the Paxman Archive Trust*

Robert Pritchard (left) and James Grandison were seconded to the Ministry of War Transport and sent to Germany as soon as the Allies had secured Hamburg in order to advise on wreck removal from Hamburg harbour and survey the condition of the ships to be requisitioned by the Allies. They were issued with service uniforms and revolvers to protect themselves, as there was still sporadic fighting.

As the war progressed in Europe, Lloyd's Register was quick to return staff overseas. Surveyors were despatched to Mediterranean ports when Italy joined the Allies in 1943 and to ports in northern Europe after D-Day in 1944. Lloyd's Register had inspected many of the components manufactured around the UK for the Mulberry Harbours used for the D-Day landings and the PLUTO (Pipe Line Under The Ocean) system which provided fuel after the landings had taken place. Other inspection work included canvas fire-fighting hose for the French government before the Occupation, nearly 3 million tons of shell steel and steel for buildings and bridges, and 4,500 diesel engines for use in landing craft.

As the Allies reached Germany, and the war came to an end, surveyors were working in several German ports. They advised on the raising of wrecks to enable the ports to be re-opened and assessed the seaworthiness of requisitioned German ships due to be sent to the UK. As the Society began making arrangements to honour the unpaid salaries and pensions of overseas staff, it was time to begin planning for peace once more.

This article is copied from the Lloyd's Register Album.

Inséré le 06 février 2013 BOOKS Enlevé le 06 mars 2013

Raasdonders & Bramstaglopers

B O E K B E S P R E K I N G door : Frank NEYTS

Bij **Lanasta** verscheen recent "**Raasdonders & Bramstaglopers**", geschreven door **Evert Stel**. Het is het derde boek van Evert Stel. Op het wad of in de stad, van Delfzijl tot Denemarken en verder. "**Raasdonders & Bramstaglopers**" is een heerlijk vlot boek over leven op en met het water. Inclusief de spannende vaaravonturen is dit boek heerlijk leesvoer voor ieder die van het water houdt. Ideaal om donkere winteravonden door te komen! "**Raasdonders & Bramstaglopers**" (ISBN 978-90-8616-102-7) werd op handig formaat als softback uitgegeven. Het boek telt 260 pagina's en kost 18.95 euro.

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AIS – towards the future

Automatic Identification System (AIS) technology is now a mainstay of modern navigation, with its use spreading to applications far beyond those originally envisioned – some better than others. Dr Andy Norris looks at the strengths and weaknesses of modern usage of AIS, and how it might evolve in the future

In principle, the Automatic Identification System can provide excellent navigational data and is also a unique source of information to support many governmental and private shore-based activities.

The beauty of AIS is its universality. In fact, it is officially named as the Universal AIS (UAIS) but this nomenclature has not survived in everyday use, even though it has probably become more universal than ever originally envisaged.

For instance, in the mid 1990s when AIS was being conceived, who would possibly have thought that AIS apps with quasi-global coverage would be available at virtually zero cost to any smartphone user? In fact, probably few had even realised that AIS data would get used beyond ships, coastal stations and national security departments.

Its present-day universality has made it of huge benefit to shipping offices and dockside facilities, as well as providing invaluable statistical data to enhance routeing facilities and to improve environmental protection.

Unfortunately, use has also extended to crime-related activities, including piracy. The benefits of universality surely greatly outweigh its possible disreputable uses but it does mean that special precautions concerning AIS need to be taken by vessels in certain situations.

However, despite the benefits of the present-day system it does suffer from a significant drawback that generally prevents the concept being used to its fullest possible extent. This is the relatively poor integrity of its transmitted data – which especially compromises its use as a navigational tool.

When first introduced, the inherent integrity issues of AIS were underlined by numerous erroneous transmissions from ships, mainly resulting from actions or, indeed, lack of actions by inadequately trained bridge staff, in many cases exacerbated by improperly performed installations.

Linked to the additional inadequacy of AIS for many aspects of navigation when used solely on an IMO-defined Minimum Keyboard and Display (MKD), the system created a very negative initial impact on many shipborne users. It is only when AIS data is displayed and used knowledgably on other navigational monitors, especially radar, that its navigation benefits become really useful.

Lack of integrity

There are a number of integrity issues. A major one is that the navigational inputs into the transmitting AIS – the dynamic data – are from individually operating sensors, which are not normally checked for consistency by any automatic system.

Another is that the system is reliant upon operators remembering to correctly input voyage related data, such as the destination port. Furthermore, the static data, such as the vessel's name, IMO number and GNSS antenna shipboard position, has to have been correctly set and maintained.

Monitoring by coastal authorities has considerably improved data accuracy since the early days of AIS, particularly because many impose fines if action is not taken to correct anomalies that have been highlighted to the vessel.

Even so, the system remains vulnerable to newly arising data errors and inaccuracies, which can occur at any time.

Another issue that can affect the integrity of AIS is that it is technically quite easy to generate spoof signals, which, in the hands of subversive users, can potentially play havoc with the system, such as by generating false targets.

All these inherent integrity issues have led IMO from the outset to caution its use for making collision avoidance decisions. AIS remains unmentioned in the COLREGs, in effect highlighting its relatively poor integrity – although Rule 7 implicitly requires AIS information to be used in assessing whether a risk of collision exists.

Of course, radar also has integrity issues, such as when targets are obscured by clutter and with operator set-up problems. However, problematic scenarios are generally more easily recognised by users, not least because its operation is entirely self contained and does not rely on 'cooperative targets' – a highly significant advantage over AIS.

Despite the real concerns for the integrity of AIS data it is perhaps ironic that its inherent accuracy and information content for vessel-to-vessel encounters normally easily beats that of marine radar.

For instance, its range resolution and accuracy is typically around a few metres, compared to tens of metres for a standard radar. The latency of target turn information from AIS is normally of the order of a few seconds but is generally a minute or more from tracked radar data.

AIS also gives a lot of extra information about the target that is not available to a radar based system and the use of VHF frequencies means that vessels separated by a moderate landmass can often still receive AIS signals from each other, whereas their mutual radar vision would be blocked.

Of course, it is the combined and intelligent use of visual, radar and AIS derived information, together with other appropriate navigational data, that maximises the total benefits and minimises the possibility of an unnoticed integrity failing in any one system.

In particular, it highlights the reliance that can be given to the perception of any actual situation, enabling decisions to take into account the degree of uncertainty.

As a note of concern, some vessel traffic systems only have AIS information available to them, at least in some sectors of their coverage. Allegedly, this does not stop all VTS operators from giving ships detailed instructions based solely on such data – or is this hearsay?

AIS evolution

The future of AIS is intimately linked to that of e-navigation, which is based on relevant high integrity information always being available to ensure the safe passage of vessels.

The navigational integrity inherent in e-navigation thinking will ultimately ensure that the dynamic data input into AIS will be automatically assessed and perhaps even tagged with an integrity message.

In addition, a separate onboard receiving system could continuously and automatically make integrity checks on the actually transmitted data from own ship. This would also flag up any nearby system attempting to spoof own ship's transmissions.

The increased integrity possible could even make AIS become the prime tool for avoiding ship-to-ship collisions and may considerably enhance the possibilities for a greater element of 'sea traffic control' in crowded waters.

It is easy to dream up additional AIS services, especially with e-navigation in mind, and a host of new messages are already becoming available, including those for AIS Aids-to-Navigation. However, the currently allocated bandwidth will quickly become saturated in some parts of the world if all possibilities are used in earnest.

In addition, as more and more AIS Class-B users come on line, they put considerable extra pressure on the network, which is likely to limit the effectiveness of these transmissions in some areas.

However, it is in everybody's interest for small craft to become AIS users, despite it requiring special techniques to reduce the display clutter that will inevitably arise. This particular topic is being specially discussed at a seminar being held by the Royal Institute of Navigation at Trinity House, London, on the 8th November. For all these reasons there is already talk about increasing the number of VHF channels dedicated to AIS. The current system is very cleverly thought out for today's use, giving adequate performance to all users but using miniscule bandwidth resources.

However, it is based on messages being compact and in the more distant future, as more and more information is considered necessary, it may require a fundamental rethink.

In essence, AIS is just an automatic digital communications system that requires good availability and, in particular, relatively low transmission latency for some of its critical navigational data.

Perhaps into a mature e-navigation future it can just become high priority data sent on future standard communications channels, whether satellite or terrestrial based.

In principle, because the bandwidth is not so highly restricted as present day AIS, such channels offer very high levels of data security, greatly reducing the opportunities for spoofing.

Aspects such as latency would have to be carefully controlled but current thinking on advanced digital communications systems recognises the need for giving data priority to certain categories of message.

In fact, only a small class of AIS messages need such high priority.

It is its transmission cost, rather than fundamental technology and knowhow, that prevents this prospect becoming viable in the relatively near future.

But data costs are ever reducing ...

DS DigitalShip

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Tank cleaning – a double edged sword!

Used correctly it can be and indeed often is, a very effective means of preparing a vessels' cargo tanks from one particular cargo to the carriage of another.

Used incorrectly, it can waste significant resources, be very ineffective, and in some cases even lead to premature failure of the cargo tank coatings*.

What is tank cleaning, and what is its purpose? As the name implies tank cleaning is an activity which takes place inside the cargo tanks of a vessel. The intention is to prepare (clean) the tank(s) for the

next cargo, after the previous cargo has been unloaded, always with the primary objective of trying to prevent or minimise the contamination of the subsequent cargo by the previous cargo.

The type of tank cleaning employed will be dictated by the following:

- The nature and properties of the previous cargo.
- The nature and properties of the subsequent cargo.
- The time available for tank cleaning.
- The nature and properties of the cargo tank coating.

Cargo nature and properties

Many liquid cargoes will fit into one of two broad categories and will tend to be classified either as 'Absorbing' or 'Adsorbing' cargoes. Absorbing cargoes are those which will be absorbed into the matrix of the coating, whereas adsorbing cargoes are those which will be adsorbed to the surface of the coating.

Some cargoes, for example solutions of resins in organic solvents, will be both absorbed and adsorbed. Knowledge of the properties of cargoes and how they interact with coatings is fundamental in selecting the correct tank cleaning approach.

Tank cleaning time available

One of the most precious resources in all businesses is time and bulk liquid shipment by sea is no exception to this. Time spent on tank cleaning, essential though it is, reduces the number of revenue earning days for the vessel and one danger is that parts of the tank cleaning process may be sacrificed in order to save time, which actually could result in a cCargo contamination claim.

Alternatively, the tank cleaning operation may be compressed into the time available, which may mean that the 'correct' cleaning operation will have been changed or intensified to a more aggressive method, without due regard to the nature and properties of the coating.

Cargo tank coating's nature and properties

All cargo tank coatings, whether organic or inorganic, will either absorb or adsorb (or in some cases do both) different cargoes. In this discussion, consideration is only given to organic cargo tank coatings, of which there are a number of different generic types:

- Epoxy Phenolics (Epoxy Novolacs).
- Epoxy Amine.
- Epoxy Isocyanate.
- Silicone Epoxies.
- Polyurethanes.
- Vinyl Esters.

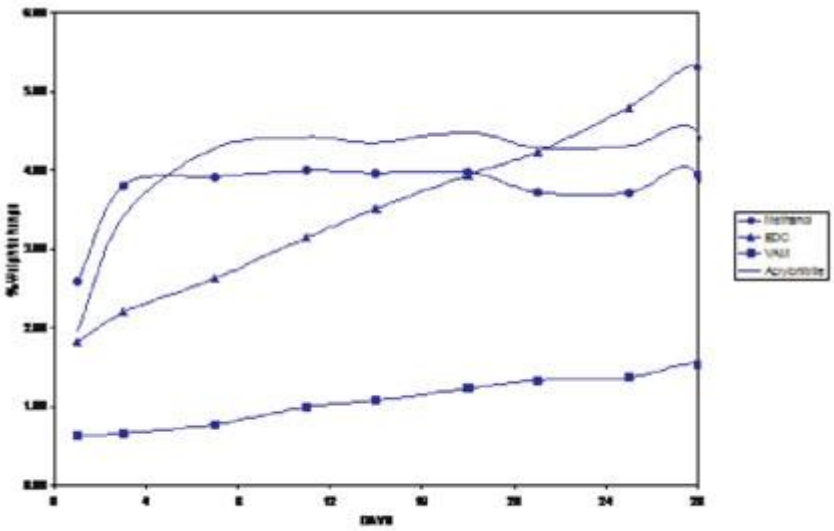
Adsorbing cargoes will stick to the surface of all these generic coating types and will tend not be absorbed into them. Absorbing cargoes will by definition be absorbed into the matrix of the coating.

The absorption may vary between each generic type of coating, and between coatings within each generic group. This is due to the chemical differences between the generic groups and also the formulation differences within each generic group.

The following graph shows the absorption of four different chemical cargoes (methanol, vinyl acetate monomer, ethylene dichloride and acrylonitrile) into an epoxy phenolic coating and illustrates very well, the fact that different cargoes are absorbed to different extents in the same coating. The extent to which absorbing cargoes are absorbed into coatings is also influenced by a number of other factors:

- The chemical nature of the cargo.
- The contact (stowage) time.

- The contact (stowage) temperature.
- The thickness of the coating.



Graph showing the absorption of different chemical cargoes into epoxy phenolic.

Cargo's chemical nature

Organic solvents and chemicals of low molecular size tend to be absorbed to a greater extent and at a faster rate than those of larger molecular size. For example, methyl alcohol (methanol) will be absorbed to higher levels and quicker than butyl alcohol.

The contact time is extremely important – the longer the contact time the greater the absorption, until an equilibrium level is finally reached.

The contact temperature is also very important – the higher the contact temperature the faster the rate of absorption. Furthermore, the absorption equilibrium may also be higher compared to lower temperatures.

Finally coating thickness actually determines how much of the previous cargo is absorbed. The greater the coating thickness the more cargo is absorbed over the same area of coated surface.

Clearly tank cleaning is not just about removing previous liquid cargo residues that may remain inside the vessel after the cargo has been unloaded, it is also about reducing the potential of contaminating subsequent cargoes from residues that may not be immediately visible to the naked eye.

Absorbed residues tend to be completely invisible, and even if a coated surface is completely saturated with a particular cargo residue, visually it will appear to be completely clean. Knowledge of the absorption potential of different cargoes into the coating is thus extremely important, but also some inspection techniques (for example wall washing) may be necessary to recognise and identify the presence of absorbed residues, particularly if the next cargo to be loaded is classified as sensitive.

Adsorbed residues may also be difficult to spot, but because they are adhered to the outer surface of the coating, it is easier to identify their presence by thorough visual inspection. Furthermore, if the resides are coloured, they will of course be more apparent.

It is thus fair to say that the skill involved in tank cleaning coated surfaces must go far beyond a visual assessment of cleanliness, and may need to be supported by instrumental / analytical procedures.

Removal of adsorbed and absorbed cargoes

Adsorbed cargoes only need to be removed from the surface of the coating. Water soluble cargoes can be removed simply by washing with clean water, rinsing and drying. Water insoluble cargoes may need the use of a detergent, saponifying agent, or solvent prior to final rinsing with clean fresh water. The use of warm or hot water may facilitate the process.

Absorbed cargoes present a totally different and more complicated challenge, as they need to be removed from inside the coating. The options for removal are limited to:

1. Extraction using another penetrating solvent.

2. Evaporation from the coating into the tank atmosphere and then into the open air.

In order to completely extract residues of a previous cargo into a more penetrating solvent, the entire coated surface must be exposed to that solvent and as such this option is not feasible to most operating vessels.

It is possible and extremely effective to extract a previous cargo with another loaded cargo, provided the specification of the subsequent cargo is not prejudiced by the residues of the previous cargo. This is actually one of the best ways of 'cleaning' coated surfaces, but of course it relies on skilful operational management and the availability of the correct choice of intermediate cargo, which may not always be available.

The most practical option available to a vessel is therefore ventilation. The rate of evaporation of an absorbed cargo from a coating and then out of the tank is a slow process, that is largely dictated by the temperature of the coated surface and the rate of clean air movement through the tank itself. To speed this process up, heat needs to be applied to the tank and one of the most efficient and cost effective means of introducing heat is to re-circulate hot seawater through the tanks.

However, effective as hot water washing is, at accelerating the evaporation of absorbed residues, it is also the reason why major complications can arise.

Some coating manufacturers prescribe that after the carriage of a cargo that is known to be absorbed into the coating, the coating should not be exposed to water or a water soluble cargo until all the absorbed cargo residues are removed from the coating by ventilation, and the coating is thus restored to its original condition.

Other coating manufacturers recognise that the removal of absorbed cargoes by ventilation alone can be a very long process taking a number of days to complete. In fact, many cargoes take weeks to evaporate from the coating at ambient temperatures and others may be retained indefinitely.

Operational vessels cannot wait for these long periods and they have to find ways of accelerating the evaporation process. Realistically, that can only be achieved by increasing the temperature of the steel in the cargo tanks using hot seawater re-circulated through them, despite the fact that this could have a damaging effect on the coating. The long running issue of balancing 'operational' and 'commercial' considerations raises its head, and there are no easy answers.

Potential impact of cleaning on tank coatings

The reason the coating manufacturers prohibit the exposure of their coatings to water and/or water soluble cargoes immediately after the carriage of an absorbing cargo, is because the coatings also absorb water – some more than others. Furthermore, the presence of some absorbed cargoes can also facilitate the absorption of water.

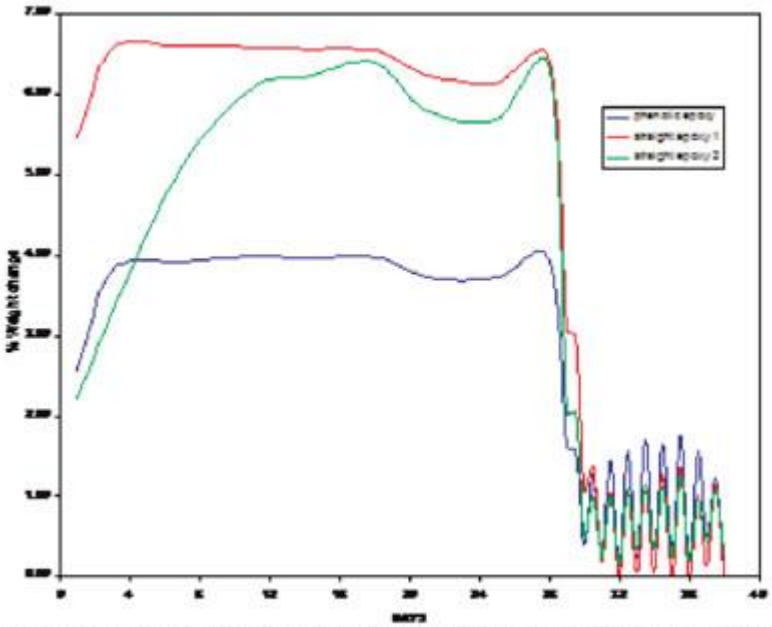
That rate of water absorption increases as the temperature of the water rises, so the use of hot water to encourage evaporation of absorbed cargo residues, also results in the increased absorption of water.

As expected, the presence of water and absorbed cargo residues within the paint film can and does lead to chemical reactions inside the coating, which may be harmful to the coating, and/or the steel beneath it. It is not difficult to appreciate that the more frequently tank cleaning is carried out under these circumstances, the greater the risk to the coating. That risk is also increased by rising temperature and longer duration of each episode of tank cleaning.

The following practical work demonstrates this point very effectively.

Three different epoxy coatings were immersed in methanol (a known absorbing cargo) for a period of 28 days, before being removed from the methanol and naturally ventilated for a period of 24 hours. The coatings were then washed by means of a series of hot seawater washing cycles, each of six hours at 80 deg C.
The graph below illustrates three key points:

1. The extent to which the different coatings absorbed the methanol during the immersion period and then released it during the ventilation period, prior to the start of the washing cycles.
2. How cargo tank coatings absorb water and then release the absorbed water during cleaning cycles.
3. The difference in the amount of water which may be absorbed by different tank coatings during cleaning cycles.



Graph showing the absorption/desoprtion of of seawater during several episodes of tank cleaning @ 80 °C after exposure to methanol for 28 days.

It is clear that the different coatings absorbed different levels of the methanol, and all three coatings absorbed water during each tank washing cycle. It is not possible from these graphs to identify how much of the absorbed water is released between each washing cycle, but what can be seen is that water is reabsorbed quite quickly each time a washing cycle is repeated.

The graph also shows that all the coatings actually absorbed around 1.5% - 2% water during the hot washing cycles. It is known from previous work carried out by MarinSpec Associates that it takes a number of weeks for deionised water at 25 deg C to be absorbed to these same levels, which clearly suggests that increase of temperature dramatically increases the rate and degree of water absorption.

Conclusion

Tank cleaning with hot water cannot be carried out with impunity. If the water is too hot, or the duration of the cleaning is too long, or too frequent there will be an increased risk of damage to the cargo tank coatings. However, it is also clear from the performance of a variety of coatings over many years of practical experience, that tank coatings can and do provide good service if treated sensibly.

The interface between cargo tank coatings and tank cleaning is extremely important and it has to be understood that both have an influence on each other. The cargo tank coating manufacturers have to understand the necessity for tank cleaning and by the same token, the vessel operators must understand the possible consequences of it.

MarinSpec understands the importance of this interface, and has carried out a number of projects to investigate how coatings behave under different cleaning regimes and how contamination potential may be controlled by effective and sensible tank cleaning.

Clearly, those coatings that combine good compatibility with tank cleaning procedures and low absorption characteristics will be of significant interest to shipowners looking to optimise their operational procedures, saving both time and money on a process that is absolutely essential to the successful operation of any fleet. TO

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Italian naval guards fate makes CISF wary of guarding Indian merchant ships

India's action against Italian naval guards, who shot dead two Kerala fishermen approaching their ship in February, has come back to haunt its own force. Government wants Central Industrial Security Force (CISF) to guard Indian merchant vessels against Somali pirates, but the force is wary of taking up the responsibility. CISF personnel worry that in the absence of clarity and strict adherence to international laws and UN Convention on the Law of the Sea (UNCLOS), they might meet the same fate as the Italians in some other country.

On February 15, two Italian marines guarding an Italian oil tanker traveling to Egypt shot dead two fishermen mistaking them for pirates off Kerala coast. The marines were arrested and charged with murder, and the ship was detained. The incident opened a debate on whether India had the jurisdiction to charge and try the marines as the offence did not happen in its territorial waters.

According to UNCLOS, to which India along with 161 nations is a signatory, the territory of a country extends only till 12 nautical miles beyond which its penal laws would not be applicable except for those relating to taxation, Customs, immigration and pollution. The incident, involving Italians, occurred beyond 20 nautical miles.

"It only shows that enforceability of UNCLOS is at the discretion of a particular country. The action of the marines, however irresponsible, was not with criminal intent. We could face the same situation in another country and be at their mercy," said a CISF official.

Interestingly, not all countries with a coast are signatories of UNCLOS. Even the US is yet to sign it. "Then, there are those countries, such as Somalia, which have an interest in maritime piracy. One can never be sure such countries will honour international conventions should a situation like the Italians arise. Conflicts such as these will then go in the diplomatic realm that has its own pace of resolving issues," said a CISF officer. The government is aware of the pitfalls and the effect it might have on the morale of the men guarding the ships, but it hopes higher remuneration and international exposure that the job offers will attract young CISF men. Mercenaries on foreign vessels earn $1,000 a day. CISF personnel hope to get paid at least $500 a day since they are in a way guarding country's commercial interests. A senior CISF official said, "All we can do is train the men in maritime security, apprise them on international laws and standard operating procedures and then hope that they do not face a situation where such mistakes may occur. Rest is professional hazard." The government had come up with the proposal in the beginning of the year following repeated pirate attacks on Indian ships in the past few years (15 in the past three years alone). The training of the men has already started and they will be deployed on any vessel that demands their services through Indian National Shipowners' Association. **Source : IndiaTimes**

Inséré le 12 février 2013 Logboek Enlevé le 12 mars 2013

Tank calibration and sounding table problems

Mistakes that occur when defining the exact quantity of cargo in ships' tanks directly affect the financial results of both the cargo and shipowner*.

PART I

Besides technical parameters and technological procedures that influence the measurements of cargo in a tank (temperature, ship's trim, cargo density, sea water density), the correct calculation of sounding tables (ST) for vessels' cargo tanks is of utmost importance. This is equally true for sounding tables of bunker, oil, ballast and water tanks.

An example of ST mistakes and the results is the case of LPG carriers (fitted with integral self-supporting type tanks; two ships had cargo capacity 76,000 cu m each and one with a cargo capacity 37,000 cu m) the cargo tanks ST had mistakes of about 1%. After seven years of operation, the shipowner found the mistake, but the recorded freight losses from the three ships exceeded $1 mill.

Many international regulatory documents define the parameters of ship tanks, including the International Organization for Standardization (ISO), American Petroleum Institute (API), Energy Institute (EI), International Organization of Legal Metrology (OIML) plus many other local metrological organisations in each country (see also Phoenix Agreement, MPMS 2.7, 2.8A&B, Directive of the European Parliament and of the Council - 71/349/EEC, standards and others).

According to OIML RL 95 - ships' tank, general requirements are: Calibration table - The expression, in the form of a table, of the mathematical function V(h) that represents the relation between the height h (independent variable) and the volume V (dependent variable) when the ship is on an even keel and has no list. Calibration - A set of operations to determine the capacities of a tank at various filling levels. The regulatory documents specify general demands for the calibration procedure (defining tank's actual size) and ST preparation.

Ships tanks come in different shapes and constructions. Sometimes, tanks have very irregular shapes, with ledges and steps on different planes and levels and with dimensional sharp bends.

Vessels' tanks differ greatly from shorebased cylindrical tanks (they can be easily described in linear dimensions). Ships' tanks are subject to other loading stresses during vessels' movements, constantly oscillating on different planes.

The above makes it difficult to use the same calibration procedures for vessel tanks as used for shore-based tanks.

For example, ISO standard 8311 (refrigerated light hydrocarbon fluid – calibration of membrane tanks and independent prismatic tanks in ships – physical measurement) speaks of defining average dimensions (tank's length, width and height) and is developed for tanks of regular ('perfect') shape, with parallel sides:

- Transverse bulkheads (fore and aft),
- Longitudinal bulkheads (St B & PS),
- Tank bottom and tank top.

However, many tanks, for instance, selfsupporting type, have:

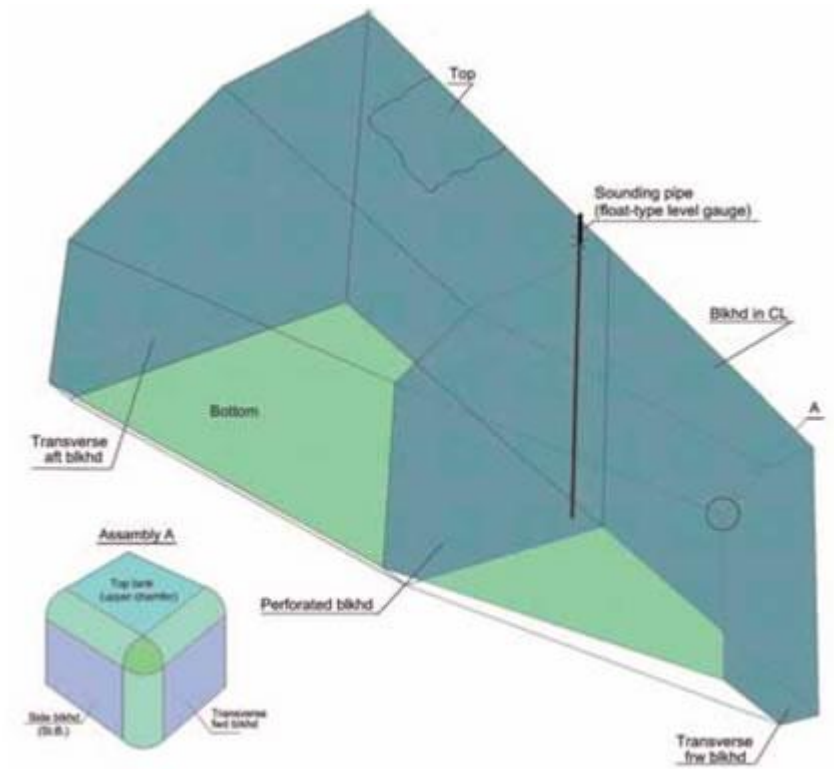

Fig. 1 Self-supporting tank of LPG tankers (St.B., No1).

- Inclined tank top or bottom,
- Tank plating in junction areas (fore and aft transverse bulkheads, tank bottom and top) has a bending radius.

Some regulatory demands seem to lack grounding, since they regulate different demands to tanks of regular and irregular shapes (regular shapes can have an error of 0.3% and irregular shape –

0.5%) and, unfortunately, these demands are accepted by other controlling and regulating bodies (flag administrations, for instance). It seems that a single error measurement would be more reasonable.

OIML recommends that the tanks are periodically verified at the end of the period of validity of the certificate. This period is fixed by the national metrology authorities. A period of 10 to 12 years is recommended. It is advisable to take advantage of the vessel's periodic refits for recalibrating the tanks.

This is a demand that directly affects the shipowner, since some marine administrations have started to state the following in their regulatory documents: '... the calibration tables cease to be valid after 12 years, or as soon as the tank has become deformed, or been repaired or reconstructed, in a way liable to alter its measurements characteristics' (Malta, LN 414 of 2002).

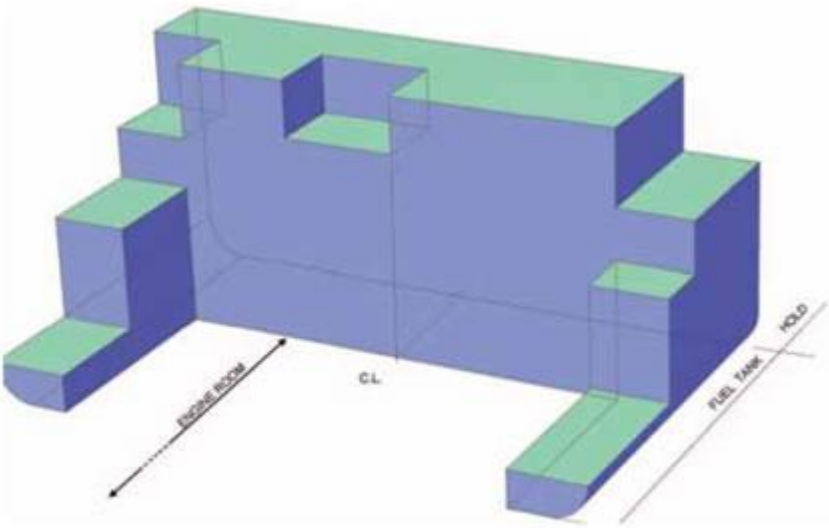

Fig. 2 Fuel oil tank of multi-purpose ship.

Vessel STs normally have tank characteristics for an even keel and for various trims. The vessel's list is not considered. This can be explained, as any vessel can have the list compensated by operational changes. Therefore, calculating ST, taking into account ship's list - or both list and trim - is considered unnecessary by some specialists.

Simple addition of adjustments for list and trim will give the correct result only in the case of linear vertical bulkheads, which do not have bends.

In case of absolute necessity, the best choice is a software program which calculates ST taking into account the vessel's list and trim. TO

Part Two – Reasons for incorrect ST

The ST for ships' compartments is calculated at the initial design stage, since the information on tanks characteristics is necessary. Tanks' technical characteristics are used when calculating ship's stability, strength and damage stability.

Ship design is undertaken in several stages. Each stage calls for adjustments and corrections and sometimes these adjustments are lost in the final calculation.

Practice proves that despite high precision in shipbuilding technology, ships' tanks ST (in particular, tanks that have inside elements) can contain errors due to following reasons:

- Incorrect calculation of tank volume, due to mistakes when describing its configuration;
- Mistakes that arise when calculating the volume of constructions, pipes and equipment inside the tank (deadwood);
- Mistakes that occur when describing the shape of sounding pipe and amount of non-measured (dead) store;
- Discrepancies between actual tank size and designed tank size, that appear as a result of technology error, or mistakes in ship design, construction, repair and upgrading. In case of

shore-based cylindrical shaped fixed containers, calibration consists of measuring the inside of the tank and ST preparation. This is a simple procedure for shore-based reservoirs. The situation is not the same with tanks on board tankers, in particular when they have inside elements that need to be considered when calculating the ST (structures, equipment, heating, vertical ladders, pipes, etc).

The actual volume of ship's tank Wfact can be calculated as follows:
Wfact = Wtotal – Winner
Where -
Wtotal - tank volume without taking into account inside constructions,
Winner - volume of inside constructions. When defining Wtotal design drawings are used at the first stage. At this point a mathematical model (dot matrix) is created to describe the tank's configuration and Wdrawing is defined.

Every point 'i' is set by three co-ordinates (Xi, Yi, Zi). Usually 'n' basic cross-sections are defined for the tank (Xare defined for the tank (Xn) and each cross-section is described by 'm' points (Ym, Zm).

Due to objective reasons when the ship is built discrepancies can occur. These can be numerous, such as welding and connecting tolerances, shipyard standards and others. As a result of such discrepancies, the actual size of the tank can differ from the ones specified by designers.

In order to calculate such discrepancies, actual measurements are done (calibration). When inside elements are present, as a rule measurements will be undertaken using three basic lines: along the ship (X), across the ship (Y) and vertical (Z), then the correcting coefficients are defined (in practice they are very close to 1).
KX = X calibration (L) / X drawing (L) - along the ship,
KY = Y calibration (B) / Y drawing (B) - across the ship,
KZ = Z calibration (H) / Z drawing (H) - vertical.
Therefore, discrepancies that occur during construction are accounted for by introducing a correcting coefficient Kcor
Kcor = KX * KY * KZ ,
Wtotal = Wdrawing * Kcor

This method cannot be considered as completely correct, since the inside of the tank is not perfect and has specific structural features. Therefore, it is not possible to measure it evenly everywhere. Checking all co-ordinate points 'i', in case inside structures are present, seems unreasonable due to high measuring cost and accumulated errors that can arise with multiple measurements.

However, mathematical modeling of tank's inside surface (Xi, Yi, Zi), measuring the tank and using appropriate software make it possible to calculate Wdrawin g, and then prepare sounding tables for different levels.
Tank measurement is undertaken by using one of the recommended tools. Naturally, any instrument, or equipment used needs to be checked and certified.

Actual (inner) dimensions of cargo tank have to be defined according to existing norms (ISO, API, etc) by different companies (SGS, NKKK, independent surveyors, etc). Recently calibrations have become easier to carry out, since laser technology has advanced considerably.

Deductions from Brutto capacity (Deadwood)

The volume of inside structures is calculated based on design drawings, which contain information on the structures, pipes and equipment located inside the tank. Such precise calculation is only possible at the final design stage, when real information about tank structures becomes available.

At the initial stage, the designer can set a correcting coefficient that would account for loss of net tank capacity attributed to inside elements. For instance, for a regular tank in area of parallel mid-body Kcor can be set at 0.98, or for forepeak Kcor = 0.97. Kcor decreases for larger ships. For the

initial design stage, this approach is acceptable and reasonable. However, in further stages, the designer will adjust the construction element sizes, the equipment list, etc.

Quite often the class-project undertaken at the request of the classification society is prepared by one design office while the working drawings prepared for specific technology are completed by another design office, or the shipyard's design office. That is why final STs are prepared during the final design stage in agreement between the shipyard and shipowner. The class society that supervises ship construction is not involved in this particular work.

When calculating Winner, measuring the inside tank structures is both labour-intensive and expensive. That is why project documents are normally used to calculate Winner. Such calculations are necessary and should be done with maximal precision and detail.

Inside tank structures are not even in height and that is why it is usual to divide them by attributes (for instance, longitudinal and cross structures, ladders, heating, pipes, etc). Doing so allows the definition of the Winner = f (Z) function in a more precise manner.

Therefore, the existing calibration method is not perfect and will never be perfect, since it has inevitable errors. The main task when executing such work is the minimising of errors. However, it must be assumed that it is not possible to achieve precise measurements.

Volumetric method

Specialists in metrology consider the volumetric method to be the most precise in defining volume. For shore-based containers and smaller size tanks this method is wellgrounded and the results obtained are correct.

However, it's not always possible to use it for ships' tanks (in particular for tanks with inside structures). The reasons are the following:
a) It is not always possible to fill the tank with water if it is meant for cargoes with a density of less than 1,000 kg per cu m, for instance the density of Propane is 585, Isobutene - 594, Butane – 600 and Propylene is 609.

b) When water is poured, the ship's constructions will deform due to significant hydrostatic pressure. Naturally, a bigger difference between the density of poured water and density of project cargo will cause greater construction deformations than planned for. This also means that to check one tank, water has to be poured into both adjacent tanks, in order to minimise transversal bulkhead deformation. Doing this will, however, raise the cost of operations and for integral self-supporting tanks, this is not possible.

c) Water should be poured into a tank after it was coated inside, in order to escape oxidation of its inner surface. If internal coating was not planned, then, if demanded by the cargo characteristics, tank drying needs to be done in a way that excludes the possibility of oxidation.

d) Using sea water is cheaper than fresh water, but it has to be cleaned. This causes additional problems for the shipyard. Final stage demands fresh water for washing, but using fresh water to calibrate one tank of 20,000 cu m capacity is not always technically possible.

e) In accordance with OIML-R-95, the volumetric method requires that the ship shall remain on an even keel without listing throughout calibration. This means that during calibration the ship has to be in dock - preferably a drydock -, or constant ballast operations need to be executed if it is done afloat. Both conditions are difficult to provide: drydocking will require installing keel-blocks (to escape bottom deformations), while maintaining even keel afloat will, on the other hand, require high precision and effort from the crew and additional expense from the shipowner.

If the tank is filled completely, such demand is questionable. In this case it is important to direct attention to preventing air voids from appearing when the tank is filled.

Registering calibration results

Calibration certification must be prepared after tank calibration is finished (see OIMLRL-95). Considering various technological aspects, it can be deemed necessary to provide additional information on calibration results, since the proforma recommended is not informative enough.

According to OIML-RL-95 demands (item 5.6.2), records must be prepared after calibration. It seems rational to enter the results of tank measurements in a separate calibration act. The following in particular:

■ A drawing of tank sounding pipe, (showing frames, configuration, lower part construction, distance from pipe's lower measuring point from tank's bottom etc).

If a float-type system was used – a description of the system should be provided in order to calculate non-measured store and give recommendations on measuring ullage and innage height.

■ Temperature of metal constructions at the time of measurement.

If measurements are undertaken during periods of high temperature, the steel can reach a temperature of +40 ˚C. Some cargoes,reach a temperature of +40 ˚C. Some cargoes, for instance Propylene, boil at –47.7 ˚C. Whenfor instance Propylene, boil at –47.7 ˚C. When transporting such cargoes, the difference in temperature of measurement and transportation will be around 90 ˚C. Thistransportation will be around 90 ˚C. This temperature difference causes a decrease in tank's length of 0.1 %. Therefore, if there are no records in the vessel's operating documents that recommend using linear expansion coefficient, such recommendations have to be given to the shipowner in another document, for instance a calibration act.

The calibration act can be kept on board of the ship, or filed together with the ST.

In case of a second calibration, the measurements should be taken at the same positions as the previous calibration. This approach allows the change in each tank dimensions to be followed, since all tanks are subject to operational deformations. If done differently, any calibration will be just a formality.

Having a calibration act on board, together with a Certificate of Calibration, would make it easier to control this issue both for the shipowner and for other bodies (flag administration, PSC and others).

While the task seems to be simple, there are aspects that are difficult to consider when preparing ship's ST.

The main problem arises due to the fact that during calibration, the tank's shell is under less tension than it is when the tank is filled. Hydrostatic pressure causes tension when the tank is filled or, in case of partial filling, such tension is caused by great dynamical loads. This tension leads to the deformation of a tank's shell and changes its geometry and volume. This change can be accounted for if the volumetric method is used for calibration. However, as discussed, this method has its limitations.

Residual shell deformations should be assessed when inspecting the tank on the inside (for instance during repairs). The measurement should be undertaken with instruments and calculated.

As for shell deformations during loading, they can be determined by calculations.

Safety

The parameters specified in the ST are not only related to vessels' operational financial results, but also to the safety issue, since they influence ship's stability. These parameters also define the results of heeling test since this test is done through liquid ballast on many large vessels. That is why, the designers should be extra careful when preparing the ballast tank mathematical model. A mistake in preparing ST will give incorrect information about the extent of heeling moments and, as a consequence, will cause errors in the heeling test.

It is common for ships of considerable age to have problems with sounding pipes for ballast tanks. These problems are caused by unstable sea conditions, high corrosion, thin pipes, etc. As a result, the pipes get clogged, or break and the crew is unable to obtain

objective information regarding liquid level and ballast quantity. Introducing a calibration act with information regarding sounding pipe configuration and its changes would allow enhanced control over the pipe condition. It should draw the crew, shipowner and classification society's attention and formalise the control procedure.

Class societies

The IACS class societies do not approve ST. This issue is out of IACS' scope, defined by international conventions on safety and environment. Commercial issues, such as exact quantities of cargo, or bunkers, are also not covered by class.

For instance, class cannot demand revision of a tonnage certificate if the change of capacity does not exceed 1%. Such precision is sufficient for safety. However, a shipowner cannot be satisfied with this, since 1 % of VLCC's cargo capacity can equal, or exceed 20,000 cu m.

In summary

1. Problems with ship tanks ST exist and are caused by several objective reasons (ship design peculiarities, incorrect data used when considering technological aspects, etc).
2. Mistakes and errors in ST arise first and foremost when creating tank's mathematical model (when describing tank's shape and calculating the volume of inside structures). Tank's calibration allows the introduction of a correcting coefficient, which can influence the final results insignificantly, since the coefficient is close to 1. Therefore, entering precise data about the tanks according to ship's drawings (tank configuration drawings, inside structures drawings) is a very important issue and cannot be neglected. Tank calibration (defining actual size) can be considered as the next stage, in accordance to the demands of standardisation (ISO) и metrology (OIML).standardisation (ISO) и metrology (OIML).
3. Geometric method is the most rational for ships' tanks with inside elements. Volumetric method has its limitations when used for shipboard tanks. Modern software allows the description of any complex configuration with a high level of precision. It can therefore be rational to set a single error allowance, regardless of the tank's shape. This could be reduced to 0.3% (from 0.3% and 0.5%).
4. Classification societies do not approve, or revise commercially oriented documents. This makes ST control an important function of the shipowner, which can be controlled by technical managers, or ship's superintendents.
5. Existing requirements for the final recording of calibration results are not sufficient. The Certificate of Calibration does not cover all technological aspects, so it should be extended to include a calibration act.
6. When actual tank dimensions are measured it is recommended to record the following:
    - - places of measurements taken;
    - -position and configuration of the sounding pipe (drawing);
    - -amount of non-measured store (dead store);
    - -a diagram of Winner= f (Z) ;
    - -temperature of tank metal constructions and recommendations on calculating the coefficient of linear extension.
7. ST should be calculated with highest precision possible and the calculations need to be carried out by specialists that can:
        1. -create an accurate mathematical model of the tank;
        2. -account for results of actual measurements;
        3. -prepare correct ST that would satisfy the demands of cargo and shipowner, as well as the demands of classification society (regarding stability issues).

As a minimum requirement, ST should have information regarding the amount of liquid for different ships' trims. For even keel position the information should include:

- -amount of liquid in tank;
- -liquid's centre of gravity position (X,Y,Z);
- -moment of inertia of the free surface of the liquid.

It is advisable to also include the information from para 6) in the sounding tables as well (see also OIML RL 95, item 5.6.2).

Conclusions

This article calls for the formalisation of the procedures of preparing ST for ships' tanks.

There are existing gaps in the procedures. They are caused by the commercial nature of the issue and by regulations, which are not perfect. Preparation of additional documentation (calibration act) together with Calibration Certificate and ST is recommended.

The basis for tank checks, control and calibration should be derived from the position of interested parties - cargo and shipowner, metrological organisations, classification societies, flag administrations, etc.

Shipowners' control over this issue will allow the reduction of the influence of occasional factors and decrease errors when conducting ship's measurements, therefore, reducing unpredicted losses. TO

* This paper was written by Eugeniy Oberemok, PhD, Naval Architect, Independent Expert.

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Zeewoorden-Schelde & Polder

De Schelde betovert en inspireert.

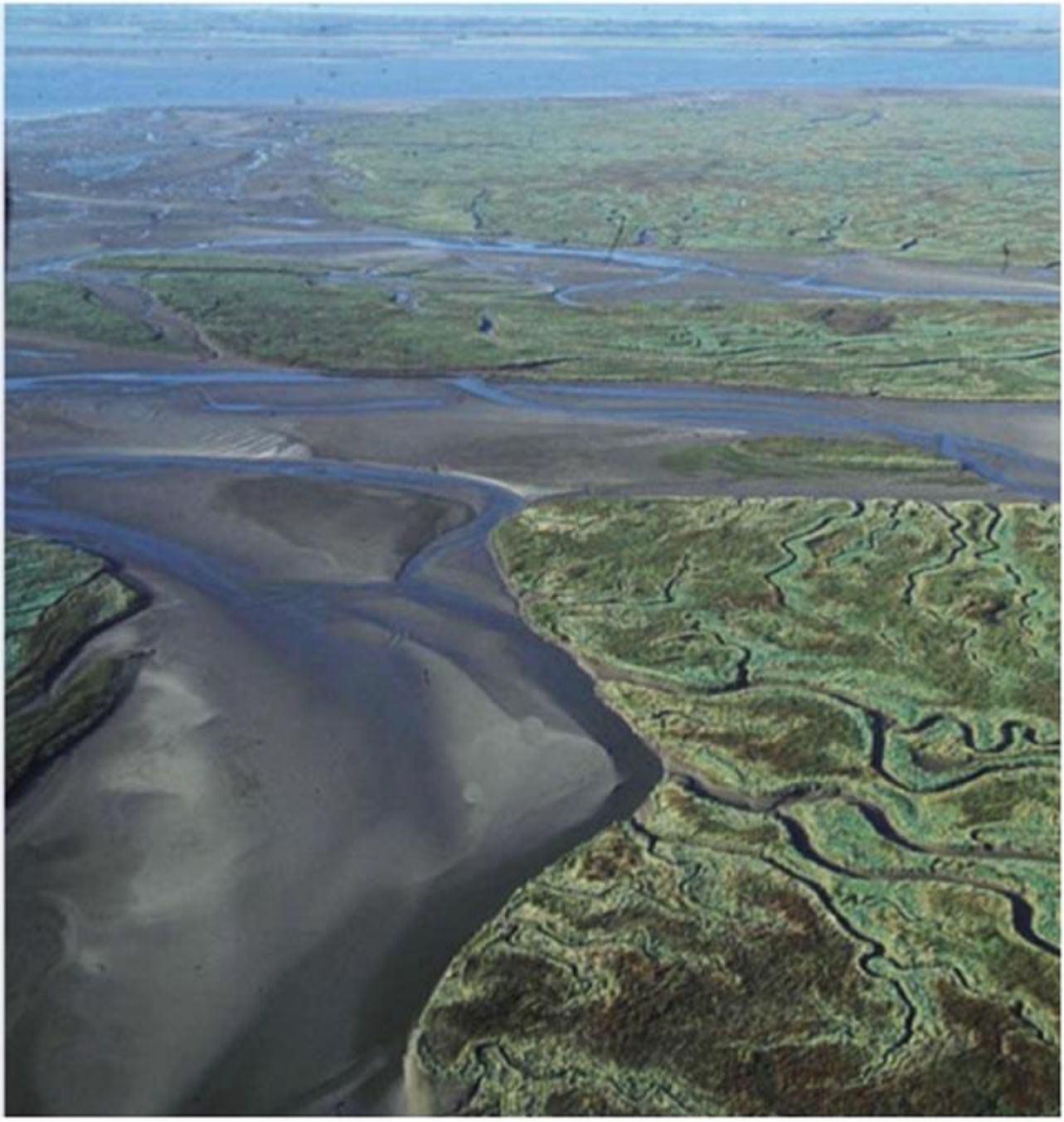
Aan deze machtige rivier is dan ook een welhaast onoverzienbaar gamma publicaties gewijd. In deze bijdrage willen we geenszins deze uitgebreide kennis de revue laten passeren. Na een korte blik op het ontstaan van het estuarium zoals we het vandaag kennen, zoomen we in op één specifiek aandachtspunt: de oorsprong van de naam van deze machtige stroom. In welke historische taallaag heeft Schelde zijn wortels? Welk betekenisvol woord gaat er achter de thans ondoorzichtige vorm schuil, en hoe zijn uit de ene oervorm zulke verschillende varianten als Schelde, Escaut en Schouwen ontstaan?

Nu één van de langste getijdenrivieren van Europa

De Schelde zoals we die vandaag kennen, ontspringt ongeveer honderd meter boven de zeespiegel op een hoogvlakte nabij het Franse Saint-Quentin. Tot aan de monding in het Nederlandse Breskens en Vlissingen meet deze rivier zo'n 350 km. Over zowat de helft van die lengte is er getijinvloed merkbaar, waarmee de Schelde één van de langste getijdenrivieren van Europa is. Pas ter hoogte van de sluizen van Gentbrugge, Merelbeke en Zwijnaarde wordt het getij volledig afgeblokt en zit de loop stroomopwaarts gevangen in een gekanaliseerd, niet langer door de zee beïnvloed keurslijf. De golf die via de brede trechtervormige monding binnentreedt bij elke vloed, laat ter hoogte van Vlissingen/ Breskens een gemiddeld tijverschil noteren van 4 meter. Ter hoogte van Merelbeke is dat nog steeds een respectabele 2 meter. De oorzaak: het getij dat tweemaal per etmaal ongeveer 1 miljard kubieke meter zeewater (= ca. 50.000 m3/s) de Schelde in duwt.

De Hont wint het pleit

Toch is het niet altijd zo geweest. Tijdens de laatste ijstijd stond de zeespiegel veel te laag om de loop van de Schelde diep landinwaarts te beïnvloeden. Door de klimaatsopwarming werd die invloed echter steeds belangrijker en zo'n 8000 jaar geleden was er al sprake van een zwakke getijdenwerking tot aan de huidige Belgisch-Nederlandse grens. Het is echter pas veel later (vanaf



11de -13de eeuw, afhankelijk van de bron) dat de getijdenwerking in de Schelde echt belangrijk is geworden. Die grotere tijgevoeligheid hangt samen met de voortschrijdende zeespiegelstijging in de afgelopen 2000 jaar (a rato van 15-20 cm per eeuw), het ontstaan en de ontwikkeling van de Honte of latere Westerschelde en diverse menselijke ingrepen (bedijkingen en, recent, de 20ste eeuwse baggerwerken). Aanvankelijk immers bevond de Scheldemonding zich niet ter hoogte van de huidige westwaarts verlopende Westerschelde. De rivier liep in noordelijke richting naar de zee, om uit te monden eerst via een brakwaterlaguneachter de toenmalige kustlijn ter hoogte van de Maasmond, later via wat we vandaag als de Oosterschelde kennen.

Waar de Westerschelde zou komen te liggen lag er toen nog een moerassig gebied achter een vrij gesloten kustwal. Deze Honte bestond zeker al in 1183, toen het oostelijke deel ervan een aanzienlijke zeearm vormde met getijdenwerking, in verbinding met de Schelde. Geleidelijk aan won de Honte ten opzichte van de Oosterschelde aan belang als verbinding met de zee. Pas tegen het einde van de 15de eeuw was ze ook breed en diep genoeg om vlot toegankelijk te zijn voor het scheepvaartverkeer naar Antwerpen.

De eilanden (o.a. Wulpen, Koezand, Schoonevelde), gelegen waar nu de monding ligt en zelf ontstaan uit wat ooit een min of meer gesloten kustwal was, verdwenen geheel of gedeeltelijk door een combinatie van rivierafvoer, zeespiegelstijging en stormvloeden. Ook heel wat dorpen ondergingen dit lot. De vorming van de Westerschelde werd gedurende lange tijd ook gehinderd in het oosten. Pleistocene zandruggen met een ijzerhoudende kern tussen Woensdrecht en Zwijndrecht boden lange tijd weerstand aan het wassende water. Het is sinds de 17de eeuw dat de benamingen Honte en Westerschelde naast elkaar voorkomen op kaarten.

Een schitterende, ondiepe of met riet begroeide rivier?

Schelde is de Nederlandse afstammeling van een Voorgermaanse, Keltische waternaam Scaldis, die al vermeld wordt door de Romeinse geschiedschrijvers Julius Caesar en Plinius. Volgens de Gentse naamkundige M. Gysseling is die Keltische naam afgeleid van een Indo-Europese wortel kal / kel, waarop ook Nederlands helder, Latijn color 'kleur' en Grieks kallos 'mooi' teruggaan en die oorspronkelijk 'schitterend' betekende. De Schelde werd dus betiteld als "de schitterende rivier". Voorheen hebben verschillende auteurs Schelde als een jongere, van oorsprong Germaanse naam proberen te verklaren. Die zou dan zijn afgeleid van Germaans skald- 'riet', zoals in het vaak voorkomende toponiem schouwbroek en het nog bekende Engelse shalder 'riet, bies, lis', ofwel zou de naam verwant zijn met Oudengels sceald en Engels shallow 'ondiep'. Die theorieën worden vandaag niet langer plausibel geacht. Niet alleen dateren in onze streken bijna alle namen voor grote rivieren van voor de Germaanse tijd, ook ligt een Keltische oorsprong voor de hand door de vroege attestatie van de uit Scaldis gevormde plaatsnaam Escaudin (847 Scaldinium) in de buurt van het Noord-Franse Kamerijk (Cambrai), een streek waar de toponymie door en door Keltisch is. Daarom geniet de verklaring van Gysseling, die Schelde dus op een Keltische taallaag terugvoert, de voorkeur.

Van scaldis tot escaut, schelde en schouwen

De Franse naam Escaut is het resultaat van de Romaanse klankontwikkeling van het Keltische Scaldis. De medeklinkerverbinding sk- aan het woordbegin wordt in het Frans al sinds de middeleeuwen niet langer als inheems aangevoeld, daar wordt steevast een e- voor gezet. Denk maar aan escalier uit Latijn scala. Bovendien, als in het Oudfrans een al- gevolgd werd door o.m. een d of een t, ontwikkelde die verbinding zich tot een tweeklank au, die in het moderne Frans tot een éénklank oo is geëvolueerd, vergelijk Frans autre (uitspraak ootre) en sauter uit resp. Latijn alter en saltare. Zo ook evolueerde scald- tot scoud- en scaud-. Zo'n vertweeklanking deed zich overigens ook voor in de Oudfranse verbinding olt (vaak uit Latijn ult), die eerst een ow-achtige tweeklank werd en vervolgens een oe, bv. Modern Frans outre uit Oudfrans oltre (van Latijn ultra). De tweede lettergreep van scaldis is in het Oudfrans al vroeg verdwenen, getuige attestaties als Scalth uit 954 en Scolt uit de 10de -11de eeuw.

In de West-Germaanse en latere Oudnederlandse voorloper van onze huidige zuidwestelijke dialecten heeft Scaldis twee verschillende klankontwikkelingen gekend, de ene leidend tot de riviernaam Schelde en de andere tot Schouwen, de naam van het voormalige Zeeuwse eiland dat vandaag tezamen met drie andere vroegere eilanden Schouwen-Duiveland vormt. Schelde ontstond uit Scaldis door umlaut. Umlaut is een klankontwikkeling waarbij een beklemtoonde klinker van kleur verandert onder invloed van en in de richting van een onbeklemtoonde klinker in een volgende lettergreep. De i zoals in scaldis is een gesloten klinker, die vooraan in de mond wordt gevormd, de a is een open klinker die in het midden van de mond wordt gevormd. De i trok de a naar zich toe, en die evolueerde tot een halfopen voorklinker e. Geheel analoog is de ontwikkeling van Nederlands en Engels bed en Duits bett uit West-Germaans baddi. Nadat de umlaut zijn werk heeft gedaan, verdoft de umlautsverwekkende klinker tot een doffe e. Op die manier ontstond dus de vorm Schelde.

Schouwen gaat terug op scaldim, de datief meervoud van scaldis. Daarin heeft de i van het achtervoegsel echter geen umlaut veroorzaakt, hij verdofte zonder dat hij enige invloed op de eerste klinker had uitgeoefend. Verder heeft de verbinding ald- de normale klankwettige route gevolgd. Nog in de West-Germaanse tijd verschoof de klinker in de verbinding ald/alt in de westelijke variëteiten

van het latere Nederlands – Vlaams, Zeeuws, Hollands – naar achteren in de mond, waardoor hij een o werd: skald- werd skold-, zoals ook Germaans salt- en ald- evolueerden tot solt en old. De vorm Scolden verschijnt voor het eerst in een bron uit 1156, maar is in het mondelinge taalgebruik natuurlijk een stuk ouder. Later, op het einde van de Oudnederlandse periode (12de eeuw), evolueerde de verbinding ol + t/d, net zoals in het Oudfrans, algemeen tot een tweeklank ow, vandaar Middelnederlands zout, oud en ook Scouden. De wegval van de –d- in het midden van de plaatsnaam, die tot de huidige vorm Schouwen leidde, dateert van na de middeleeuwen.

POLDER

Tegenwoordig is De Polders de standaardtalige benaming in Vlaams-België voor de alluviale vlakten aan de Noordzeekust en aan de Westerschelde. Die naam is echter niet inheems in de dialecten van de kuststreek. Het zeekleigebied heet aan de Westkust Het Blote, aan de Midden- en Oostkust Het Noorden en in het Oostendse De Schorre. In de Wase en de Antwerpse dialecten daarentegen gebruikt men de naam Polder(s) wél. Hoe dan ook is het een oud woord dat vrijwel direct doet denken aan een laaggelegen, vlak gebied in de nabijheid van en beïnvloed door de zee. In dit artikel gaan we eerst wat nader in op het ontstaan van onze kustpolders, en buigen we ons vervolgens over de oorsprong van het woord polder.

Het ontstaan van onze kustpolders

Hoe ons kustgebied door geleidelijke opslibbing en menselijke ingrepen van een veenmoeras over een slikken- en schorrengebied tot een egale, kleiige vlakte evolueerde, is genoegzaam bekend (zie ook 'Ontstaansgeschiedenis van onze kustvlakte' – Baeteman 2007). Ook over de actieve rol van de mens is al veel inkt gevloeid. De kustvlakte werd immers al van in de 7de eeuw systematisch bewoond (het zogenaamde Oudland), zoals door archeologisch onderzoek van o.m. de Vrije Universiteit Brussel uitvoerig is aangetoond. De eerste polders in onze kustvlakte waren klein en ovaal van vorm. Ze waren steevast in grafelijke domeinen gelegen en bedoeld om de hooiproductie voor de schapenteelt te intensifiëren teneinde voldoende wintervoer te garanderen. Deze eerste polders zijn niet strikt te dateren, maar retrogressief landschapshistorisch onderzoek laat veronderstellen dat ze in de 10de eeuw zijn ontstaan.

Vanaf de 11de eeuw begint dan de systematische bedijking langs de getijdengeulen. Bedoeling was om het Oudland door middel van langgerekte defensieve dijken langs de kreken af te schermen tegen het vloedwater. Deze dijken dragen (latere?) namen als Hoge Dijk(en) of Kaaidijk. Vóór het einde van de 11de eeuw ontstaan de eerste landschappelijke eenheden die in 12de-eeuwse documenten namen met polder dragen.

De oorsprong van het woord polder

De Nederlanden met een primeur

De oudste Nederlandse betekenis van polder in historische teksten is 'ingedijkt land'. Als zodanig komt het al voor in 12de-eeuwse Latijnse documenten uit onze streken, bv. in een Zeeuwse oorkonde uit de periode 1130–1160 ("duo iugera et unum hond in polre") en in een Ieperse tekst uit 1187 ("Super mare et polra et wast"). Ook figureert het woord in tal van middeleeuwse toponiemen. Tot de oudste behoren Zuidpolder (Ramskapelle, arr. Veurne, 1138- 1153), Kerkpolder (Cadzand, 1177-1187), Bilsekinspolder (Walcheren, 1181-1210) en Abbekinspolder (Watervliet, 1218).

De Nederlanden zijn de eersten geweest in de geschiedenis om land op het water te winnen door bedijking, een techniek die in de rest van de wereld ruim navolging heeft gevonden. Het woord polder is dan ook ontleend in zowat alle andere Europese talen, van het Engels tot het Grieks, van het Baskisch tot het Fins, van het Portugees tot het Roemeens... En door Nederlandse zeevaarders en kolonisten raakte het woord bekend in talen op verre continenten: Indonesisch, Japans, Surinaams en Papiaments.

Polder stamt van Middelnederlands polre, waar een –d- is ingevoegd om de uitspraak van de lastige verbinding –lr- te vergemakkelijken. Dat gebeurde nog in tal van andere woorden, waaronder kelder en zolder (uit Latijn cellarium en solarium), selder (uit Frans céleri) en daalder (naast Engels dollar).

Een poelenrijk gebied?

Voor de verdere oorsprong van het woord is er door enkele etymologen, waaronder M. Gysseling, gedacht aan een afleiding uit West-Germaans póla. Dit is de voorloper van het woord poel, die teruggaat op dezelfde Indo-Europese wortel als o.m. Latijn palus en Grieks pelos 'moeras, waterplas'.

Aan póla zou dan een aan het Latijn ontleend suffix ória zijn gehecht, dat een gedachte van collectiviteit toevoegde aan het grondwoord. Het aldus gevormde pólória betekende dus 'veelheid van poelen'. Dat het grondwoord in deze afgeleide vorm niet de verwachte klankontwikkeling kende zoals het afzonderlijke póla, nl. eerst tot Middelnederlands poeël (een klankstadium dat bewaard bleef tot in de huidige West-Vlaamse dialecten, waar bv. de plaatsnaam Poelkapelle als poeëlkapelle klinkt) en vervolgens Nieuwnederlands poel, schrijft Gysseling toe aan de drielettergrepige structuur

van het woord, die een vroege verkorting van de Germaanse lange ó tot korte o mogelijk maakte. Vandaar dus dat we niet poelder zeggen, maar polder. Door de beginaccentuering viel de rest van het woord ten prooi aan verzwakking en verkorting, tot enkel een element –re overbleef.

Die verklaring is betwistbaar, misschien niet zozeer op fonetische gronden, maar vooral omdat ze moeilijk te rijmen valt met de aard van de aardrijkskundige verschijnselen die door de eeuwen heen als polder worden benoemd. Het gaat hier niet om moerassige laagten, maar integendeel om land dat boven de omgeving uitsteekt. Tegenwoordig wordt dan ook nog maar weinig geloof gehecht aan de 'poelen'-theorie; het Etymologisch Woordenboek van het Nederlands (EW N) maakt er zelfs niet eens melding van.

Door aanslibbing gevormd land of ingedijkt land?

Vandaag bestaat er ruime consensus over een andere verklaring, die beter aansluit bij zowel de geografische werkelijkheid als de geschiedkundige kennis en overigens al vanouds door de meeste etymologen wordt aangehangen. In deze visie wordt polder beschouwd als een afleiding van pol, uit Oudnederlands polla, dat 'kleine verhoging in het landschap' betekende.

Dat woord, vandaag nog bekend als pol in de betekenis 'klomp samengroeiende planten (uitstekend boven het maaiveld)', o.m. ook in samenstellingen als graspol en biespol, werd waarschijnlijk gevormd uit de stam van het werkwoord puilen 'zwellen' en is misschien ook verre familie van de substantieven buil en bol. In het Middelnederlands evolueerde polle ook tot benaming voor een "eilandje of laagliggend door aanslibbing gevormd land", iets wat heel dicht in de buurt komt van de oudst geattesteerde betekenis van polder, nl. 'ingedijkt land'.

Het achtervoegsel in polre is vermoedelijk hetzelfde waarmee ook vormen als Nederlands modder en Duits moder al vroeg zijn afgeleid uit een suffixloze voorganger, etymologisch identiek met Engels mud. In het Middelnederlands staat naast modder nog een gelijkbetekenend modde. Jongere voorbeelden van zulke afgeleide varianten zijn klodder uit klot / klodde 'klont, klomp, kluit' en kladder uit klad 'vlek, spat'.

Het suffix in deze voorbeelden heeft een versterkend effect op de betekenis van het grondwoord. Wat concreet het motief is geweest om juist met dit intensifiërende bestanddeel uit polle een nieuw woord polre te creëren, is vandaag nog moeilijk naspeurbaar. Zag men in de begindagen van de bedijking de ingepolderde gronden als "verbeterde" versies van de op natuurlijke wijze aangewassen pollen? Een aannemelijk denkspoor, althans in de veronderstelling dat het nieuwe woord ontstaan is naar aanleiding van de technische innovatie om land op kunstmatige wijze op het water te veroveren. Dat het woord polre tezamen met het inpolderen zelf is geïntroduceerd, wordt als mogelijkheid geopperd door dr. A. Beekman in het door hem verzorgde 11de deel van het Middelnederlandsch Woordenboek (MNW). Daar lezen we onder het trefwoord POLDER: "Wij weten nl. dat „pollen" hoog aan- of opgewassen buitendijksche gronden waren. Werden zij bedijkt, dan vormden zij drooge oppervlakten, geheel of ten deele door water begrensd. Met het achtervoegsel re of (l)er kan dan de benaming polre of poller voor het nieuwe land ontstaan zijn...". Andere auteurs, zoals Van der Sijs (2006), achten het evenwel denkbaar dat polre al bestond voor er aan bedijking werd gedaan, dat er dus aan de vroegst gevonden betekenis 'ingedijkt land' een oudere vooraf is gegaan, waarin polre synoniem was met het oude polle in een betekenis die Van der Sijs omschrijft als 'stuk land dat zich boven zijn omgeving verheft'.

Die opvatting lijkt steun te vinden in de mariene toponymie. Op verschillende 17 de- en 18de-eeuwse zeekaarten verschijnt immers het woord polder in de naam van twee zandbanken, de Engelse Polder en de Franse Polder, beide gelegen in de Scheldemonding, ten zuiden van waar zich nu de Vlakte van de Raan bevindt. Van bedijking kan hier uiteraard nooit sprake zijn geweest, maar of er achter die toponiemen een vroegmiddeleeuwse betekenis van polder schuilgaat, is niet zeker. Diezelfde ondiepten blijken ook, zelfs vroeger en vaker, Engelse en Franse Pol te heten. Goed mogelijk zijn enkel die laatste namen oorspronkelijk en is het element pol daarin pas later vervangen door het –

toen misschien courantere – woord polder, zonder dat daarbij aan de betekenis van de soortnaam polder werd gedacht.

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De Grote Rede Sept 2012

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French boat's rescuer seeks $200K award Local sailor Todd Tholke is either a Good Samaritan or a high-seas pirate.

On Sept. 30, Tholke was a hero when he went out on the bay in the middle of the night to single-handedly rescue the runaway French catamaran Energy. The America's Cup World Series boat snapped its mooring line at Piers 30-32 that night and drifted off into the darkness, unmanned and out of control. It fetched up on the rocks of Treasure Island, where it was spotted from the land by Tholke. At 3:30 a.m., Tholke pulled it off the shore with his 14-foot Boston Whaler. He then towed it to the Treasure Isle Marina and handed it back to the racing team. The French were so grateful they offered to give Tholke a ride on the bay. But Friday, as the French prepared for the regatta, Tholke's representatives presented them with a warrant from U.S. District Court to "arrest" the boat and take it into custody as soon as Sunday's races were over. Based on a law from the 1800s, Tholke's attorney John Edgcomb said in court documents, the rescue had established "a valid maritime salvage claim" and Tholke was entitled to "a liberal maritime salvage award." Edgcomb said the amount was up to the court, but something "in excess of $200,000."

The French officially said in a statement that they were "surprised and disappointed," but it would be more accurate to say they were flabbergasted. It is hard to blame them. After all, the boat only floated a mile. It was only free for a few hours. And to be honest, if Tholke had just made a phone call, they would rather have picked it up themselves. It is tempting to speculate that Tholke figured his ship had literally come in. He quietly nabbed the boat, claimed the Coast Guard declined to pull it off the rocks, and went straight to legal counsel. Ridiculous, says Edgcomb, who said Tholke would not be available for comment. "Todd wasn't doing this for the money," he said. "He thought he was doing something heroic that people would appreciate."

Bases covered

Maybe so, but the Tholke camp certainly seemed to cover all the bases. The account of Tholke's rescue in the court filing reads like the script for "Captains Courageous." His boat, he says, "took on water, its motor cut out intermittently and smoked from overheating, and was nearly capsized on repeated occasions." The narrative makes more sense when you realize that two of the six factors of the Blackwall law, which has been the authority on salvage law since 1869, are "labor expended" and "risk incurred." I am not saying that Tholke didn't have challenges recovering the catamaran, but in the original news story on the America's Cup website about the rescue, Regatta Director Iain Murray said, "Thankfully, it was a very calm night." Adria Notari, an admiralty and maritime attorney from the nationally known firm of Houck Anderson in Miami, says it is typical for salvage claimers to emphasize the danger. "I sometimes say, 'You're making this sound like "Moby-Dick," when it was more like "Three Men in a Tub," ' " she said.

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Vale Brazil Sends Shipping Returns Plummeting

The biggest iron-ore carrier ever built arrives in Brazil next week, a sign of strengthening demand for commodities that means record profit for Vale SA and a slump in earnings for shipping companies.The Vale Brasil, almost as big as the Bank of America Tower in New York, is scheduled to be at Rio de Janeiro on May 3, tracking data compiled by Bloomberg show. It is the first of a fleet of 19 such vessels that Vale, the world’s largest iron-ore producer, is building to supply China, which buys about 60 percent of all shipments of the raw material used to make steel.

For Rio de Janeiro-based Vale, the new ships ensure it can export more ore at a time when shortages drove prices 84 percent higher in a year. For ship owners, it worsens a glut that caused returns to drop 66 percent since January. A measure of the combined earnings of the 12-member Bloomberg Dry Ships index will fall 23 percent this year, with Genco Shipping & Trading Ltd. reporting a 75 percent decline in profit, according to analysts’ estimates compiled by Bloomberg.

“These sea monsters are going to prolong the slump,” said Erik Nikolai Stavseth, an analyst at Arctic Securities ASA in Oslo whose recommendations on shares of shipping companies returned 27 percent in six months. “It’s going to change the way iron ore flows to China, and it will take longer until the market rebalances,” he said, predicting some rates in the spot, or single-voyage, market may not be profitable until 2015.

Vale’s Chinamaxes, named for the customer they are being built to serve, will displace ships competing for the industry’s single-biggest cargo on its busiest route. The ore is currently hauled mostly by capesizes, which use shipping lanes around South Africa’s Cape of Good Hope and Chile’s Cape Horn. Returns for owners of capesizes, which have less than half the carrying capacity of a Chinamax, are at $6,755 a day, according to the Baltic Exchange in London, which publishes daily rates for more than 50 maritime routes. The assessment is for contracts in the spot market. Ship owners also lease their vessels on long-term contracts at fixed rates. Owners of capesizes valued at $60 million need $25,000 a day to cover expenses such as crew and financing, according to HSBC Shipping Services Ltd. Variable financing costs mean companies have different break-even rates, and while the cost of a new capesize averaged $59 million over the last decade, it reached $97 million in 2007, according to Clarkson Research Services Ltd., a unit of the world’s largest shipbroker. Forward-freight agreements, traded by brokers and used to bet on or hedge future transportation costs, anticipate rates no higher than $20,268 a day through 2016, Baltic Exchange data show. Rates are volatile, rising or falling 17 percent or more in each of the last 12 quarters.

Vale ordered its Chinamax fleet from Cayman Islands-based China Rongsheng Heavy Industries Group and Seoul-based Daewoo Shipbuilding & Marine Engineering Co., Clarkson data show. The mining company wants to better manage its costs after capesize rates averaged $116,054 a day in 2007, up from $11,928 in 2002. Returns slumped from a peak of $233,988 in June 2008 as the worst global recession since World War II cut the number of cargoes and a growing glut of ships were produced at yards in China, Japan, South Korea and the Philippines. There are 1,085 capesizes in service, with an order book equal to 40 percent of the capacity of the fleet, according to Redhill, England-based IHS Fairplay, which compiles data on ships and ports. The average capesize can carry about 170,000 tons of cargo, compared with 400,000 tons for a Chinamax. Vale’s fleet will have a combined capacity of 11.4 deadweight tons when complete, according to Clarkson data. That compares with 217.1 million

deadweight tons for the capesize fleet. China imported about 10.9 million metric tons of iron ore a month from Brazil last year,customs data show.

"They wanted to take freight into their own hands, but freight costs are incredibly low right now," said Jeffrey Landsberg, president of Commodore Research in New York. "They made the decision when capes were earning over $100,000 a day or $200,000 a day, but when you have capes at $6,000 a day, it doesn't make sense for a miner to be an owner too." Vale's strategy may save money over the two decades or more the vessels will operate. Costs on the route to Qingdao in China from Tubarao in Brazil have risen or fallen at least 29 percent every year in the last decade, Baltic Exchange data show. Global trade in iron ore will advance 7 percent to 1.06 billion tons this year, from 450 million tons in 2001, London- based Clarkson estimates. About 90 percent of global trade moves by sea, according to the Round Table of International Shipping Associations.

China, the world's biggest steelmaking nation, sought to curb inflation through four interest-rate increases since October, its economy will still expand 9.5 percent this year, according to the median of eight economists' estimates compiled by Bloomberg. The U.S. will grow 2.9 percent and the euro region 1.7 percent, the estimates show. Iron-ore prices will average a record $164 a ton this year, up from $115 in 2007, Sydney-based Macquarie Group Ltd. said in a report in January. Global steel demand will expand to 1.44 billion tons in 2012, from 1.28 billion tons in 2010, with 38 percent of the increase coming from China, the Brussels-based World Steel Association estimates. China accounted for 43 percent of Vale's iron-ore exports by volume last year, and the company has said it will spend $720 million on shipping this year to serve Asian clients. Vale will report adjusted net income of $25.1 billion this year, compared with $17.1 billion in 2010, according to the mean of nine analysts' estimates compiled by Bloomberg.

While shares of the company fell 4.6 percent in Brazilian trading this year, every single one of the 19 analysts tracking Vale rate it a "buy." It is trading at about 7.8 times estimated earnings, compared with a peak of 22 times in November 2009, data compiled by Bloomberg show. That contrasts with this year's 10 percent drop in the Bloomberg Dry Ships Index, now trading at 11 times forecast earnings. A measure of combined earnings per share across the index will drop 23 percent this year, according to data compiled by Bloomberg using analysts' forecasts. Nine of the 12 members of the index will report

lower profit or losses this year, the data show. Genco, based in New York, will earn 81.2 cents a share this year, down from $4.07 last year, the mean of 11 analysts' estimates shows. The shares fell 41 percent since the start of January. Capesizes account for about 40 percent of its fleet capacity, company data show.

Genco operates mostly in the time-charter rather than spot market and has a combination of fixed and index-linked rates in those agreements, Chief Financial Officer John C. Wobensmith told a conference in New York on March 22. Six of its nine capesize time charters expire this year, and the remainder in 2012, company data published that day show.

Delays in the delivery of new vessels and accelerated scrapping means the fleet may not expand as quickly as expected, Wobensmith told the conference. Even the rebound to $20,000 a day in returns anticipated by forward-freight agreements would still mean a return on capital of no more than 4 percent for a capesize costing $55 million, according to Andreas Vergottis, the Hong Kong-based research director at Tufton Oceanic Ltd., which manages the world's biggest shipping hedge fund. "The first of these ships loading in Brazil is a seminal moment," said Nigel Prentis, head of research at HSBC Shipping Services in London. "We've seen a reduction in the amount of spot cargoes coming out of Brazil. The market should be fairly nervous about the introduction of these ships." **Source: Alaric Nightingale, Bloomberg**

Vale giant ore ship makes maiden arrival in China

China has received the first of Vale's giant iron ore vessels, industry sources said on Wednesday, a major breakthrough for the Brazilian miner after months of uncertainty over the fleet's access to the world's top steelmaker, Reuters reports. Top iron ore exporter Vale is spending billions of dollars to build the world's biggest dry bulk ships to cut the cost of shipping the steelmaking ingredient to China, but until now had failed to gain Beijing's approval for the six vessels already on the water to even stop at a Chinese port.

Reuters Freightviews and independent shipping data showed Vale's vessel, **Berge Everest**, anchored off China's Dalian port with its draught measurements indicating it was fully loaded with cargo. Industry sources said there was 350,000 tonnes of iron ore onboard, but it was not clear whether the vessel had clearance to unload. Vale officials in China and Brazil declined to comment on Wednesday. A spokeswoman for the ship's owner, Singapore-based Berge Bulk, and Dalian port officials were not immediately available for comment.

Vale's fleet has faced stiff opposition from influential Chinese shipowners and steelmakers, who fear the ships are a Trojan Horse which the miner will use to monopolise both the shipping and iron ore markets at their expense.
"Vale's ships won't break any company, but it will be damaging," said a Singapore-based ship broker said on Wednesday. Vale's first mega bulk vessel, Vale Brasil, was forced to turn around in the Indian Ocean on its maiden voyage in June after the Chinese government failed to provide permission for the ship to dock at Dalian. It went to Taranto, Italy, instead.

The arrival of the **Berge Everest** could not come at a worse time for Chinese shipowners, already struggling with a severe downturn in the industry driven by rock bottom freight rates, high bunker fuel prices and an oversupply of

ships. Things got so bad that China's top shipping conglomerate COSCO Group and Grand China Logistics were forced to temporarily halt payments to foreign ship owners earlier this year to renegotiate better terms. China Shipowners Association urged Beijing this month not to rush into any decision on Vale's ships, warning that they have not been thoroughly tested and any oil leak from one could be catastrophic. "The China Shipowners Association has been aware of this since Monday and now is trying to get a clear picture of the whole story," an industry source said. One of Vale's vessels, **Vale Beijing**, became severely damaged while preparing to set sail on its maiden voyage earlier this month.

Vale is planning to build a fleet of 35 giant vessels, each with capacity of around 400,000 tonnes, to feed top importer China's growing demand for the commodity. The firm aims to ship around 130 million tonnes, or 40 percent of its total iron ore output, to China next year. China is expected to import a total of around 720 million tonnes of iron ore in 2012, up from 679 million tonnes this year, according to a Reuters poll. China consumes over a billion tonnes per year of iron ore. Shipping data

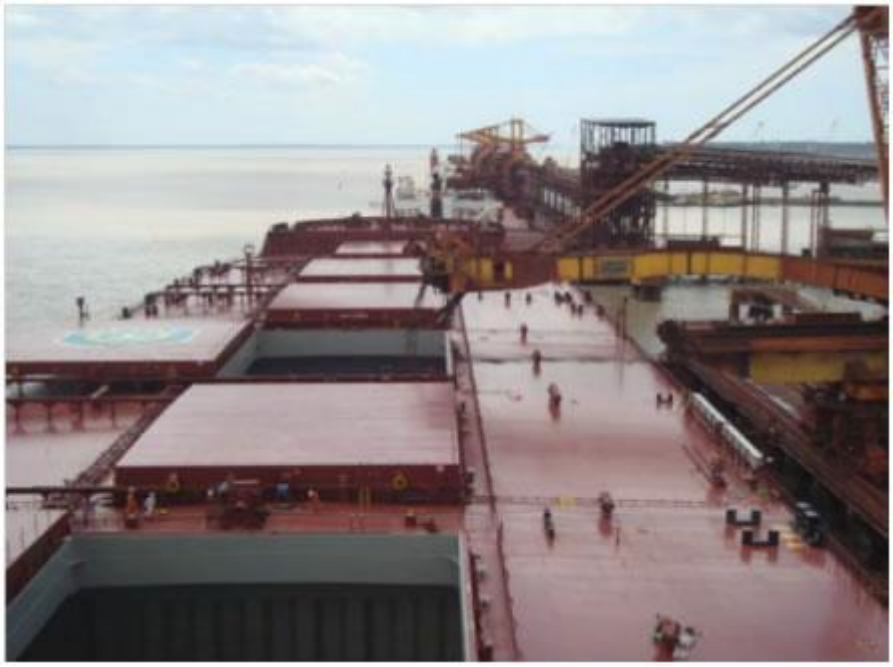
this week initially showed the **Berge Everest** destined for a port in the Philippines after a brief stop earlier in Singapore.

"For the past few days, it was drifting around the Phillippines area awaiting instructions," said T.S. Ang, technical executive at BW Fleet Management, which manages the crew and safety operations on Berge Everest. He was unable to confirm the ship's current location. **Source : PortNews**

Vale loads the world's largest ore carrier for the first time

The world's largest ore carrier, **Vale Brasil**, was loaded for the first time (Tuesday, May 24) at Pier I at Ponta da Madeira Port Terminal (TPPM) in São Luís, Maranhão. The ship, which was loaded with 391,000 tons of iron ore, will now sail for Asia.

Vale Brasil is the latest milestone in Vale's long history of investment in infrastructure, a key element for the competitiveness of Brazilian iron ore on the international market. "We don't stop investing and innovating. Vale's investments in infrastructure are the biggest ever made in the country, resulting in efficient logistics for our customers. We invested US$9 billion over the last six years and, in 2011 alone, a further US$5 billion will be invested in the integrated mine-railroad-port-shipping chain," explained Integrated Operations executive director, Eduardo Bartolomeo. **Vale Brasil** was ordered by Vale from Daewoo Shipbuilding & Marine Engineering Co in South Korea. It is the biggest ore carrier in the world, with a 400,000-ton capacity, 362-meter length and 65-meter width. **Vale Brasil** is the first of seven ore carriers ordered by Vale from the South Korean shipyard, totaling an investment of US$748 million.
Vale has also ordered 12 ships each with a capacity of 400,000 tons from the Rongsheng Shipbuilding and Heavy Industries shipyard in China. These vessels, being built at the Chinese shipyard, involve a total investment of US$1.6 billion.



A highly efficient logistics infrastructure is a key element for competitiveness in the iron ore market. In order to maximize the efficiency of its operations and meet growing global demand, Vale is developing various initiatives to obtain economies of scale. The ordered vessels will be part of the logistical solution between the company's maritime terminals in Brazil and Asian customers. The ore carriers have a high standard of safety and will contribute to reducing the cost of long haul maritime transportation of iron ore to steelmakers.

Besides owning 19 400,000-ton ships, Vale will have an additional 16 ships with the same dimensions, which will operate exclusively for the company under long-term contracts signed with ship owner partners. These 35 ships are due to be delivered between 2011 and 2013. "With our fleet of our own and chartered ships, we will be able to reduce volatility in the freight market. Volatility does not only affect the freight cost, but also the price of ore itself. As the new ships come into operation, the freight and ore costs will become more stable, benefiting Vale and its steelmaking customers," said Marketing, Sales and Strategy executive director, José Carlos Martins.

From the concept to the basic design, the engineering involved in the world's biggest ore carriers is Brazilian. Developing the design represented an enormous technological challenge and involved considerable innovation, and the desired results were achieved. Vale Brasil enables faster loading and unloading, is suitable for the most modern ports in the world, and produces 35% less carbon emissions per ton of ore transported.

Over the last two years, Vale has ordered the construction of 51 vessels, including tug boats, barge trains and catamarans, from domestic shipyards, helping to develop the Brazilian shipbuilding industry, generating 2,465 direct and indirect jobs, and involving investment of R$403.9 million. In all, 15 tugboats have been ordered in Brazil – 11 built at the Detroit shipyard in Itajaí (Santa Catarina) and four at the Santa Cruz shipyard in Aracaju (Sergipe). Of this total, 13 vessels have already been delivered to Vale. The tugboats will be allocated to operations at Tubarão Complex (Espírito Santo), Ponta da Madeira Maritime Terminal (Maranhão), Ilha Guaíba Terminal (Rio de Janeiro), Vila do Conde Port and Trombetas Port (Pará). With the new fleet, Vale will now operate a total of 29 tugboats.

The new tugboats are powerful and have a good maneuvering capacity, and this will contribute to enhancing the productivity of ports, as well as improving safety for docking and undocking maneuvers for the largest ore carriers that currently operate in the world. By building these ships, 1,530 new direct and indirect jobs will be generated.

Besides the tugboats, two barge trains are being built at the Rio-Maguari shipyard in Pará, composed of two push boats and 32 barges, and two catamarans at the Arpoador shipyard in Angra dos Reis, to transport employees from Ilha Guaíba Terminal, totaling 51 vessels. The orders will be delivered before the end of this year. Building the barges and catamarans will generate 695 direct jobs and another 140 indirect jobs. **Source : WebWire**

Inséré le 20 février Logboek Supprimé le 20 mars 2013

Piraterie - Piraterij

Au Moniteur Belge du 30 janvier 2013 a été publiée la loi portant diverses mesures relatives à la lutte contre la piraterie maritime.

Cette loi régit en détail l'embarquement et le mode d'intervention de milices privées à bord des navires battant le pavillon belge.

Le lien suivant donne accès au texte de la loi:

https://www.mobilit.fgov.be/data/aqua/WL130116a.pdf

Cette initiative du gouvernement belge autorisant la protection passive rencontre les souhaits depuis longtemps exprimés par les armateurs belges et les équipages des navires transitant par des mers que la piraterie a rendu peu sures voire dangereuses;

Op 30 januari 2013 is in het Belgisch Staatsblad de wet verschenen houdende diverse maatregelen betreffende de strijd tegen de piraterij.

Deze wet bepaalt de voorwaarden die nageleefd dienen te worden voor de inscheping van privé milities en voor hun wijze van tussenkomst à boord van schepen die de Belgische vlag voeren.

De volgende link geeft toegang tot de betreffende wettekst:

https://www.mobilit.fgov.be/data/aqua/WL130116a.pdf

Met dit initiatief betreffende de passieve bescherming gaat de Belgische regering in op de wens menigmaals uitgedrukt door de reders en de bemanningen van schepen die zeegebieden doorkruisen die de piraterij onveilig, ja zelfs gevaarlijk maken.

Inséré le 22 février BOEKEN Supprimé le 22 mars 2013

Strijd om de stroom: een politieke geschiedenis van de Schelde

Van de hand van Professor Eric Van Hooydonk, voorzitter van de "vzw Watererfgoed Vlaanderen" verscheen zopas *Strijd om de Stroom*. Het is een vlot leesbaar, rijk geïllustreerd en klasserijk uitgegeven boek van 392 pagina's, dat het unieke verhaal vertelt van de Scheldepolitiek, van de Romeinen, over de sluiting van de rivier door Holland en Zeeland en de recente verdieping van de vaargeul, tot een stukje in de toekomst. Het boek is gepubliceerd in het raam van de viering van de 150ste verjaardag van de afkoop van de Scheldetol in 1863.

Het boek oogstte ondertussen lovende kritieken. Een uitvoerig tv-interview met de auteur en Antwerps havenschepen Marc Van Peel en twee volle pagina's over het boek uit Gazet van Antwerpen kan je hier bekijken. Voor groepsbestellingen door onze leden en maritieme organisaties biedt co-uitgever Pandora Publishers een gereduceerde prijs aan (info bij christophe.valkeniers@pandorapublishers.eu).

De toonaangevende cultuurboekenuitgever Davidsfonds zorgt voor de individuele verkoop via verkoop@davidsfonds.be en de winkels van Boekbedrijf Christiana, Brugse Boekhandel, Walry, De Boekuil, Beatrijs, Standaard Boekhandel, De Plukvogel, Malpertuis, Salvator, Vanooteghem, Bert Van Sande, De Groene Waterman, De Kleine Prins, Limerick, Medio-Azur, Erik Tonen Books Antiquariaat, Van In Boekhandel, Van Venckenray, Fnac Belgium, Boekenmarkt De Markies en De Zondvloed.

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Fred.Olsen – going green with trim technology

Over the last eighteen months shipping company Fred.Olsen has been trialling a trim optimisation system which aims to reduce fuel costs by up to 5 per cent. Amanda Slade, Fred.Olsen Marine Services, told Digital Ship about the company's experience with the technology.

In the current shipping market, 'green' technologies are fast becoming one of the most popular innovations for companies that are looking to improve efficiency while also staying mindful of their responsibility to protect the environment, both at sea and ashore.

Norwegian operator Fred.Olsen has always prided itself as an innovator in this regard, and has a policy of pursuing the 'greenest' technologies available to use onboard its ships.

Fred. Olsen's Braemar has optimised its trim using Fugro's Marinestar MS system

Building on a heritage that stretches back over 160 years to 1848, when Petter Olsen founded the company, Fred.Olsen now operates a wide ranging fleet of vessels across a variety of sectors.

Among these are the four vessels that form Fred.Olsen Cruise lines, and over the course of the

last 18 months the company has completed the trial and installation of a new trim optimisation system from Fugro which it will use to reduce its use of fuel by up to 5 per cent – and consequently produce a significant reduction in the carbon emissions created by its ships.

The trim of a vessel affects the total resistance of the vessel through water, so for different loading conditions and speeds there is an optimum trim value. If the vessel is not sailing at or near the optimum trim, it is experiencing more resistance and thereby using more power and fuel.

Fugro's Marinestar MS system measures the trim of the vessel at sea using sensors mounted on the ship, and this information is then presented graphically to the user alongside the speed.

The software provides the option to configure the optimum trim values based on draft and speed of the vessel, which is compared with the actual ship's trim to advise the user on any changes that would improve efficiency.

According to Amanda Slade, safety and security manager with Fred.Olsen Marine Services, which provides the technical support for the cruise vessels, the company has been impressed with the performance of this system since an initial trial installation was performed in March 2010.

"I think within the first few months we realised that this was something we wanted," she told us.

"We are actively pursuing every green technology there is out there, and Fugro offered us a new option in this regard."

"Across the spectrum of energy saving technologies that are available to ships now, there are a range of technologies that can impact on ship efficiency but there aren' t a lot of players in the 'dynamic trim' market."

Enhancing existing skills

The concept of operating the vessel with the most efficient level of trim possible is not a new one, and is something that navigators onboard ship have been doing intuitively for a very long time.

However, the application of advanced positioning and the computational abilities of software systems to the process allows those operating the ship to apply their own skills with a higher level of accuracy – and thus improve vessel efficiency.

"Understanding where your ship is positioned in relation to the x-y-z axis has always been very important," notes Ms Slade.

"Experienced navigators over hundreds of years understood how their own ship was trimmed, even without the availability of these supporting technologies."

"Where this has been advanced has been in giving the shipboard navigator a tool to understand much more precisely where the ship is in that x-y-z axis."

In addition to this enhanced accuracy in trim calculation, the use of these technologies also reduces the amount of time required for bridge officers to decide on any required changes in their trim management, and allows them to focus instead on other aspects of running the ship.

"We want to keep the focus on safety, and this has allowed us to provide a tool to the navigators on the bridge that they can use on an ongoing basis to allow them to do that," said Ms Slade.

"Within seconds they can look at the display and be aware of the situation, of whether the ship is in good trim or needs adjustment."

Following that first trial installation aboard the cruise ship M/V Braemar, Fred.Olsen has since committed to a second installation, on the M/ V Boudicca, which is currently being completed under the management of the technical superintendent.

While it is still the Marinestar MS system that is being employed, Ms Slade notes that the software has been customised in collaboration with Fugro over the course of the last 18 months to create a tool that is specifically tuned to the vessels' particular needs.

“Fugro worked with us through this process, we collaborated with them and provided a lot of feedback about how the system was operating,” she said.

“They took that on board and introduced a number of improvements, and I think this process will continue as we try to evolve and improve even further going forward.”

“If we can achieve an extra 0.1 per cent in fuel savings, the return is significant enough to justify the effort.”

Technology

The Marinestar MS system from Fugro uses two independent combined differential GPS/GLONASS receivers installed on a vessel – one forward and one aft – to determine ship’s position. With this long baseline, the ship is effectively navigated independently at both the bow and the stern.

The receivers are also able to share differential corrections with each other, adding a level of robustness to the system. Fugro operates its own GPS/GLONASS differential corrections service, which is integrated into the system and received using spot beam antennae.

Using these different satellite systems and applying the additional corrections allows the service to provide a global sollution with a horizontal and vertical accuracy of 10-15 cm – and having an accurate real time calculation of the vertical positioning of both ends of the ships allows the trim to be calculated to an accuracy of better than 5 cm.

The ability to perform these calculations dynamically while the vessel is undertaking a voyage is where a system such as this one can provide value to a navigator, as Haydn Jones, marketing director at Fugro Satellite Positioning, explains.

“It’s not that easy to work out the trim with the vessel moving up and down with the waves,” he said.

“In the past you could work out the trim alongside the quayside in port without too much difficulty, but to try and do it at sea is the step forward.”

Knowing the actual trim of the vessel at any particular moment represents only half of the process in improving the efficiency of the vessel, of course – this must then be compared to the optimum trim, the trim level at which the vessel will encounter the least resistance and will use the least amount of power and fuel.

As the ship’s navigators adjust the actual trim to approach the optimum trim the efficiency of the vessel’s fuel usage will increase.

In the case of the vessels Braemar and Boudicca, Fred.Olsen was able to provide its own optimum trim figures, provided by the ship yard, for use by the software onboard. However, not every vessel operator is in possession of these figures relative to its own ships.

This situation prompted Fugro to update its Marinestar product with the addition of vessel trim tables provided by Det Norske Veritas (DNV), to allow the system to be applied on a wider range of vessels.

Under this agreement DNV Ship Hydrodynamics provides technical advisory services on the calculation of optimum vessel trim in a range of circumstances.

Using information about hull geometry and loading conditions, DNV carries out an optimum trim assessment using a combination of two Computational Fluid Dynamics analysis tools (‘potential flow and ‘RANS’) running on a high performance computer cluster.

The DNV study is required for one ship type and can then be used for any other sister vessel.

This latest version of the Marinestar system, incorporating compatibility with DNV’s data analysis, was released in March of 2011.

“Some companies may find it difficult to acquire this trim data, which is why we have reached an agreement with DNV who are able to calculate optimum trim based upon hull form analysis and resistance calculations,” said Mr Jones.

“A basic dynamic trim function was included in the software at the beginning of the trial with Fred.Olsen, but based upon feedback and requirements from Fred.Olsen improvements to this were made, in particular to display the optimum trim for the vessel.”

“We are now making further enhancements to trim functionality to display a target trim range rather than just a single target figure.”

“According to DNV’s calculations they say that theoretically it should make a difference of about 2 to 5 per cent in fuel reduction, based on their mathematical models. But even a much lower figure would still justify the use of this kind of technology.”

For Fred.Olsen that justification has been twofold – allowing the company to continue in its pursuit of the latest ‘green’ technologies, while also providing the added bonus of reduced costs and more efficient operations.

DigitalShip

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Zeeslag op de Schelde

Zoals bekend beschikte België in de jaren dertig niet meer over een oorlogsmarine. Pas in september 1939 kwam daar verandering in. Onder invloed van de toenemende oorlogsdreiging werd in die maand immers het Marinekorps opgericht. Deze kleine zeemacht is vooral bekend door de in Oostende gebaseerde loodsboten die met beperkte middelen de Belgische territoriale wateren probeerden mijnenvrij te houden. Deze loodsboten behoorden tot het 1 ste escadrille.

Minder bekend is dat ook in Antwerpen een deel van het Marinekorps gevestigd was: het 3de escadrille. Dit was een erg bescheiden eenheid, die slechts 37 manschappen telde, en onder bevel stond van commandant Jacques Delstanche. Ze waren gevestigd in de Falcon-kazerne. Vóór de Duitse inval van 10 mei 1940 beschikte het escadrille slechts over één vaartuig, de uit 1909 stammende Police de la Rade III, die op 5 december 1939 door het Bestuur van het Zeewezen aan het Marinekorps werd overgedragen. Het toen 31 jaar oude vaartuig, dat voorheen nog dienst had gedaan bij de dienst voor kust- en stroomverdediging en het Corps de Torpilleurs et Marins, bleek echter niet meer te kunnen varen. In de loop van februari 1940 werd het een grondige onderhoudsbeurt gegeven, waarbij de machines werden hersteld. Het vaartuig werd ook uitgerust met twee mitrailleurs. Vanaf eind februari 1940 zette men het in voor trainingsvaarten op de Schelde. Verder beschikte het escadrille nog over één 47mm kanon, vier mitrailleurs en 45 lichte wapens. De Brabo enige taak van de eenheid was het theoretisch voorbereiden op eventuele vijandelijkheden.

De Duitse invasie van 10 mei 1940 bracht daar verandering in. Het derde escadrille zou actief gaan deelnemen aan de verdediging van de Beneden-Schelde. De organisatie van de verdediging van de Beneden-Schelde was op het moment van de Duitse inval echter nog ver van voltooid. Het zou tot 14 mei duren, vooraleer de andere legeronderdelen met deze taak hun posities hadden ingenomen. Daarom hield het personeel van het Derde Escadrille zich voorlopig bezig met de verdediging van de Falcon-kazerne tegen "des éléments subversifs ". Hiertoe werden twee van de mitrailleurs opgesteld en wachtposten uitgezet. Intussen werd -als een gevolg van de algemene mobilisatie- het effectief van het Derde Escadrille gevoelig verhoogd tot vijf officieren, zeventien onderofficieren en 73 manschappen.


Brabo II

Op 14 mei kreeg het escadrille het bevel van de commandant van de Beneden-Schelde om zo snel mogelijk een vloot van snelle en bewapende patrouillebootjes bij elkaar te rapen, om de lijn Oudendijck-Doel te bewaken. Onmiddellijk werd gezocht naar geschikte eenheden. Het Bestuur van het Zeewezen leverde de Brabo en de Tolwacht. Dit waren motorboten die gebouwd waren in respectievelijk 1928 en 1929, en een snelheid konden halen van 15 knopen. Van de onderneming 'Brabo Havenloodsen en bootslieden' werden de motorsloepen Brabo II en Brabo III opgeëist. Deze eenheden hadden een waterverplaatsing van ongeveer 7 ton en hadden een topsnelheid van 5 knopen.

Ze dateerden beiden van 1933. Tenslotte werd ook het jacht Restless, dat toebehoorde aan een particulier, in gebruik genomen.

Dezelfde dag nog brachten de mariniers wapens, munitie en proviand aan boord. De installatie van mitrailleurs leverde wel problemen op, omdat er op de vaartuigjes geen enkele voorziening was voor een dergelijke installatie. Verder werden ook zandzakjes aan boord genomen, om in de bescherming van de bemanning te voorzien. Het mag benadrukt worden dat het theoretisch mobilisatieplan van Delstanche in de praktijk goed werkte: op minder dan twaalf uur werd de 'vloot' van het Derde Escadrille bij elkaar gezocht en uitgerust!

Rond 18 uur vertrokken de Tolwacht en de Brabo richting Doel, drie uur later gevolgd door de Restless. Luitenant D'Hauwer van het Derde Escadrille was de drie vaartuigen voorafgereisd, om de bevelhebber van de Franse troepen, die zich inmiddels op de linker-Scheldeoever hadden ingegraven, te verwittigen van de komst van het escadrille. De Franse commandant verzekerde hem dat de vaartuigen niet zouden worden beschoten.

Rond 22 uur gaf dezelfde commandant de Tolwacht en de Brabo het bevel (de Restless was nog niet aangekomen) om een patrouillevaart te maken. Wanneer beide vaartuigen een tijdje later opnieuw de haven van Doel wilden binnenvaren werden ze onthaald op hevig mitrailleur- en geweervuur van een eenheid Franse troepen, die nog maar net waren gearriveerd, en niet op de hoogte waren van de aanwezigheid van de Belgische vaartuigen. Gealarmeerd door deze schoten werd van op het Fort Frédéric op de rechteroever een lichtpijl afgeschoten waardoor de Belgische troepen op de

rechteroever ook het vuur begonnen te openen, wat de situatie nog verergerde. Gelukkig was dit laatste vuur niet al te intens. Na enkele ogenblikken werd de fout ingezien en het bevel gegeven het vuur te staken. Ondertussen waren beide vaartuigen echter al zwaar beschadigd. De bemanning van de Brabo slaagde er nog in om, door de machines te forceren, de haven van Doel te bereiken. De minder fortuinlijke Tolwacht liep echter op tweehonderd meter stroomafwaarts van Doel aan de grond.

Door de aanwezigheid van zandzakjes aan boord van de vaartuigen was het aantal menselijke slachtoffers bij dit incident beperkt gebleven. Enkel de matrozen Boriale en Grijsperdt van de Brabo werden gewond. Ze werden zo snel mogelijk overgebracht naar het Antwerpse St-Elisabeth ziekenhuis.

Ook de Restless had geen geluk. Door de duisternis en door de snelheid van het jacht, voer de schipper, zonder er zich van bewust te zijn, de haven van Doel voorbij en strandde op de zandbank van Saeftinge. Het jacht werd daar onder vuur genomen door een Duits antitankkanon. Bij hoog water kon het weer loskomen en probeerde het Doel te bereiken, waar het gebombardeerd werd door vliegtuigen. De informatie over de aanwezigheid van Duitsers op de rechter-Scheldeoever ter hoogte van Zuid-Beveland werd overgemaakt aan de Franse bevelhebber.

Omwille van het beperkte succes en de slachtoffers kreeg het Derde Escadrille het bevel om de patrouilles langs de Belgisch-Nederlandse grens stop te zetten, en terug te trekken naar Antwerpen. De Brabo en de Tolwacht slaagden erin om op eigen kracht de Scheldestad te bereiken. De Restless, die een aantal averijen had opgelopen, bleef voorlopig in Doel, en zou nadien naar Antwerpen gesleept worden. In afwachting van de herstelling van deze eenheid, werd hij vervangen door een ander jacht, de La Prairie.

Op 15 mei kreeg het Derde Escadrille een nieuwe opdracht. Omdat de Duitse Wehrmacht Antwerpen naderde, moest het instaan voor vernielingswerken aan de Antwerpse rede. Alle vaartuigen en al het bruikbaar havenmaterieel moest ofwel onklaar gemaakt worden ofwel geëvacueerd worden, zodat het niet in Duitse handen kon vallen, en zodat een eventuele Duitse overtocht over de Schelde gehinderd zou worden. Ook werd aan boord van een aantal pleziervaartuigen van de Antwerpse rederij Flandria een bemanning geplaatst van burgers en mariniers, om de overzetveren van Hemiksem en Burcht bij te staan.

Voor de evacuatie van materiaal van de rechter- naar de linkeroever werden door het havenbestuur vijf spitsen en vijf sleepboten ter beschikking gesteld. Heel de uitrusting van het Marinekorps werd eveneens naar de linkeroever overgebracht. Enkel de commandopost bleef, om de verbindingsproblemen niet te verergeren, in de Falcon kazerne.

Op 17 mei kwamen de vernielingsen evacuatiewerken in de Antwerpse haven pas goed van de grond. De Police de la Rade III evacueerde eerst nog twee Flandria pleziervaartuigen die zich aan de aanlegsteigers van St-Anneke en het Noordkasteel bevonden, om nadien deze aanlegsteigers onklaar te kunnen maken. Daarna evacueerde het vaartuig al het bruikbaar materiaal van het Loodswezen. In de namiddag bracht de Police de la Rade III vernielingsploegen rond onder leiding van 1ste meester Celis, die de motoren van de havenvaartuigen Amstel, Stad Amsterdam, Purfina I, Catherine II en Watergeus saboteerden. Ook de Flandria-plezierboten 6, 12 en 13 en het overzetveer Durme werden onklaar gemaakt. De Restless, die ondertussen hersteld was, kreeg de opdracht om de stoom bij alle schepen af te laten, zodat het langer zou duren om ze te kunnen opstarten. Daarna ging men over tot het saboteren van alle pleziervaartuigen in de jachthaven, een werk dat tot middernacht duurde.

Hoofdzakelijk onder leiding van personeel van het Marinekorps werden de overzetveren te St-Anneke, Burcht, Hemiksem en aan de Kruisschans versterkt of vervangen door onder andere de Flandria-boten 2,3 en 10, de stadssleepboot 25 en de sleepboten Namur en Oostende.

In de ochtend van 18 mei kreeg het Derde Escadrille het bevel om terug te trekken naar de kust via de binnenwateren. Er werd zoveel mogelijk materiaal aan boord van de patrouillevaartuigjes

genomen. De Police de la Rade III, die door een te grote diepgang en een te hoge opbouw de doortocht langs de kanalen niet zou kunnen maken, werd leeggeplunderd en gesaboteerd.

Het escadrille vertrok via de Schelde stroomopwaarts richting Temse, waar kapitein-commandant Delstanche — die over land reisde om de doortocht te organiseren — het opwachtte. Ter hoogte van Hemiksem werden de vaartuigen beschoten door een aantal Belgische wachtposten, die dachten dat het om Duitsers ging. Gelukkig vielen er hierbij geen slachtoffers. In Temse aangekomen ontving men het bericht dat het Duitse leger Willebroek al bereikt had. Om niet de pas afgesneden te worden, vertrok het escadrille onmiddellijk richting Gent. Na een aantal problemen aan de sluis van Gentbrugge ging de tocht verder, via het kanaal Gent-Brugge en het kanaal Brugge-Oostende, richting kust. Aan de spoorwegbrug van Steenbrugge werd een laatste hindernis ondervonden. De stationschef weigerde er de brug, te openen, omdat hij het bevel had gekregen om Franse militaire treinen de absolute prioriteit te verlenen. Delstanche, die van kolonel De Pauw van de Base Maritime de volmacht had gekregen om desnoods met geweld de brug te laten openen, kon de stationschef uiteindelijk overtuigen. De 19de mei, om acht uur `s avonds, bereikte het escadrille de haven van Oostende. Majoor Decarpentrie gaf aan het personeel van het Derde Escadrille onmiddellijk het bevel om de riviervaartuigen achter te laten, en met hun uitrusting en wapens de verschillende boten van het Eerste en Tweede Escadrille te vervoegen. Hierdoor hield het Derde Escadrille feitelijk op te bestaan.

De riviervaartuigen van het escadrille werden enkele dagen later door een Franse militaire missie tot zinken gebracht in het kanaal Brugge-Oostende.

J. Van Raemdonck

NEPTUNUS JULI - JUILLET 2000

Inséré le 26 février OPEN FORUM Supprimé le 26 mars 2013

Improving business visibility and reducing costs

Fleet owners and operators face an increasingly difficult challenge. It is critical that they have an `always available' communications channel for shore-to-ship and ship-to-shore messaging and vessel reporting*.

This has generally required paying for costly services, such as machine-to-machine (M2M) satellite communications to guarantee a two-way data pipe and deliver near-guaranteed vessel reporting during the period when a vessel is in open water. The problem with this approach is that the typical vessel spends as much as 20% of the time near to the shore. Alternatively, fleet managers can now use multiple communications modes to significantly increase fleet reporting while cutting overall costs by more than 50% as compared to satellite-only methods.

PortVision data can now be accessed on a laptop, or a Blackberry.

There are four primary methods for maintaining fleet communications, each with its own advantages and disadvantages. The first is VSAT, an always-on satellite service that delivers low-bandwidth vessel communications without imposing incremental new data fees.

If already on board, VSAT supports enhanced satellite-based vessel reporting. But if it's not already being deployed for other uses, it can be very costly to implement VSAT for this application alone.

The second method is commercial satellite providers, such as Iridium or Inmarsat-C, which use satellite communications for periodic position reporting, text messaging, and compliance with International Convention for the Safety of Life at Sea (SOLAS) requirements, including the Global Maritime Distress and Safety System (GMDSS) and other standards. While Inmarsat-C delivers global satellite-based vessel reporting, its cost per byte, or character, is very high and it supports only a few vessel reports per day.

Cellular is the third mode of fleet communications. It combines high bandwidth with low cost and can be used when vessels are near the shore, or in port. The advantages of cellular communications include its high reporting frequency with very low data costs, but it cannot be used for vessel reporting at sea.

The fourth communications method is Automatic Information System (AIS), which uses the ship's collision-avoidance signals for near-real-time reporting at no cost. AIS users can implement real-time vessel reporting and alerting both near shore and, with satellite-based AIS, on the open water. The disadvantage of AIS is that it can only be used for one-way communications and does not currently support shore-to-ship messaging.

Rather than choosing only one of these four communications modes, the ideal solution for fleet owners and operators is to create a comprehensive vessel reporting solution that includes a mix. A hybrid solution enables fleet managers to cost-effectively achieve realtime (or near-real-time) messaging and position reporting when vessels are near the shore, while limiting the use of more expensive satcom technology to those periods when vessels are at sea.

This is the approach that Houston-based PortVision has taken with its TriMode service. The web-based fleet management system extends the company's AIS-based offering to include two-way cellular and satellite service for messaging and position reports. The system then uses `least-cost routing' (LCR) over all available modes to direct traffic over the most cost-effective communications paths. The advantage of this approach is that higher-cost satellite communications pipes are only deployed when lower-cost alternatives are unavailable.

With a multi-mode communications strategy, fleet owners and logistics personnel can use low- or no-cost cellular and AIS communications for near-real-time information about vessel movements when ships in the fleet are near port, which is when logistics complexity is highest and numerous resources must be managed. This gives voyage management and back-office personnel complete visibility into vessel interactions with tugs, pilots, line handlers, docks and a variety of associated marine service providers. By using integrated cellular and AIS communications rather than satellite services for these in- or near-port activities, fleet management can improve visibility and tracking while simultaneous lowering the cost of communication.

A typical application might look like this: AIS is used for real-time reporting of the fleet and other AIS-enabled vessels during those periods when they are near shore or in-port, with no additional communications costs. Available more than 75% of the time in many cases, AIS gives operators visibility not only into their own vessel activities, but those of their competitors, as well, and also enables them to see the availability of critical resources including docks, locks, anchorages, pilots and tugs.

Cellular service is then used for highperformance reporting at a low fixed cost -up to 12 position reports per hour, plus unlimited text messaging while a vessel, or fleet is within the coverage area. Finally, satellite service is used for guaranteed twoway text messaging and position reporting during those periods when the fleet has moved into open water and is beyond either the lowcost or cellular or no-cost AIS coverage areas.

Additional methods

There are a number of additional ways to leverage the power of AIS data in a multimode communications solution. The technology has been used by shore-side maritime personnel to enhance business visibility and operational efficiency since 2005 when it was mandated for use as a collision-avoidance tool. While some AIS services do little more than enable fleet management to view 'points on a map,' the most useful solutions combine real-time visualisation and historical information with a variety of management tools. This enables them to provide a rich and comprehensive look at all relevant vessel traffic in one convenient command-and-control display environnent.

AIS services provide the greatest benefits when they enable users to monitor all activities in user-defined zones and share real-time information with remote participants and other operations centres. With these kinds of capabilities, AIS services can be used by maritime professionals for applications ranging from enhancing safety and efficiency and streamlining vendor and resource co ordination to simplifying traffic scheduling and dispatch management. Many companies are also using AIS service to generate maritime business intelligence, perform demurrage reporting and analysis, accelerate and improve incident response and execute stronger security initiatives.

These applications require access to both real-time and historical AIS data, which is generated from the tens of thousands of merchant ships, worldwide, that carry AIS Class 'A' equipment for transmitting their location reports. The system broadcasts information on a fixed schedule, anywhere from two to 10 seconds to as much as six minutes apart.

Static data

This information includes static data such as the ship's narre, call sign, type, length,beam, antenna location, and its IMO, or maritime mobile service identity (MMSI) number. AIS also broadcasts certain types of voyage-related data, plus a variety of dynamic data including time and the ship's current position, course and ground speed, its gyro heading and rate of turn, and its navigational status.

All of these data points roll up into an enormous source of powerful business intelligenceinformation. To provide an idea of how much data is available, PortVision's AIS data warehouse adds 40 mill vessel position reports daily to a five year database that contains more than 15 bill records related to vessel arrivals,

departures and other movements. All of this real-time and historical data can be used by AIS-based business intelligence systems to improve fleet visibility and enhance operational efficiency, both in real time and as a historical playback tool for such purposes as generating legal forensic evidence, reviewing best practices and developing training programmes.
Fleet owners and operators face escalating communications costs. They typically deploy vessel monitoring and management services across dozens of vessels. Until now, they have used costly satellite services to guarantee an `always available' channel, even though each vessel typically spends considerable time within reach of communications networks that are much less expensive. By using AIS services that are enhanced with multi-mode communications capabilities and LCR technology, fleet managers can achieve enhanced vessel reporting while significantly reducing communications fees as compared to systems that rely solely on satellite services.

The advent of multi-mode communications makes comprehensive fleet management systems more affordable to a broader range of companies and organisations that can now take advantage of their operational and reporting benefits to improve fleet visibility and enhance safety and efficiency.

* This article was written by Dean Rosenberg, CEO, PortVision.

TankerOperators Oct 2011

Live long and prosper!

A shipowner's principle operational aim is to minimise the amount of time a vessel is out of service while scheduling repairs at an optimum moment, neither to soon when maintenance maybe unnecessary nor too late when deterioration may have lead to additional expensive damage.

To date the ability to accurately predict the deterioration of a ship's hull, its structure, coating and components, at a given point in time has largely been a matter of sophisticated guesswork. Getting maintenance timing wrong and incurring the associated costs from time to time, has been considered part of the territory of operating a fleet of ships.

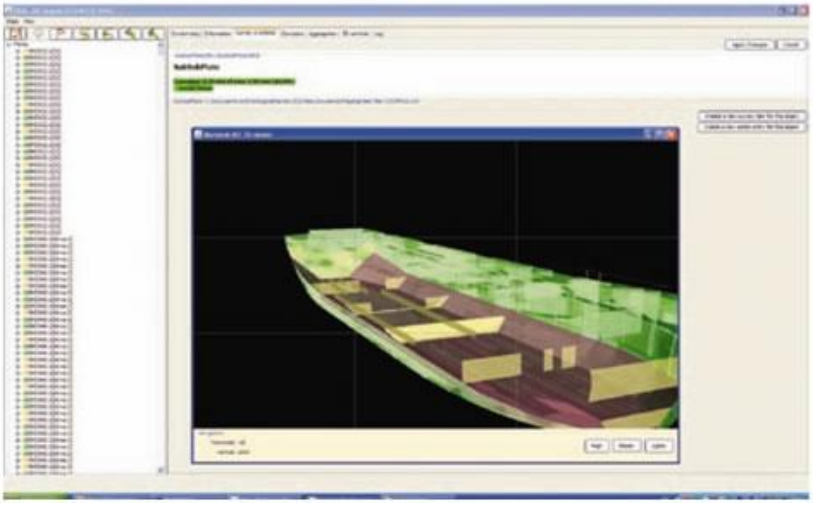
Ben Hodgson, project manager at BMT, describes how the part EU-funded FLAGSHIP-HCA hull condition assessment (see TANKEROperator, January/February, page 47) project has successfully developed a system for extending the life of the existing fleet of tankers and bulk carriers by up to five years, with a 10% to 20% reduction in service repair costs throughout their life-cycle.

Traditionally, the process of inspection and surveying of ships has been based upon the class rules, which define what must be inspected, combined with the knowledge and experience of the individual surveyor. The system has worked extremely well for many years but the information obtained from each inspection does not tend to be used for anything more than assessing a ships current condition, its compliance with class rules and suitability to put to sea at the time of the inspection. In essence, each inspection is a snapshot of a vessel's condition which provides little feedback as to possible issues in the future.

FLAGSHIP's HCA sub-project has developed a framework and methodology designed to encourage the recording of survey data in a way that can be utilised to focus future inspections and extend the service life of vessels. By encouraging a more structured and uniform approach to capturing, recording and sharing data from structural inspections, FLAGSHIP-HCA provides a framework within which elements of a surveyor's specialist knowledge and experience can be captured and utilised far more effectively than at present.

FLAGSHIP is a consortium of more than 40 European maritime organisations taking part in a part EU-funded project which is focused on improving the safety, environmental friendliness and competitiveness of European maritime transport. The project was designed to further increase the capacity and reliability of freight and passenger services and to further reduce the impact from accidents and emissions. The emphasis of the overall FLAGSHIP project is focused on on board systems and procedures, shipmanagement systems on shore, the impact of new technology on present shipowner- and operator organisations, effective and efficient communication interfaces and the impact of standards and regulations.

The project was led by the UK's BMT group and was supported, delivered and trialled in conjunction with MARINTEK of Norway; Bureau Veritas and Sirehna of France, Germanischer Lloyd and PORTLINE - Transportes Marítimos Internacionais, of Portugal



In order to provide a baseline for all the survey data, the HCA team developed a methodology utilising a digital model of the ship's structural elements, sourced either from the vessel's original construction drawings, or a computer aided design (CAD) 3D model.

To ensure that the research was aligned with technology that is already available, the project used a piece of software from sub-project partner GL called Pegasus. As proof of concept and to ensure that the research was suitably grounded and applicable to real world shipping, the FLAGSHIP-HCA team was given access to the 52,500 dwt bulk carrier Angela managed by PORTLINE -Transportes Marítimos Internacionais SA and belonging to Portline's group. The plans of the vessel were used to create the first 3D model and while she was in drydock, real maintenance and survey data used to provide a baseline, apply the theory and demonstrate that FLAGSHIP-HCA's work was suitable and appropriate for the industry.

To allow the surveyor to interact with the 3D digital model, FLAGSHIP-HCA developed a software package called the Survey Advisor Tool (SAT). This allows the user to upload the 3D digital model of the individual vessel under inspection. SAT provides a user friendly interface displaying 3D drawings of the vessel with the option to select individual elements that have been identified for inspection. Structural elements, particular compartments, or individual plates can be selected and added to a survey plan with comment and notation. Once the surveyor has defined the scope of the survey he can send the annotated survey plan electronically to any interested parties.

The shipowner has access to a hull health assessment (HHA) tool with the same 3D interface as the SAT tool and with similar functionality. The HHA tool also allows the onshore and on board crew to collect their own observations and information about repairs. It can visualise the surveyors' planned inspections to verify or suggest changes to the upcoming survey to best cover hull elements that the owner has reasons to prioritise.

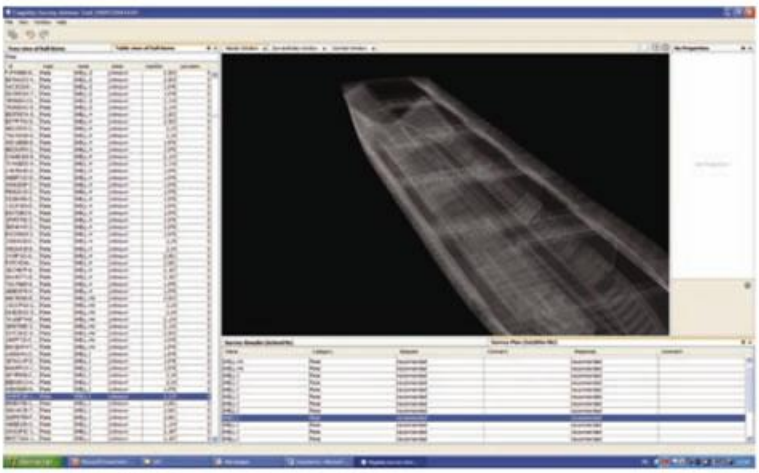
Furthermore, as the same HHA tool can reside both on board and onshore, the setup allows efficient and unambiguous exchanges of hull related information between all parties: Owner, crew, surveyor and possibly others. In order to ensure ease of exchange of compatible information between the parties, the team used a special file format called hull condition model (HCM) standard. Each individual HCM file contains the 3D model of the ship and all the attached data used for condition assessment (coating condition, steel thicknesses, etc) This form of electronic communication is not only fast but allows all interested parties to use their experience and provide input to the process in a way that adds value and is easily and accurately facilitated.

Armed with an up to date survey plan, the surveyor is able to undertake his work paying particular attention to issues that have been raised by the owner, or class society. Once the survey is completed then the detailed results can be input into SAT with reference to the condition of the various elements based on the surveyor's visual assessment. Details such as peeling paint, more severe coating degradation, or corrosion of the base metal itself can be recorded for future reference, or action.
Following the first SAT-enabled survey, the owners, class societies and any other interested parties will have access to a detailed survey, recorded digitally as an HCM file and viewable as an extremely accessible 3D model. In this first iteration of the process, the data can be used to identify any maintenance that is required in the same way as a traditional inspection. Subsequent replacement, repainting, or recoating will be recorded via the SAT to ensure an up to date record of the condition of the vessel. Furthermore, any corrosion of the base metal that does not warrant immediate repair, or replacement can be monitored as a separate task by using the SAT to record the residual thickness of the steel and the degree of corrosion.

Using the survey information, including the initial level of corrosion, whether the paint or coating is intact and whether any maintenance has been performed, the FLAGSHIP-HCA software applies a mathematical model, which predicts the rate at which a particular element will corrode based upon the sort of environmental conditions it's exposed to. This will relate to the boundary conditions where the plate is located, for example a ballast tank with fresh/salt water interface, or a fuel tank.

By applying the model to a whole vessel, it is possible to identify which elements should be most closely inspected during the next survey. Furthermore, as more data becomes available, as

subsequent surveys are completed, it will be possible to fine tune the corrosion model. This will mean that the lifespan of a particular element can be accurately estimated and ensure that repair and maintenance is carried out at the most appropriate time.



Screen shot of the Surveyor Advisor Tool (SAT).

This enhanced asset control would be particularly beneficial during the current economic uncertainty when shipping margins are under so much pressure and it is imperative to keep vessels working while minimising time undergoing repair and maintenance. With a robust estimate of corrosion available, surveys and inspections could be focused on areas that are likely to be problematic. Surveys and maintenance could be carried out far more efficiently minimising downtime. In addition, the working life of a vessel could be extended by utilising the enhanced ability to monitor and manage the condition of its structural elements. With access to projected rates of corrosion, shipowners and operators could manage and extend the working lives of their assets far more effectively.

The iterative process proposed by FLAGSHIP-HCA becomes more powerful the more data that is fed into it. The loop gets its power and value not from any individual element but from the fact that it is capturing a large amount of good quality data in a way that can be easy accessed to help improve the corrosion prediction model.

Another service that the system can provide is that the HCM format makes it simple to share information about specific ship types. A shipowner, or operator could use the system to compare survey results from fleet of multiple ships of the same type in order to identify specific corrosion hotspots. Similarly, class societies could obtain large amounts of corrosion data from every ship, which is under their jurisdiction and use this information to refine class rules and guidelines.

One of the benefits of research projects like FLAGSHIP-HCA is that companies have the opportunity to work together and produce a result that is greater than the sum of the parts.

Sirehna and BV collaborated in just such a way to develop the corrosion models that are such a key part of the project's work. BV provided its experience in the qualitative factors that effected corrosion, including splashing, or complete immersion in seawater and the effects of abrasion in cargo compartments. By identifying, clustering and categorising various ship elements into groups that have similar corrosion characteristics it allowed Sirehna to program the most accurate and effective corrosion models using existing theoretical data.

With the caveat that FLAGSHIP-HCA is a research project, the outcomes are extremely positive and have the potential for commercial exploitation. While there would be an initial set-up cost in purchasing commercially developed software and importing the initial 3D model, the benefits in terms of preventative maintenance and extension of asset life would certainly deliver return on investment.

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Iranian Shipping Signals Cloak Syrian Ships

Iranian oil tankers are sending incorrect satellite signals that confuse global tracking systems and appear to conceal voyages made by other ships to Syria, which, like Iran, is subject to international sanctions. The two countries are close allies and have helped each other deal with shortages by swapping badly needed fuels such as gasoline for diesel.

Sanctions imposed on Iran to hamper its nuclear program have blocked sales of its oil to the West and made it increasingly difficult for Iran's fleet to obtain insurance and financing for deals with Asian buyers in China, India and South Korea. Western sanctions have also isolated Syria, preventing it from exporting oil, while blocking fuel and weapons imports.

Iranian state tanker company NITC has already changed many tanker names as part of its response to sanctions, though shipping experts say such a tactic would not confuse anyone in the business about a vessel's whereabouts.

A New Twist

Now tanker tracking data monitored by Reuters and shipping specialists have highlighted a more subtle twist. Large vessels must transmit their identity and location to other ships and coastal authorities using an automatic satellite communication system, but in the last month Iranian vessels sailing in Asian seas have sent signals that took over the identity of other vessels, so the same ship appeared to be in two places at once.

"It is of course possible to manipulate or falsify information in these messages," said Richard Hurley, a senior analyst at IHS Fairplay, a maritime intelligence publisher. At least three Iranian oil tankers are transmitting such false signals, effectively taking over the identity of Syrian-owned vessels traveling between Syria, Libya and Turkey. All the vessels in question were registered in Tanzania.

Iranian oil tanker **Millionaire** sent messages that doubled over a voyage made by a Syrian-owned ship, the **Lady Rasha.** In a separate instance, the satellite tracks of Iranian oil tanker **Pioneer** were mixed up with a Tanzania-flagged cargo ship called the **Talavera**, recently renamed **Chief Ahmed**, and traveling from the Mediterranean into the Red Sea.

Despite all the paired vessels appearing to be registered under Tanzanian flags, officials in mainland Tanzania and Zanzibar denied holding any information on the vessels. They have directed queries to a shipping agency in Dubai, Philtex Corporation, which they say registered some Iranian ships under the Tanzanian flag without their knowledge.

Philtex confirmed it had registered the Syrian-owned **Lady Rasha**, but could not provide details on the Iranian tankers in question.

False Data

Peter Blackhurst, head of maritime security at Inmarsat, which provides satellite communication services, said a ship could get its Global Positioning System (GPS) to give false data, including pretending to be another vessel. "That Distribution : daily to 24200+ active addresses 09-12-2012 Page 8 equipment is programmable one way or another," he said, adding that he had come across data manipulation by ships involved in illegal fishing or waste dumping.

Syrian-owned **Lady Rasha's** satellite track first mixed up with the Iranian-owned oil tanker **Millionaire** on October 20, when the tanker began transmitting the same signal as the cargo ship. **Lady Rasha** was then docked in Benghazi, Libya. The **Millionaire** tanker was sailing in the Indian Ocean.

To do this, the **Millionaire** changed its MMSI, a message that contains both location and identity data, from 572450210 to match the **Lady Rasha's** number: 677030700. Although the **Lady Rasha** sent signals during its journey across the eastern Mediterranean, its identity was overwritten by the Iranian ship, which was also sending position signals of its own from the Indian Ocean.

As a result, the Millionaire appears to be undertaking two parallel journeys thousands of miles apart, while the **Lady Rasha's** track is not plotted. On one track the **Millionaire** can been seen sailing the Lady Rasha's course in the Mediterranean, and on the other it is powering though the Indian Ocean from east Asia back to Iran. However, another piece of identification data, the IMO, can't be changed, and that, too, is sent with every message on position, which enabled vessel-tracking experts to detect that signals came from two different ships.
Mystery Crates
A day after the **Millionaire's** MMSI changed, the **Lady Rasha** left Libya and arrived in Syria on October 26, the Tartous port authority said, where it unloaded cattle and crates, the contents of which the Syrian port authority said were not known. The **Lady Rasha** is owned by ISM Group, according to the Syrian port authority at Tartous, a firm that came under the spotlight after Lebanon seized one of its ships with three containers filled with weapons earlier this year, including explosives with labels indicating their origin as Libya. The port authority at Tartous confirmed the **Lady Rasha** had called there and the **Millionaire** had not, but a senior NITC official denied the Iranian tanker had sent out signals that belonged to another ship.

The **Lady Rasha's** owners could not be reached for comment, while the agency that registered the vessel with Tanzania said it was unaware of the duplicate signals. "We have no idea and we cannot justify why they are emitting the same satellite signals," said Jocelyn Acosta, director of operations at registering agency Philtex Corporation.

Acosta said Philtex cooperated with requests made by United States government agencies and others to identify a ship's owner and had deregistered a number of vessels accordingly. **Source : VOA News**

Inséré le 04 mars LOGBOEK NOUVELLE Supprimé le 04 avril 2013

Mitropoulos speaks out on piracy

Despite releasing new interim recommendations and guidance (MSC.1/Circs. 1405 and 1406) on the carriage of armed guards, the IMO's position remains unchanged.

At a press conference this week, IMO secretary general Efthimios Mitropoulos stressed that seafarers should not be armed and the carriage of privately contracted armed security personnel (PCASP) remains a matter for the shipowner to request and the flag state to decide.

The request should only come following a thorough risk assessment. In addition, flag states should have a policy in place on whether, or not the use of PCASP will be authorised and, if so, under what conditions.
While providing guidance as to under which conditions PCASP can be contracted to prevent ships falling in the hands of pirates, Mitropoulos was at pains to point out that the IMO neither endorses, nor institutionalises the practice, or the carriage of firearms, on board vessels.

Masters, shipowners and companies should be aware that ships entering the territorial sea and/or ports of a state are subject to that state's legislation. It should be borne in mind that importation of firearms is subject to port and coastal state regulations.

The carrying of firearms may pose an even greater danger if the ship is carrying flammable cargo, or similar types of dangerous goods.

Also by carrying arms on board, a vessel may encourage attackers to carry firearms or even more dangerous weapons, thereby escalating an already dangerous situation. Any firearm on board may itself become an attractive target for an attacker.

It should also be borne in mind that shooting at suspected pirates may impose a legal risk for the master, shipowner or company, such as collateral damages.

In some jurisdictions, killing a national may have unforeseen consequences even for a person who believes he or she has acted in self defence. Also the differing customs or security requirements for the carriage and importation of firearms should be considered, as taking a small handgun into the territory of some countries may be considered an offence.

Mitropoulos was speaking six months into this year's World Maritime Day theme – 'Piracy – Orchestrating the Response'. He gave a breakdown of the number of meetings held and correspondence exchanged with world bodies in an effort to solve the problem, such as the United Nations and NATO.

He called for a stronger political will and asked for more naval vessels and military aircraft to be made available, while acknowledging the forces were now stretched, due to the North African political problems, in particular Libya.

Later this year, the IMO is to start co-operating with the Asian anti-piracy organisation ReCAAP, which will give it a greater overall picture of the problem.

As part of the IMO backed Djibouti Code of Conduct initiative, the proposed Regional Training Centre, Djibouti (DRTC) has moved a step closer. The design and building contracts have been negotiated and agreed by the Government of Djibouti.

IMO has agreed to fund the building up to $2.5 mill from the Djibouti Code Trust Fund. A MOU was signed on 30th May 2011 between IMO and Djibouti and transfer of start-up funding is imminent from IMO. Building work is scheduled to commence on 5th September 2011.

Elsewhere, work on fusing the coastal radars and AIS in Tanzania into the Dar es Salaam MRCC is in progress. A needs analysis for similar work in Kenya is funded and about to commence. GMDSS and NAVTEX systems are being provided to the Seychelles using funds donated by Japan.

A plan to fuse the VTS and AIS in Yemen and Djibouti using funds donated by South Korea is on hold until Yemen's security situation stabilises, the IMO said

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Inséré le 04 mars BOEKEN LIVRES Supprimé le 04 avril 2013

B O E K B E S P R E K I N G

Door : Frank NEYTS

"Tug & OSV 2011 Annual Review".

Naar jaarlijkse gewoonte publiceerde het vakblad **International Tug & Salvage (IT&S)** ook eind 2011 een overzicht van de recentste nieuwbouw-sleepboten die in het voorbije jaar wereldwijd werden opgeleverd. Nieuw in deze recentste uitgave is de opname van representatieve 'Oceangoing Supply Vessels' (OSV). Onder de titel "**Tug & OSV 2011 Annual Review**" biedt dit 114 pagina's tellend jaarboek gedetailleerde besprekingen van 37 verschillende sleepboten en hoogzee bevoorradingsschepen. Voor iedere sleepboot en supply vessel wordt de bespreking aangevuld met een G/A plan en een kleurenfoto. Naast de besproken sleepboten biedt dit jaarboek ook een overzicht van de belangrijkste nieuwtjes die er in 2011 te sprokkelen vielen.

"**Tug & OSV 2011 Annual Review**" (ISBN 978-1-904050-22-3) kost £30, inclusief p&p. Wie zijn exemplaar per luchtpost wenst te ontvangen moet daar nog eens £4,5 bijtellen. Bestellen kan bij The ABR Company Limited, The Barn, Ford Farm, Bradford Leigh, Bradford on Avon, Wiltshire BA15 2RP,UK.

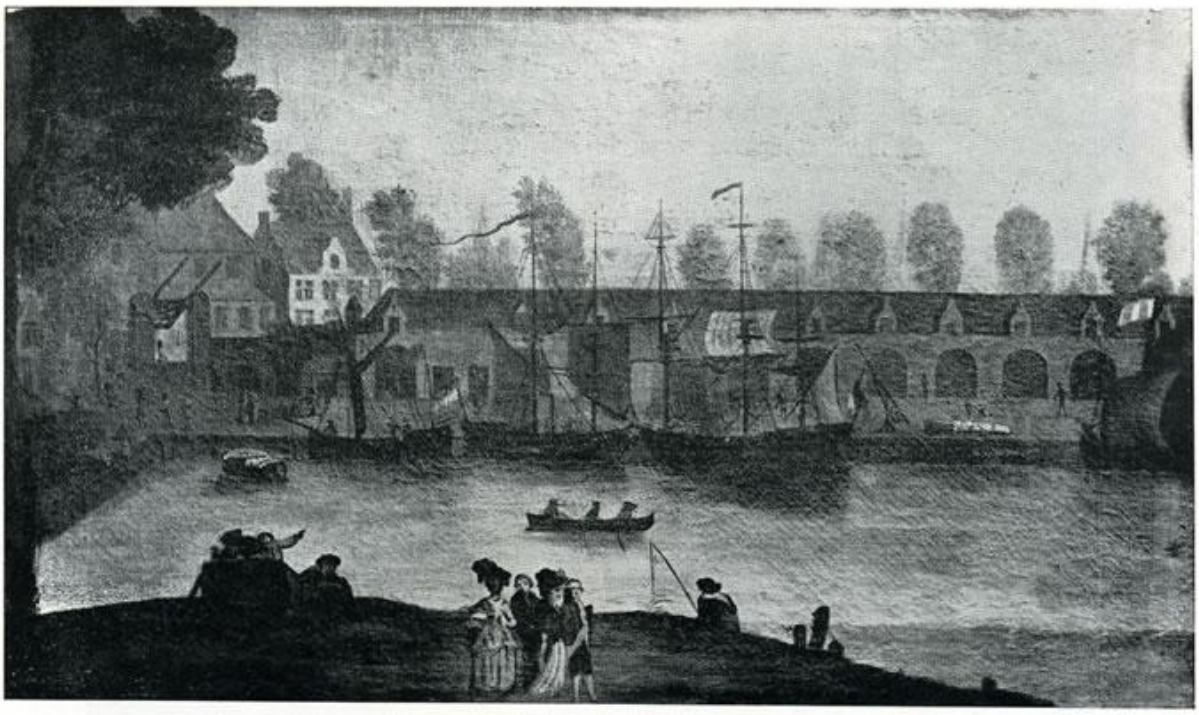
Inséré le 06 mars HISTORIEK Supprimé le 06 avril 2013

Bruges : LE PORT ET LA GUERRE (partie 1)

Le 10 mai 1940,à l'aube, une escadrille allemande survola Zeebrugge et parachuta des mines magnétiques à l'entrée de la rade. Jusqu'au 28 mai, les bombardiers allemands survolèrent fréquemment la région de Zeebrugge ; ils coulèrent un navire italien dans la passe des Wielingen, à hauteur de Duinbergen, et un navire grec à hauteur de Blankenberge, à proximité de l'épave du Nippon. Les équipages furent sauvés.

Un navire danois et un pétrolier belge sautèrent sur des mines, à proximité du port, et coulèrent. Le pilote Lycke, de Zeebrugge, périt au cours du dernier accident.

Les 17 et 18 mai, une centaine de chaloupes quittèrent Zeebrugge à destination du port français de Saint-Vaast-la-Hougue, près de Cherbourg. Les bateaux de pêche échouèrent dans différents ports français et anglais ; d'aucuns furent bombardés et coulés ; d'autres participèrent à la bataille de Dunkerque. Les Z. 2 et Z. I I sauvèrent respectivement 150 et 103 hommes ; le Z. 50 ou le Lydie-Suzanne fit cinq fois le trajet Ramsgate-Dunkerque et sauva, sous les bombes allemandes, 400 soldats britanniques. Le roi Georges d'Angleterre épingla sur la poitrine de son patron, Georges-François Ragaert, de Zeebrugge, âgé de vingt ans, la Distinguished Service Cross, accordée habituellement aux officiers.



Le Bassin du Commerce. Fin du XVIIIe siècle.

Le remorqueur Graaf Visart, de la C.I.M.B., réquisitionné par l'autorité belge, quitta Zeebrugge le 22 mai ; il remorquait le s/s. Sigurd Falbaums avec un chargement de plomb, et l'autre remorqueur de la Compagnie, le Baron de Maere, qui avait une amarre prise dans son hélice.

Le Sigurd Falbaums sauta sur une mine et coula à proximité du « Dyck boei ». Les deux remorqueurs arrivèrent le 24 aux Downs, firent route via Dartmonth sur Ouessant et Lorient, où ils furent saisis par l'amirauté française, puis par l'autorité allemande, qui les déclara butin de guerre. Les équipages furent renvoyés.

En 1945, les épaves des deux remorqueurs furent retrouvées au port de Lorient.

Le mardi 21 mai 1940, un administrateur de la Compagnie des Installations Maritimes fut prévenu par le chef du service technique que l'Etat-Major allié comptait, en cas de retraite, faire sauter les portes de l'écluse de Zeebrugge en position ouverte.

Le Reie au pied du Poortersloge (Musée de Bruges).

De ce fait, le canal maritime eût été soumis à l'action de la marée et exposé à une rupture des digues, entraînant l'inondation de la campagne environnante. En ce moment, le ravitaillement était un des grands soucis des autorités locales : l'incertitude du lendemain, la menace de l'occupation, le manque de stocks et l'afflux de réfugiés créaient une situation telle qu'il fallait éviter toute perte de vivres. M. le Bourgmestre de Bruges, prévenu, se rendit au palais du gouvernement provincial où il fut reçu par M. Van der Poorten, ministre de l'Intérieur. Celui-ci, ayant entendu M. Van Hoestenberghe, lui dit : « La capitulation n'est plus qu'une question de jours. Nous devons sauver ce qu'il y a moyen de sauver. Je préviendrai la plus haute Autorité du pays. »

Le 27 mai, les portes de l'écluse furent dynamitées en position fermée. Un capitaine du génie belge affirma, dans la suite, que cette décision fut prise grâce à l'intervention du Roi.

L'autorité militaire belge saisit au port la grue flottante de 55 tonnes, un ponton-grue et une allège transporteuse de vase, et les fit sauter et couler devant la porte-amont de l'écluse maritime.

Les autorités alliées coulèrent deux cargos et une drague de la firme Decloedt, dans le chenal, devant la porte aval de l'écluse, et deux cargos à l'entrée de la rade.

Zeebrugge fut bombardé les 17, 26, 27 et 28 mai ; des bombes frappèrent le quartier du port de pêche, la manque, les voies ferrées et les maisons d'habitation ; la gare maritime fut fortement endommagée ; quelques immeubles au quartier du môle furent détruits.

Au lendemain du 28 mai 1940, l'autorité allemande prit possession du port d'escale et de l'écluse maritime, dont les accès furent interdits, et limita l'exploitation commerciale au canal maritime et aux bassins de Bruges.

Les Allemands travaillèrent pendant sept mois à la réparation des portes de l'écluse ; ils enlevèrent les épaves coulées devant la porte amont, les superstructures d'un cargo et de la drague coulés devant la porte aval, et essayèrent en vain pendant quatre ans de renflouer l'autre épave, l'Albatros.

La flotte de guerre allemande n'utilisa guère le port, et aucun navire de commerce ne doubla le musoir. On signala,. parfois, la présence au môle d'un sous-marin ou d'un torpilleur endommagé, ayant à bord des tués ou des blessés, ou le passage d'un groupe de vedettes allant séjourner au vieux bassin du commerce de Bruges.

Néanmoins, les Allemands firent exécuter, pendant toute la durée de l'occupation, des travaux de dragage au moyen d'une drague-suceuse belge saisie et de deux dragues à godets de nationalité hollandaise. Celles-ci furent, de temps en temps, attaquées par des chasseurs anglais : l'une d'elles fut coulée, et, au cours des opérations de renflouement coulée une deuxième fois ; une autre dut s'échouer sur le banc de carénage du port de pêche, avec soixante-dix trous dans sa coque.

Les Allemands essayèrent, d'après un témoignage digne de foi, d'entretenir le long du môle des profondeurs de —6 mètres sur une largeur de 15o mètres, et dans le chenal d'accès à l'écluse —3,50 m. sur une largeur de 70 mètres. Les cartes de sondage, dont le secret était mal gardé, révélèrent que ces profondeurs ne furent jamais atteintes.

Les Allemands craignaient un débarquement à Zeebrugge.

Dès 1942, ils exécutèrent un vaste plan de défense de la zone de Zeebrugge sur une profondeur de 3 kilomètres.
Ils alignèrent une rangée de mines, à quelque 1500 mètres en mer, entre Zeebrugge et Blankenberge et Zeebrugge et Heyst, ainsi que le long du môle, du côté extérieur, et à l'entrée du port. Ces dernières étaient reliées au moyen de câbles à trois postes d'observation et de commande, coupoles d'acier bétonnées dans le môle, d'où un homme pouvait, en faisant passer le courant électrique dans chaque câble, faire sauter chaque mine.

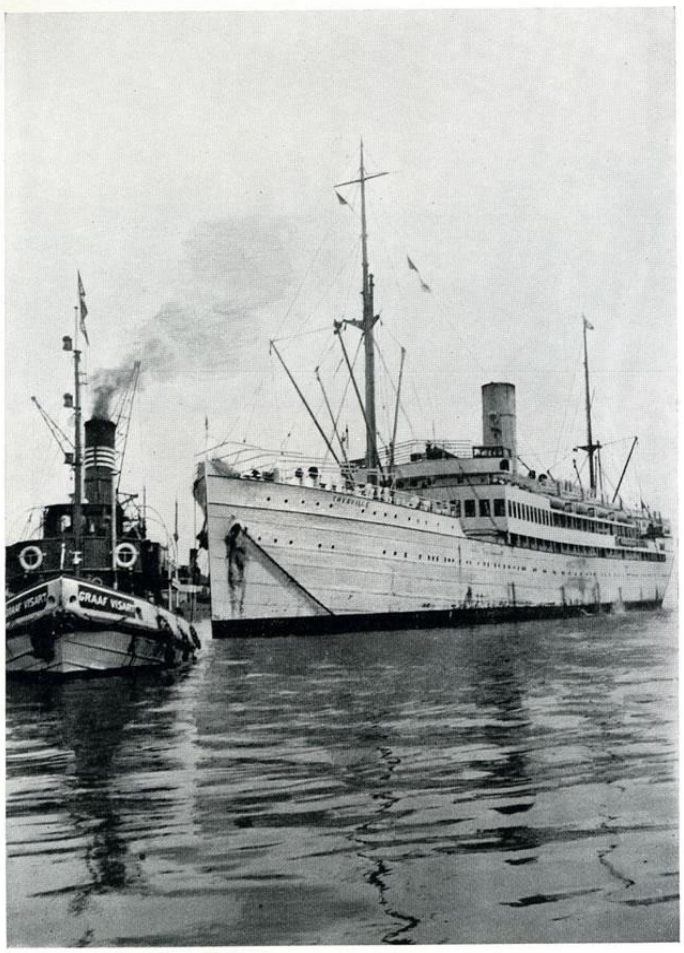
Ils tendirent, entre le phare du môle et les écluses de Heist, deux câbles, maintenus à la surface de l'eau au moyen de flotteurs et auxquels pendait un filet métallique jusqu'à une ptofondeur de 4 mètres. Une partie mobile de 100 mètres de long, pivotant d'un côté sur une bouée fixe, et s'accrochant de l'autre côté à une autre bouée, constituait la porte d'entrée et de sortie du port. Un autre filet était tendu chaque soir en travers du chenal, à hauteur du pilotage, et relevé chaque matin.

Les Allemands plantèrent un champ de troncs d'arbres et de piquets de fer dans la rade ; ils percèrent des ouvertures dans le parapet du môle d'où leurs mitrailleuses pouvaient balayer la plage. Un mur anti-tank de 2 mètres d'épaisseur barrait le terre-plein du môle à quelque 30o mètres de son extrémité nord. Douze formidables abris furent construits le long du parapet, et un dépôt de munitions fut creusé dans le terre-plein à son extrémité sud. Le terre-plein était protégé par des chevauxde-frise. Une haie de fil-de-fer barbelé bordait le parapet du môle.

La plage était couverte de grilles provenant de la frontière belge de l'Est, de troncs d'arbres et de rails, garnis de mines goudronnées, d'obus français et de fil de fer barbelé.

Les digues, les dunes et les terrains en retrait formaient une zone puissamment fortifiée sur une profondeur de 300 mètres. Des batteries jalonnaient toute la côte.

Les Allemands démolirent une centaine d'immeubles, la minque et les pylônes, construits, au port de pêche, par le Fonds de Recherches Scientifiques, et qui gênaient leur tir. Des batteries, installées de chaque côté du canal, à l'est, à la ferme Lutters, à l'ouest, à hauteur des usines, et une batterie antiaérienne, placée en bordure de la route Lissewege-Vierwege, appuyaient cette zone côtière. La campagne intermédiaire était couverte de champs de mines, sillonnée de canaux anti-tanks et de routes minées, hérissée de poteaux garnis de mines. Il y avait aussi des mannequins déguisés en sentinelles, des canons et un champ d'aviation postiches. Une batterie de 3 canons de marine, installée à Cadzand, pouvait prendre sous son feu la zone d'accès du port d'escale. La région est fut mise sous eau à partir d'avril 1944.



Le paquebot *Thysville*, 8.300 tonnes, de la Cie Maritime Belge.

Au mois de juillet 1940, les Allemands autorisèrent les pêcheurs à se rendre en mer à une distance de 5 kilomètres de la côte, depuis le lever jusqu'au coucher du soleil, sous la surveillance d'un bateau de garde. La distance ne fut pas toujours soigneusement observée.

Au mois d'octobre 1940, les Allemands saisirent vingt-quatre chaloupes pour le service du balisage sur l'Escaut.

Le 29 janvier 1941, les Allemands firent sauter la Croix des Pêcheurs, érigée au port de pêche à la mémoire des pêcheurs morts en mer. Les autorités brugeoises protestèrent en vain.

Le 21 avril 1942, les Allemands démolirent le mémorial du St. George's Day ; ils jetèrent la statue sur un wagon qui l'emporta en Allemagne. Des Belges sauvèrent quatre-vingt et un blocs de granit du monument.

En octobre 1943, la direction de la C.I.M.B. réussit à enlever les deux plaques commémoratives de la bataille du St. George's Day, fixées au parapet du môle.

Au môle, les Allemands enlevèrent deux grues et démontèrent les tanks de la « Raffinerie Belge des Pétroles » qu'ils expédièrent en Allemagne.

Ils construisirent sur les digues du canal maritime, au sud des installations de la firme Bulcke, douze tanks à essence qu'ils n'utilisèrent jamais.

A Bruges, ils occupèrent les abris pour sous-marins, qu'ils avaient construits en 1914-18. En mai 1942, ces abris s'effondrèrent partiellement, et, à la suite de cet accident, ils les abandonnèrent. Ils prirent également possession du chantier de démolition de navires « Van Heyghen Frères ». Ils y installèrent un chantier de construction de bacs en béton et des hangars, dépôt du génie allemand.

Zeebrugge fut bombardé à maintes reprises, notamment le 25 septembre 1940, le 12 avril 1941, les 5 et 7 mai 1942, les 17 et 20 avril, 23, 28 et 31 mai, le 11 juin, les 27 et 28 juillet 1943. Le quartier industriel était visé : les fours à cokes, la verrerie, la scierie de la firme Bulcke et les tanks de Zeematex subirent de grands dégâts. Les ateliers des « Forges de Zeebrugge » furent détruits. On

compta de nombreuses victimes. Dès l'arrêt du travail aux fours à cokes, les bombardements cessèrent.

Le port de Bruges fut bombardé le 9 mai, les i et 8 juin 1942. Les dégâts ne furent pas importants. Les bombes coulèrent le navire français Turgot, butin allemand, frappèrent les bureaux et l'atelier de l'armement Hermans, le hangar 2 et un quai du grand bassin du Commerce.
Le port de Zeebrugge fut rarement le théâtre d'opérations maritimes.

Au début de juillet 1944, des vedettes anglaises attaquèrent cinq patrouilleurs allemands à leur sortie du port, où ils s'étaient réfugiés, et en coulèrent trois.

Le 21 juillet, un navire baliseur allemand, ancien chalutier dunkerquois, de 1500 tonnes, sauta au large sur une mine et coula. Le lendemain, un navire-artillerie allemand fut la victime d'un V 1 dans la passe des Wielingen. Le V 1 explosa à proximité du navire, des rivets sautèrent et des voies d'eau se produisirent dans le navire; il entra au port, mais il se retourna et coula en plein chenal entre les estacades. Un mois plus tard il fut relevé et remorqué au banc de carénage du port de pêche.

Au mois de juillet 1942, les Allemands révélèrent qu'ils envisageaient la destruction du port. Ils creusèrent des puits tout le long du môle, à l'écluse maritime et le long des murs de quai de Bruges. Ils les firent maçonner et y enfouirent, sauf à Bruges, des charges d'explosifs, des torpilles ou des mines.

Au début de septembre 1944, une petite équipe de SS allemands arriva à Zeebrugge ; toute tentative de corruption fut inutile, et, du 4 au 10 septembre, ils détruisirent méthodiquement toutes les installations.
Le jeudi 7 septembre fut le jour fatal. Au môle, les Allemands firent sauter le phare, 240 mètres de parapet, le mur de quai, les hangars, les grues, l'atelier, la sous-station, les douze grands abris et le dépôt de munitions. Un abri bétonné contre le parapet entraîna celui-ci dans sa chute sur une longueur de 6o mètres ; deux grandes brèches s'ouvrirent dans la route d'accès au môle. Les Allemands coulèrent le long du môle trois dragues, un transporteur de vase, un navire-refouleur, des bacs et des chaloupes, une drague dans le chenal et ils semèrent des mines dans la rade.

Les 7 et 8, ils détruisirent deux murs de quai du port de pêche, firent sauter le bâtiment du pilotage, dynamitèrent les portes, les ponts, le bajoyer ouest et le perré est de l'écluse ; ils firent sauter deux vedettes et une allège chargées de torpilles aux installations des ferry-boats, qui furent gravement endommagées, et ils firent couler des remorqueurs et une allège devant la porte amont de l'écluse ; une drague fut coulée devant les installations des abattoirs.

Trois hommes se rendirent en canot au pont de Dudzele, où les pontiers, les frères Vlaemynck, profitant d'une absence momentanée des Allemands, avaient courageusement enlevé les charges d'explosifs que ceux-ci y avaient fixées ; ils firent sauter une mine sous le pont qui s'écroula. Quelques jours plus tard, au cours d'un bombardement des positions allemandes près du pont par une batterie canadienne, un obus mit le feu aux maisons des pontiers.

Le 10 septembre, le château d'eau s'effondra sous une double explosion. Dans le courant de la semaine, la flotte de pêche se réfugia dans le bassin sanitaire de l'arrière-port.

A Bruges, les puits de mines creusés le long des murs de quai ne furent jamais chargés. A partir du 4 septembre, un groupe de l'armée secrète avait pris position au port ; il boucha une série de puits, provoqua la méfiance des Allemands, et dans la nuit du i i au 12 septembre précipita leur retraite ; il fit prisonnier, avec l'aide de quelques Canadiens, quarante-trois Allemands installés sur la rive est du canal maritime. Mais, il n'avait pu empêcher les Allemands de faire sauter, dans la nuit du 7 au 8 septembre, les deux ponts de l'écluse semi-maritime.

A partir du 12 septembre, les Allemands s'installèrent à l'est du chenal et de l'écluse de Zeebrugge, tandis que les Canadiens, installés à Lissewege et Blankenberge, avaient un avant-poste au quartier

de la plage. Les habitants de ce dernier quartier et du quartier de la gare avaient été chassés par les Allemands, à l'exception du Dr Voet, chef de la Croix-Rouge de Zeebrugge.

Du 12 septembre au 3 novembre, date de la libération totale de Zeebrugge, le port fut « No man's land ».

Le samedi 16 septembre, l'église de Zeebrugge, poste d'observation allemand, fut incendiée par les avions alliés.

Le quartier de l'église était inondé, et, le 17 septembre, ses habitants furent forcés de se rendre à Heist et à Knokke. Une cinquantaine d'entre eux s'échappèrent à travers les champs inondés jusqu'à la rive du canal en face des fours à cokes, où Baudouin Casier fit courageusement le passeur sous les balles des mitrailleuses allemandes. Nul ne fut touché.

Les Allemands patrouillèrent fréquemment sur la rive ouest en passant sur la porte amont de l'écluse, et tinrent le môle et la rade sous le feu de leur artillerie légère.

D'autre part, des patrouilles canadiennes, sous la conduite du lieutenant Hughes du 18th Armoured Car Regiment, XII Manitoba Dragoons, et du lieutenant Frey, officier de liaison belge dans l'armée canadienne, explorèrent la rive est en passant également sur la porte amont de l'écluse.

Un Canadien fut blessé d'une balle au ventre au cours d'une rencontre à proximité de l'église ; la patrouille dut l'abandonner pour éviter l'encerclement ; mais un Canadien et un pompier de Zeebrugge, Achille Gunst, installés chez le Dr Voet, s'en allèrent dans les lignes allemandes et ramenèrent le blessé, qui guérit de sa blessure.

Un jour, le Dr Voet eut à la fois une patrouille de reconnaissance canadienne installée dans son grenier et une patrouille allemande fouillant son rez-de-chaussée. Après le départ de cette dernière, les Canadiens passèrent la journée à l'Hôtel du Port, près de l'écluse, à 100 mètres des tranchées allemandes, dont ils photographièrent les positions.

Des agents de la Compagnie explorèrent le môle dans le but de renseigner le grand quartier général anglais sur l'état du port. Celui-ci était malheureusement inutilisable.

Un officier anglais a déclaré que si les Alliés avaient pu utiliser Zeebrugge, la bataille d'Arnhem aurait pu être gagnée.

Le 3 novembre 1944, à l'aube, Zeebrugge fut entièrement libéré.

Le département des Travaux Publics assura immédiatement l'exécution et le financement des travaux de restauration du môle et de l'écluse maritime. Ces travaux furent confiés aux firmes belges : Société Belge des Bétons, S. A. Socol, Delens, Strabed, Blaton, Decloedt et Verheye.

Au môle, ces travaux consistaient principalement en la fermeture de deux brêches dans la section ex-claire-voie, la reconstruction de 300 mètres de parapet, du phare et du mur de quai sur toute sa longueur (1.570 mètres).

A l'écluse, il fallait reconstruire le bajoyer ouest, le perré et une partie du bajoyer est, réparer les trois portes et remplacer les deux ponts.

Les destructions au mur de quai du môle étaient superficielles dans la partie amont sur une longueur de 500 mètres ; elles étaient profondes dans la partie aval.

Suite

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UKHO in the vanguard of ECDIS mandation

The UKHO has issued guidelines to ECDIS entitled '10 steps to ECDIS Mandation'. One of the main reasons for this is that the IMO's SOLAS rolling timetable begins in July 2012.

The UKHO explained that ECDIS is an evolving technology and the new regulations surrounding its mandated use can seem confusing. The purpose of this guide is to clarify the process that leads to adoption of ECDIS by shipping companies, in step with the SOLAS regulations.

"We believe that the mandation of ECDIS puts a powerful tool into the hands of seafarers that can mean safer and more efficient voyages and at the same time help to protect the marine environment. Our own research suggests that shipowners need to start planning their strategy for the transition to ECDIS now to get the best results.

"We believe the timing is right to harness fully the technology that has been available for some time. We have been working with our colleagues within the hydrographic community to ensure that there is comprehensive SOLAS carriage compliant digital chart coverage of major shipping routes and ports in an integrated offering that also meets the international mariners' stated requirements for service and updating. Evidence for this comes from our wide-ranging SOLAS users and the take-up of subscriptions from trial licences in our AVCS service.

"The timescales for implementation of mandation are practical and allow for increased training in the use of ECDIS, something that we believe is now the most critical issue to be considered. Accordingly, between now and 2012, there are a number of steps and considerations to be made by users to ensure that there is a smooth transition from paper to digital navigation," said the UKHO's Rear Admiral Ian Moncrieff.

Step 1 - Find out how your fleet will be affected. Fitting of ECDIS will become mandatory in a rolling timetable that begins in July 2012. The legislation will be phased by vessel type and size to eventually apply to almost all large merchant vessels.

The timetable for newbuilds is based on the date the vessel's keel is laid. Existing vessels will be required to fit ECDIS in advance of the first survey after the implementation date. There are no requirements for existing cargo vessels of less than 10,000 gt.

Flag states may exempt vessels that will be taken permanently out of service within two years of the implementation date.

Step 2 - Consider your implementation strategy. It is important to recognise that the transition from paper to electronic navigation is a fundamental change in the way ship navigation will be conducted, not simply a case of fitting another piece of hardware to ensure compliance with a carriage requirement.

To successfully fit ECDIS on a vessel or across a fleet and operate it in a safe and efficient manner requires consideration of a number of interrelated elements.

As well as decisions on the purchase and installation of the ECDIS equipment thought must be given to training and to the amendment of bridge procedures. Last, but important is the selection of a chart service that best meets operational needs and fulfills the carriage requirements.

All of these factors need to be taken into account when developing the implementation strategy for your fleet. It will depend on the types of vessel in your fleet, as well as the mix of new and existing vessels and the trading pattern they operate.

Step 3 - Choosing the correct ECDIS fit. There is a large range of ECDIS equipment available, from those that are part of an integrated bridge system, through to small standalone units that could be more appropriate for retrofit to vessels that have limited bridge space.

The IMO standards require that vessels must carry a backup to ECDIS that can take over the chart-based navigation functions in event of system failure. The fitting of a second ECDIS, or the carriage of paper charts are widely accepted as back-up that will meet requirements.

Depending on the vessel's flag state, other solutions such as the carriage of a chart radar, or other type-approved electronic back-up may be accepted. A company will have to decide whether to fit its vessels with single, or dual ECDIS systems.

Fitting a dual system will allow a significant reduction in the paper charts carried (in some cases down to zero). If using paper charts as a back-up to a single ECDIS it is likely that the operator will be required to carry a full (or only slightly reduced) folio.

However, if a company intends to install and operate with ECDIS, it will need to work closely with the Maritime Authority that the vessel is registered with to ensure compliance with all the requirements.

Step 4 - Choose the right chart solution. Only official electronic navigation charts (ENCs) from an authorised supplier meet SOLAS carriage requirements for charts in ECDIS. These must be kept fully up to date for the latest Notices to Mariners (NMs).

An operator should look for a chart service that is compliant with the new regulations, provides the best coverage for the areas of operation, provides flexibility both in terms of the charts purchased and their licence periods and includes a regular update service.

Also look for a chart supplier that can provide official raster navigational charts, such as ARCS, for areas where ENCs are not available. This will enable navigation with official data at all times.

Step 5 - Get your crew trained. Training is a key element in the successful and safe transition to electronic navigation. Flag states will normally, as a minimum, require that ships officers attend an approved generic ECDIS operator training course based on the IMO standard model.

In addition, the ISM Code requires that ships officers have familiarisation training for all safety equipment fitted on board. This requirement can be met through type specific training provided by the ECDIS manufacturer.

As a minimum, an operator should be able to satisfy a flag state and any independent audit authorities that its crews are competent in the use of ECDIS to maintain safety of navigation.

The UKHO is developing training material, including computer based packages, to assist the mariner to read and interpret ENCs with the same confidence they have with paper charts.

Step 6 - Get flag state certification. It is essential to understand flag state's requirements for certification. Under existing regulations an operator will need to obtain a certificate of equivalency to allow ECDIS to be used to fulfil the SOLAS chart carriage requirement.

The certificate is proof that the vessel has a type approved ECDIS, fitted in accordance with IMO requirements and an approved back-up system. An operator should check that the flag state will accept the type-approval certification for the ECDIS equipment needed to be fitted.

Where an ECDIS has been fitted, this should be indicated on the record of equipment attached to the vessel's safety equipment certificate; this will also give details of the backup that is to be used.

An operator should also talk to its classification society and insurance/P&I club to see if they have any further specific requirements. Flag state requirements may change following the adoption of carriage requirements for ECDIS, so it will be important to remain in close contact with them.

Step 7 – Demonstrate compliance for Port State inspection. As well as having to satisfy the initial requirements of a flag state when installing ECDIS, Port State Control will be checking to ensure compliance with the new regulations.

Inspections might require physical demonstrations of competency by crew, as well as evidence of inclusion of ECDIS operation procedures in the on board safety management systems. This is in addition to basic certification as described in Step 6.

Some commercial operators' vetting schemes will have similar demands and noncompliance with their requirements could put a vessel off-hire.

Step 8 - Co-ordinate shoreside and shipmanagement. Close co-ordination between ship and shore is vital for successful implementation. Identify all the stakeholders – class society, insurers, charterers – and include them in the plans as early as possible.

It is worth conducting a full analysis to determine how ECDIS on board the vessels could change ways of working on shore. Practical areas to look at include management of chart data and passage planning. Successful implementation will require a re-write of a company's safety management system, which is likely to be best achieved through structured consultation between on board and ashore staff.

Step 9 - Start now! There is a lot to do so don't wait for the deadline. Arranging training and acquiring certification can take three months but up to six months could be necessary to implement a strategy depending on whether the vessel is a newbuilding or retrofit.

The sooner the strategy is adopted, the sooner an operator will have a realistic expectation of costs and issues. If a ship is affected by the first phase adoption in 2012, start planning now.

Step 10 - The aim is safety but the result can also be efficiency. ECDIS has been shown to contribute significantly to safety of life at sea, but it can also increase operational efficiency that in turn can lead to bottom line savings.

Navigators and superintendents regularly report a steady flow of benefits from using ECDIS. Updates to chart data can be virtually instant. Navigation tasks and bridge workload can be optimised, situational awareness improved and stress reduced when navigating in congested waters where most accidents occur.

ECDIS also offers data reporting and auditing tools that can eliminate redundant practices and improve voyage planning, delivering tangible fuel savings. Early adopters will be the ones that see the advantages soonest.

Asian base

Last month, the UKHO opened its first overseas office in Singapore to provide local support for Admiralty distributors and a rapidly-growing customer base across Asia.

The number of vessels throughout Asia using electronic navigation technology is rising quickly as shipping companies take advantage of both the improved safety benefits and operational efficiencies available. The introduction of the ECDIS mandate from 2012 is expected to further increase demand.

Michael Cauter, the UKHO's deputy CEO, said; "Today, Asia is the engine of the shipping industry: the region holds eight of the world's 10 busiest ports, manufactures the majority of new commercial vessels and provides more merchant crew than any other continent.

"It's hugely important for the UKHO to be in a position to easily engage with this vast and vibrant maritime community as the industry shifts to digital navigation. By establishing a base in Singapore, Admiralty will be at the heart of the conversation, and best placed to respond swiftly to the needs of our growing number of customers across Asia," he said.

The Admiralty team in Singapore works in close collaboration with distributors across Asia to ensure their customers have access to Admiralty advice and expertise on digital navigation strategy, as well as local product support. In addition, the office provides a platform for ongoing engagement with the Asian maritime market, ensuring that developing requirements from customers in the region become an integral part of future Admiralty plans for products, service and support.

The UKHO has worked closely with many of the Asian Hydrographic Offices over the last 30 years in the development of first paper, then digital charts of the region to help improve the information available to mariners. Registered as Admiralty Hydrographic Asia Pacific Pte, the office is based at 1 Fullerton Road, Marina Bay.

TankerOperators

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Fundamentals not promising

Spot TCE earnings continue to outperform operating costs.

Despite the oft repeated phrase 'rates hitting historic lows', research has shown that the softening in timecharter equivalent (TCE) earnings on the spot market was not as severe as the downturn in Worldscale (WS) spot rates.

This owed much to the upward adjustments seen to WS flat rates, aimed at offsetting the higher bunker costs seen last year. But with bunkers at the end of April being around 50% of what was used to adj ust the flat rate up, the falling TCE earnings have been less 'historic' that the corresponding WS spot rates seen thus far, McQuilling Services reported.

After voyage revenues and costs are added up, Worldscale sets flat rates annually so that an owner of a standard vessel of 75,000 dwt earns $12,000 per day at a rate of 100. However, when costs vary as they have with bunkers this year, earnings counter react.

For example, at rates of W30 for a VLCC on a voyage from the Persian Gulf to Japan, earnings are roughly $16,000 per day given a bunker price of $280 per tonne. However, earnings would fall to just $7,400 per day at a bunker cost of $554 per tonne seen in 2008.

On TD-3 (260,000 tonnes, PG to Japan), the average spot rate of W43.5 was the lowest seen for a more than a decade. However, spot TCE earnings were $37,200 per day, which was only just below the level of $39,800 seen in 2007. So while the 67% fall in spot rates since last year may be deemed 'historic', the corresponding drop of 52% in spot earnings was perhaps not so headline grabbing, McQuilling pointed out.

The news was less cheery for owners of MR2s (40,000-55,000 dwt) who McQuilling forecast would receive a 15% net fleet growth this year. Averaged earnings for TC-2 (37,000 tonnes, Rotterdam to New York) and TC-3 (38,000 tonnes, Caribbean to US Atlantic coast) up to the end of April 2009, were just above $11,000 per day. The last time rates were this low was in 1999.

Average annual earnings for these vessels have ebbed and flowed with a significant amount of volatility – sometimes fluctuating by about 300% in one year. This roller coaster ride was much more pronounced in the VLCC sector than with the MR2s, despite both following similar trends.

The good news for owners and operators is that on average, the y-t-d (end April) spot TCE earnings continued to outperform operating costs. This fact has led owners to baulk at the idea of laying up tanker tonnage, especially cold layups, which would result in lengthy re-commissioning times should the market pick up again.

Furthermore, for every fall in spot TCE earnings since 1998, there has been a rise – usually within one to two years and usually of an impressive magnitude, particularly in the VLCC sector.

Whether we are at the bottom of this cycle was still uncertain at the time of writing, but given the diminishing demand for oil and petroleum products in the face of a rising supply of tanker tonnage, the fundamentals do not appear promising, McQuilling warned. TO

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BIMCO examines ECO tanker cost differential

There has been a lot of debate and speculation regarding the commercial viability and attractiveness of ECO ships amid fears of a two tier market emerging reflecting ship energy efficiency.

BIMCO recently undertook a review and chief shipping analyst, Peter Sand, explained: "Our calculations show that, should you choose to invest in an ECO MR2-tanker, you could pay up to 25% more for your vessel before settling for a non-ECO MR2-tanker".

The calculations, based on the organisation's assumptions, disclose that a 15% savings on fuel, potentially enables an ECO shipowner to charge extra up to the amount that is saved in fuel – which is $2,197 more per day than what a regular vessel can obtain. This extra income means that a shipowner can pay up to $8.31 mill more for an ECO ship, for the investment to be equally good, or better off, compared to a standard tanker. That is a premium of 25% when the standard vessel is priced at $33 mill.

In the same way and based on the same fuel consumption and fuel prices assumptions, a shipowner can pay up to $5.5 mill more for an ECO ship for every 10% of fuel savings – or 17% more for a $33 mill standard vessel.

An obtainable premium to the market-given timecharter rate, where the charterer pays for the fuel, is implied to be equal to an obtainable cost deduction on a market-given voyage charter rate where the owner picks up the fuel bill.

Fuel price effect

If the bunker prices go up, the fuel-savings premium increases, making investments in ECO ships more viable. For each increase of $100 per tonne in bunker prices the premium goes up by $338 per day, improving the net present value (NVP) of the investment by $1.3 mill.

A change to the fuel price tends to affect timecharter rates directly, but BIMCO fixed the rate at $12,750 per day for the following calculations, which is the latest 12-month timecharter rate for a 47-48,000 dwt products tanker according to Clarkson.

If the bunker price stays on the current level of $651 per tonne, the fuel-savings premium will not be high enough to make investment in an ECO ship profitable for a shipowner; even the psychological barrier of $1,000 per tonne will not make the investment sustainable with a negative NPV of $0.7 mill. The bunker price must exceed $1,060 per tonne to result in a new ECO ship having a positive NPV, if the vessel is priced at $33 million.

In other words, bunker prices would have to increase by two-thirds ceteris paribus to make the investment viable under the conditions of a fixed timecharter rate and OPEX level going forward.

At the current one year timecharter rate of $12,750 per day, a standard vessel does not meet its cash-breakeven rate making the investment unprofitable with an NPV loss of $13.5 mill – more than the initial equity outlay. Even if the ECO ship was secured at a cost of $33 mill, the investment will still be unprofitable, despite being able to charge a fuel-savings premium of $2,197 on top of the timecharter rate, making an NPV loss of $5.2 mill.

The cash-breakeven cost for a vessel valued at $33 mill is $13,928 per day covering the daily operating and financial expenses, but not return on equity, which explains why the timecharter rate, plus the fuel-savings premium, is not enough to make the investment in an ECO ship profitable in the current environment.

Newbuilding prices

As stated above, the current timecharter rates at a fixed level for the next 20 years are not high enough to sustain investments in new vessels at the present newbuilding prices. Returning to the benchmark case of 15% fuel savings and timecharter rates of $12,750 per day for a standard vessel, an ECO ship must not cost more than $27.8 mill to be a profitable investment. In comparison, a standard vessel must cost as little as $19.5 mill to be profitable in today's market.

"The current newbuilding prices reflect some optimism in the shipping industry. Higher freight rates are expected to be part of not too distant future. From our calculations two results are striking; First, newbuilding prices are not as closely related to the present market condition as they normally are – and second, ECO ships seem to be the best profitable choice for the future fleet" Sand added.

Instead of changing the newbuilding prices, BIMCO examined how high the timecharter rates must go before the purchase becomes profitable. For a standard vessel priced at $33 mill, timecharter

rates must be as high as $16,328 per day for the purchase to be sustainable – but rates have not been this high since mid-2009.

If the ECO ship costs $33 mill, the tanker also needs to make $16,328 per day before it is profitable; but a portion of the rate reflects the fuel-savings premium. By deducting the premium of $2,197 per day, the rate can be compared to the historical values seen in a standard vessel.

This means that the base rate needs to be $16,328-$2,197=$14,131 per day before an ECO ship becomes a profitable investment. By looking at historical freight rates, this is achievable. The 10-year average for 2003-2012 is $19,214 per day for a one year TC for a 47,000-48,000 dwt products tanker. It should be noted that BIMCO has assumed that the whole advantage of the investment would go to the shipowner.

As charterers focus on the total sum of charter costs and bunker costs, industry sources confirmed that an ECO ship premium to a standard vessel with a higher fuel consumption is obtainable.

Either purchase is financed by a 15-year annuity loan with an interest rate of 7%. The loan amounts to 60% of the purchase price, while the remaining 40% is financed by equity. The return on equity is set to 7%.

The fuel price is set at $651 per tonne – the average of current bunker prices in Singapore and Rotterdam, the daily fuel consumption at 30 tonnes and the annual transit rate is set to 75%. The transit rate indicates the share of days that the vessel is using fuel, which is a crucial factor to determine the economic viability of an ECO ship.

The operating expenses are fixed at $7,600 per day. OPEX is set to be flat for the life-time of the vessel, to make the conclusions more straightforward to comprehend. By assuming constant timecharter rates, BIMCO kept both key revenue and key expenditure numbers fixed in all calculations. The number of operating days is assumed to be 353 (ie, one day off-hire every month). The vessel is assumed to be sold for recycling after 20 years for a price of $3.8 mill regardless of the type.

For further simplicity BIMCO did not taken into account the effect of trading in ECAs into the calculations. But, if low sulphur fuel is used in ECAs, the fuel costs will rise, resulting in the same conclusions, as if fuel prices go up.

BIMCO said that it will publish an article covering the implications of the use of ECO ships based on the development regarding future fuel regulation, with the coming stricter sulphur limits stepping into force in 2015, in the near future.