Inséré le 23 mai 2013 BOEKEN Enlevé le 23 juin 2013

"Mentoring at sea. The 10 minute challenge".

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

The Nautical Institute published a new book entitled "Mentoring at sea. The 10 minute challenge". It was written by Captain André L Le Goubin MA FNI. Anyone can be a mentor at sea and anyone can need mentoring – and it only takes 10 minutes to get started. This book explains how knowledge gained through experience, and then reflected upon, can be passed on in an informal but purposeful way. Every suggestion will take no more than 10 minutes to carry out but incorporating opportunities for mentoring into the daily onboard routine will widen and consolidate the on-the-job experience of those progressing through the ranks. It will also improve communications and enhance team-building and hopefully lead to a reduction in accidents and incidents. This practical guide sets the 10 minute challenge for potential mentors and candidates to identify concerns and practical solutions. Examples progress from the simple thought of the Master spending a few minutes with each of his watchkeeping officers daily to second or third officers bringing the vessel to anchor, or picking up a pilot, under the Master's supervision. "Mentoring at sea." (ISBN 978-1-906915-39-1) is available from The Nautical Institute, price £45.For more information: Tel. +44.20.7928.1351.

Inséré le 23 mai 13 NIEUWS NOUVELLES Enlevé le 23 juin 13

Cargo Ship Losses Weigh on European Banks

Can a ship float and be underwater at the same time? If it has been financed by a European bank, the answer may be yes. A glut of ships, and slack demand for shipping in the weak global economy, have reduced the value of cargo ships. According to some estimates, as many as half the cargo carriers on the high seas today may no longer be worth as much as the debt they carry — putting them underwater, in financial jargon. Large vessels that might have sold for about $150 million new in 2008 fetch about $40 million today, according to Nicholas Tsevdos, a shipping specialist at CR Investment Management, which helps banks deal with distressed assets. And with cargo fees near record lows, many vessels are not earning enough to make debt payments, either.

As European leaders agonize about how to rescue Cyprus banks, the formerly obscure world of ship finance is a reminder of how much cleanup still lies ahead for the region's banks. The growing fear is that some lenders, almost all of them in Europe, have yet to confront the scale of potential losses from an estimated $350 billion in loans made to the shipping industry.

"Many banks are still shackled by the leftover effects of the crisis," Christine Lagarde, the managing director of the International Monetary Fund, told an audience in Frankfurt this week, without identifying any specific assets. "This is the weak link in the chain of recovery." She urged banks to take a harder look at their problem loans.

Whether the risk from shipping loans is serious enough to put another torpedo into the euro zone financial system is hard to say because of a glaring lack of detailed information about banks' portfolios of shipping loans.

Andreas R. Dombret, a member of the executive board of the German Bundesbank who is responsible for monitoring financial stability, said he thought the shipping crisis, while serious, did not pose a broad threat to the euro zone. "It's not a concern for the stability of the financial system," he said in an interview. "It's not systemic."

But he and other bank overseers are stepping up pressure on financial institutions to address their problems. Shipping is "a substantial regional and sectoral risk in the banking industry," Mr. Dombret

warned at an industry gathering in Hamburg last month. It was one of the few times a bank overseer of his stature had expressed concern about the shipping problem.

Under pressure from regulators, local governments that own most of HSH Nordbank in Hamburg said on Tuesday that they would raise their guarantees for the bank to 10 billion euros ($13 billion), from 7 billion euros ($9 billion). Though only a midsize bank, HSH is the biggest lender to the shipping industry, with more than $39 billion in outstanding loans. The announcement, by the City of Hamburg and State of Schleswig-Holstein, amounted to an admission that losses from shipping were greater than earlier estimates.

The shipping downturn, which began in 2008, has already driven several large fleet operators into bankruptcy. The Overseas Shipholding Group, the largest American tanker operator, filed for bankruptcy in November. The fear is that some of the banks most active in ship finance, which are concentrated in Germany, Scandinavia and Britain, are in denial about potential losses. "It's probably the most serious commercial problem that the banks have," said Paul Slater, chairman of the First International Corporation, a consulting firm in Naples, Fla., that specializes in shipping. Banks with large portfolios of shipping loans "are just not taking the hits," he said. "They are saying, 'Give it time and it will work out,' and it's just not going to do that."

For weak banks, the temptation to play down potential losses may be great. A frank appraisal of their losses would force some to raise billions in new capital or even to declare insolvency. That is true not only of shipping loans but also of other categories like commercial real estate, and it remains a fundamental problem for the euro zone economy.

The uncertainty about banks' true financial health fosters mistrust among institutions, makes them reluctant to lend to each other and is partly responsible for a shortage of credit for businesses and consumers.

As sour assets go, ships are particularly troublesome. Unlike a plot of land, they require costly maintenance. They lose value over time from wear and tear or because more modern, fuel-efficient vessels make them obsolete. It costs money even to take an underused ship out of service and park it somewhere. The waters off Falmouth in Britain and Elefsina in Greece are popular anchoring spots for idle ships.

Investment funds that specialize in buying distressed debt have been wary about putting money into ships. That makes it hard for banks to unload unwanted shipping assets. "Every hedge fund in the world is trolling Europe, but they are bidding on a small percentage of relatively good assets," said Jacob Lyons, managing director of CR Investment Management in London.

Mr. Dombret of the Bundesbank pointed out that the banks that had made the most loans to the shipping industry were in nations like Germany or the Scandinavian countries whose governments had the least debt and were best able to cope with a banking crisis.

Mr. Dombret did not single out individual banks, but German banks like HSH Nordbank and Commerzbank in Frankfurt were among the top shipping lenders because German tax breaks favored ship finance. German banks' exposure to shipping has been estimated at about $129 billion, more than double the value of their holdings of government debt from Greece, Ireland, Italy, Portugal and Spain. Aside from German banks, the DNB Group in Norway and Nordea in Sweden are big players in ship finance, as are Lloyds Banking Group and the Royal Bank of Scotland in Britain.

It does not necessarily follow that these banks will face losses on their shipping portfolios. Some of the savviest lenders probably still make money, or at least have made an honest appraisal of the value of their portfolios and set aside enough money to cover possible losses.

"We are very happy with our shipping business," said Rodney Alfven, head of investor relations at Nordea. The bank, which is listed in Stockholm, increased the amount of money it set aside for potential bad loans in shipping to $81 million in the final three months of 2013 from $70 million the

previous quarter. Over all, Nordea, the largest Swedish bank, has consistently made a profit from its shipping business, Mr. Alfven said. Shipping loans account for only 2 percent of Nordea's lending, the bank said.

The sorry state of global shipping stems from a shipbuilding boom that peaked in 2008, just before the global financial crisis, and created a glut in cargo capacity. Rates for nonliquid cargo are half or less of the level needed for shipowners to break even, according an estimate by the consultant KPMG. That means that ships are doubly damaged. They do not earn enough to cover interest on their debt, nor can they be sold for the value of the loan.

Nordea has told investors it expects shipping to begin to recover in 2014, as the world economy rebounds. But others are more skeptical. "By any kind of measure, this is a deeper and more difficult downturn than we've had in the last decade or two," said Mr. Tsevdos of CR Investment.

Except for some specialized categories of ship, like liquid-natural-gas carriers, he said, "I don't think there is a lot of indication for a lot of sectors that rates are going to turn around soon."

Inséré le 25 mai 13 NIEUWS NOUVELLES Enlevé le 25 juin 13

Resigned investigations

Just one day after being tasked re-open the investigation into the January 2008 sinking of the general cargo ship Vanessa in the Black Sea Captain Hristo Papukchiev resigned as chairman of the Commission of Investigation in April 2009. Papukchiev revealed the political and commercial pressures on maritime accident investigators worldwide and became very relevant with the entry into force of the IMO's casualty code as part of SOLAS.

Non-liability based maritime casualty investigations play a useful role in identifying safety issues and presenting means to fix them. The concept only works if investigators are independent, properly trained, and appropriately funded, as the IMO's MSC 255(84), now part of SOLAS Chapter XI-1 recognises, but does the political will to defend the independence of investigators actually exist?

It is not an issue affecting former Soviet states or third world nations, even investigators in the developed world face difficulties. After eight years at the helm of Britain's Marine Accident Investigation Branch, Rear Admiral Stephen Meyer, said:

"When I joined, I was naïve enough to think that everyone would be on the side of independent investigation, the sole purpose of which was future safety. In fact, few are on our side, as everyone involved in an accident has some form of vested inter est, and others often have a particular axe to grind. I have also had to fight to maintain the independence and integrity of the MAIB, and our right to operate free from the growing culture of blame and litigation."

The investigation on the devastating Full City grounding was conducted by Norwegian authorities.

While drafting the new investigation code the IMO itself came under pressure from the United States to eliminate the provision that required seafarers to be

advised of their rights regarding legal counsel and self-incrimination. Although the provision remained on the books the attempt to bring international seafarers under local jurisdiction and treat them as terrorist suspects, remains worrying.

Papukchiev talks about his concerns:

"When the commission was appointed to continue and finish the investigation into the (Vanessa) incident, a colleague of mine and a member of the commission asked me how much I was paid to open the cold files of `Vanessa'. I was shocked at first, but then started to ponder on the investigations done so far, the report that had been prepared long before my appointment, although not approved ... Well, did this mean that its authors had been paid? Where were they now? These questions were my greatest concern, namely the Vanessa's case had begun with a false start ... Anyway, I was appointed to proceed with independent investigation because the society expected the truth to come to light. These investigations should be done very precisely and objectively, with facts prevailing not hypotheses . When there are no conditions for an unbiased and objective investigation, a true professional is obliged to resign."

Papukchiev filed his report on the Tolstoy and expected action, for recommendations to be followed or at least discussed. Instead he found himself under increasing pressure to fall into line and training that was already agreed was denied. He was told:

`Go and kiss the hand, Man...kiss the hand, and all will be OK.'

Now still concerned as well. So far nothing but silence only.

On 24 April, Papukchiev says: "Exhausted by office combats with the renegades I had a walk on fresh air outside the Ministry of Transport nearby to National Theatre park with the fountains . Fresh and cold Friday afternoon."

With his independence in danger of being compromised and little support he knew he had to resign that day:

"Yesterday would have been too soon, tomorrow would be too late," he recalls.

While Papukchiev's resignation was unusual his experience is not, and represents a major block to actual compliance, rather than notional with the IMO Casualty Code.

Indeed, the need for independent investigation into maritime casualties is ill-understood in the judiciaries of countries with poor safety records. That is a major hill for the IMO to climb if it is to achieve compliance.

The Philippines for instance is attempting to reconfigure its notoriously ineffective Board of Marine Inquiry, BMI, the main task of which was to establish liability, into an investigative body conducting non-liabilty investigations but still wedded to hauling witnesses to court-like proceedings and issuing subpoenas for those who do not appear.

Although the country's Coast Guard has embarked on a series of maritime casualty training sessions and is developing a core of trained investigators the BMI itself does not yet require its members to be trained in investigation nor for its lawyer member to be trained in maritime law.

The difficulties of turning long established, bureaucratic institutions in those countries where liability based hearings are the norm, and a reluctance to dismantle them, may prove as much a block to meeting the intentions of the IMO Code as corruption elsewhere.

At its heart, casualty investigations are there to protect seafarers, ships and the environment but who, one wonders, will protect the investigators?

Bob Couttie

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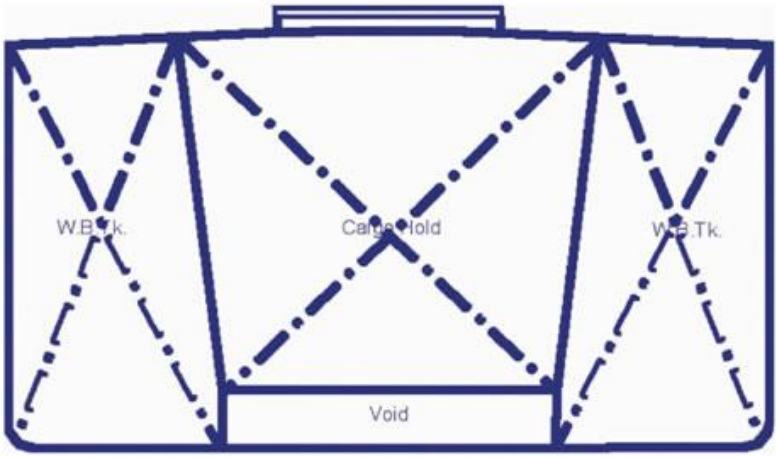
The work horses of the seas –ore carriers!

As the leading classification society for ore carriers, with close to 40 per cent of the existing ore carrier fleet to our class, DNV has gained unique experience of and expertise in challenges related to the design and operation of these giants of the sea. Based on this experience, we have developed dedicated services to ensure the sound design and construction as well as the safe and efficient operation of modern ore carriers. In this article we share some of these experiences with the rest of the dry bulk industry.



The massive demand for raw materials, especially iron ore, over the past few years from China, Japan and Europe has advocated the transportation of a single commodity in big parcels on long haul trades that provide economies of scale. However, today's world fleet of ore carriers is relatively small, comprising only 38 vessels of more than 200,000 dwt in August 2008. According to LR-Fairplay's database, the order book contains 107 ore carriers with a capacity ranging from 200,000 to 400,000 dwt, the majority of which will be delivered in 2011 and 2012.

Main characteristics of ore carriers

Ore carriers are specially designed ships dedicated to the transportation of ores. The pure ore carrier is characterised as a seagoing single deck ship with two longitudinal bulkheads bordering so-called 'volume low' centre cargo holds and a double bottom throughout the cargo area. The side tanks are used as ballast water tanks or void spaces, the double bottom is usually used as void space.

Like the emergence of the purpose built general bulk carriers in the late 1950s and early 1960s, the dedicated ore carrier also came onto the seaborne transportation scene during this period. Ore carriers are in general large mass cargo transporters with the sole objective of carrying high-density iron ores, typically more than three tonnes per cubic metre, on long-haul trades. Since they do not carry any cargo on the back haul, ore carriers spend close to 50 per cent of their lifetime in ballast.

Unlike general bulk carriers, which adopt an alternate loading condition when carrying iron ores, ore carriers are designed for homogenous cargo distribution.

Design and operational considerations

Number of cargo holds

Ore carriers generally have four to six cargo holds although the ex Amagisan Maru (136,000 dwt), which was built in 1976 and has since been scrapped, had only three holds, the largest of which was 86.7m long and was served by three hatches. Today's largest ore carrier in operation, the DNV-classed 365,000 dwt Berge Stahl, has five cargo holds served by ten hatches.

The *Berge Stahl* is the world's largest ore carrier in operation.

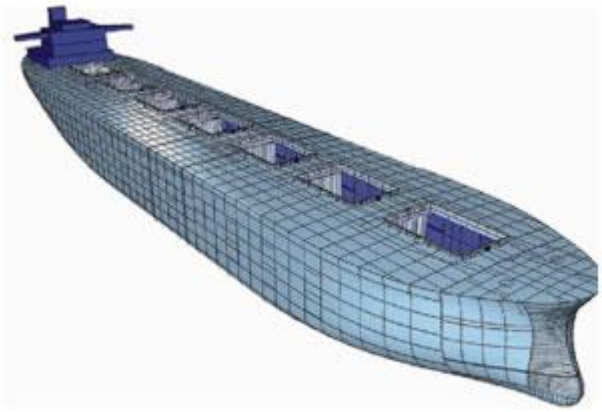
The appropriate number of cargo holds for ore carriers is linked directly to the ships' trading purpose. As ore carriers are normally built for a shuttle service between two ports on long-term contracts, only a few holds are needed. In cases where multi-port conditions are involved, it is necessary to increase their number to accommodate the charterer's requirement of 'untouched' holds. A typical multi-port voyage can comprise the following loading and discharge operations:

1. Loading at a Western Australian ore terminal with a maximum draught of 18.2m,
2. topping up at Saldanha Bay, South Africa with a draught of 21.5m,
3. partial discharging at Rotterdam, and
4. final discharge in Hamburg with a very restricted draught.

To enhance the operational flexibility for this mode of operation, a six- or even eight-hold configuration is normally specified.

Loading flexibility and de-ballasting capacity

As a general rule, when contracting a new vessel, the envisaged operating patterns should be fixed as early in the initial design stage as possible in order to incorporate possible multi-port conditions in the specification.



To allow for a minimum set of multiport conditions, the optional DNV-class notation BC-B can be assigned. This notation takes account of a maximum draught of 83 per cent of the assigned summer load water line with any cargo hold being empty while at sea. This permits full-laden cargo holds at a minimum draught of 67 per cent of the assigned summer load waterline.

Although the notation BC-B allows a 15 per cent increase of mass at the same draught when in

harbour, loading sequences are to be carefully reflected and certain harbour conditions must be included in the specification, especially if the loading of any hold in as few as two steps or even one step is carried out at a minimum draught.

The appropriate size of the main ballast lines and capacity of the ballast pumps are also closely related to the ship's overall loading and operating flexibility. The installed ballast pump capacity provided for a new ore carrier is to be scaled according to the loading rate of the ore-loading terminals where the ship is intended to trade. At several of these terminals, the peak loading rate is 16,000 tonnes per hour and it is expected that other terminals under construction or in the process of being upgraded will use this figure as a benchmark.

An installed pumping capacity of three times 3,000m3 per hour at 0.3 MPa for a 360,000 dwt ore carrier may be considered as a minimum standard. In addition to the main ballast pumps, a set of sufficient ejector pumps is to be provided to empty out the last ballast water in general and the cargo hold bilges in particular.

Also with respect to the exchange of ballast water using the sequential method, an appropriate ballast system is essential to allow the ballast tanks to be served individually.

Ore carriers can be loaded more efficiently if any hold can be loaded in one step, as shifting shiploaders and reading marks is time consuming. To accommodate such a one-pour loading in a safe manner, sufficient hull girder and cargo hold structural strength is a prerequisite. In addition, a corresponding ballast water system must be installed. This can be achieved for new vessels if taken into consideration at the early design stage. In addition, an automatic draught-reading system should be installed and linked to the loading computer in order to better control the critical design parameters.

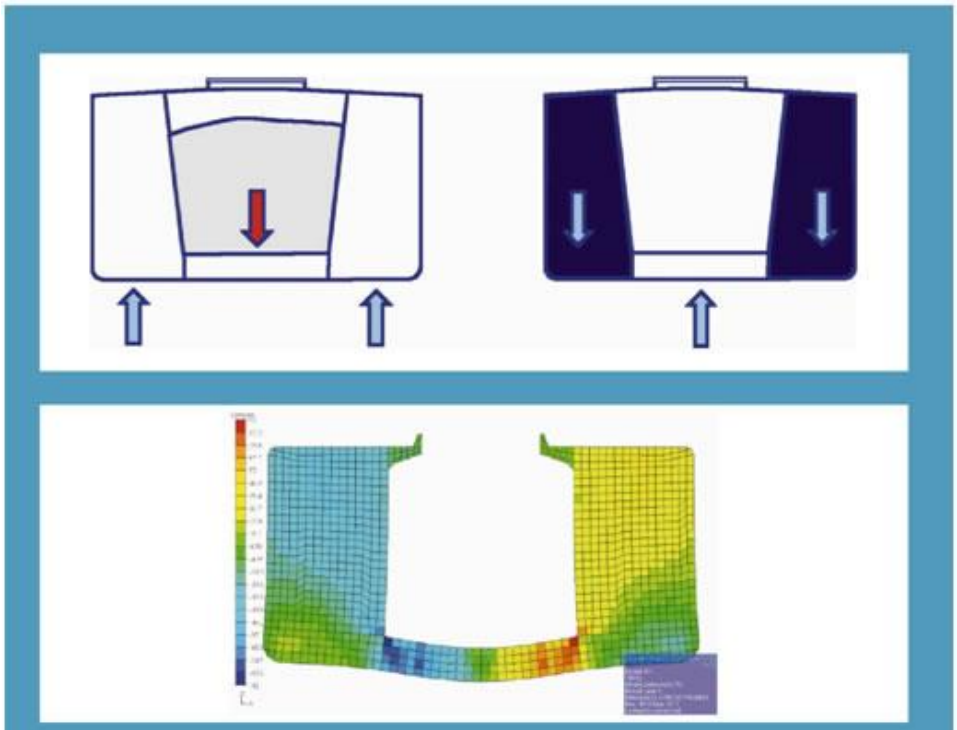
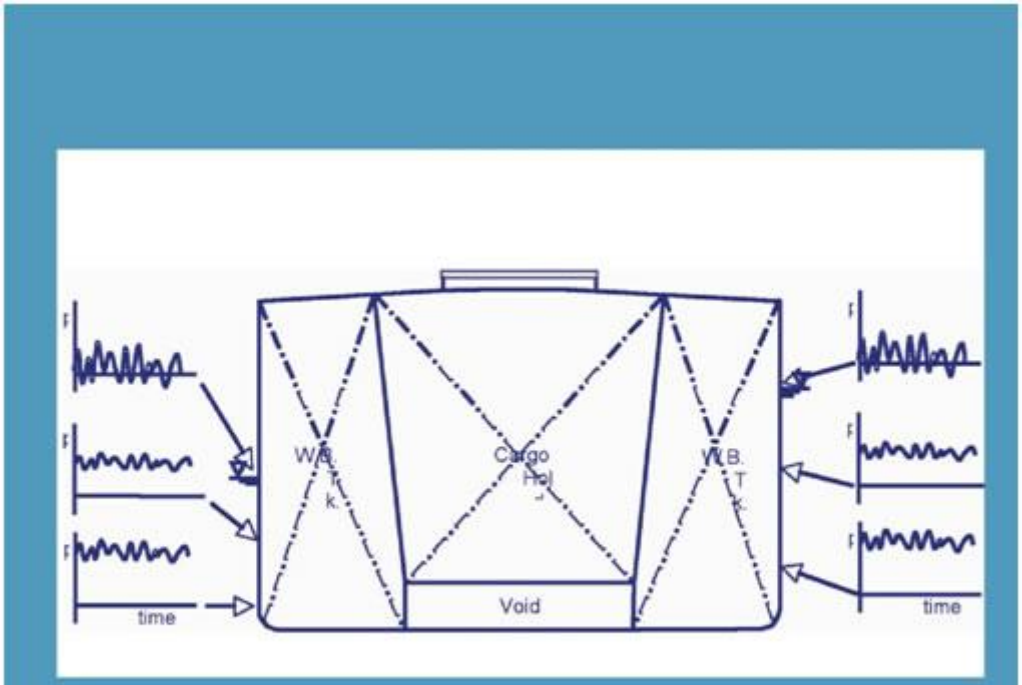


Illustration of racking stresses inside tanks, bending stresses in double bottoms and compression stresses in deck between hatches.

DNV was the first class society to introduce such an enhanced level of loading flexibility when we launched the voluntary notation EL – Easy Loading last year. In a new revision of the EL notation this year, the scope of the notation is extended further, and it has been divided into two notations; EL-1 and EL-2. Designing an ore carrier according to the EL class notations results in:

- safer loading operations
- more efficient loading operations
- a reduction in the loading time



High cycle fatigue loads on the side longitudinals.

Hatches

The cargo hold hatches are normally closed by single-panel covers which are generally stowed on the ship's starboard side. In a more advanced system, covers can be stowed on either the port or starboard side. Covers of modern ore carriers are operated by hydraulic-driven rack/pinion systems and secured with an automatic wedge cleaning system.

Void spaces

Void space in inner bottom.

The double bottom beneath cargo holds is in general kept as a void space to accommodate the huge ballast pipes as well as a pipe duct equipped with a manually driven trolley for inspection and maintenance purposes.

Watertight subdivision and damage stability

The watertight subdivision of side tanks needs special consideration with regard to damage stability criteria. Most ore carriers have assigned a B-60 freeboard and some even a B-100 freeboard according to the International Load Line Convention. While the B-60 freeboard is in general no problem with regard to the watertight subdivision and damage stability criteria, the requirements for B-100 are more stringent. Ships assigned a B-100 freeboard have to fulfil additional requirements regarding machinery casing, gangways, accesses and freeing arrangements and must also demonstrate two-compartment flooding survivability. The hatch covers must also be watertight. As long as the longitudinal bulkhead has a distance from the side shell of B/5 or 11.5 m, whichever is less, at the summer load waterline, the cargo holds are not subject to compartment flooding scenarios.

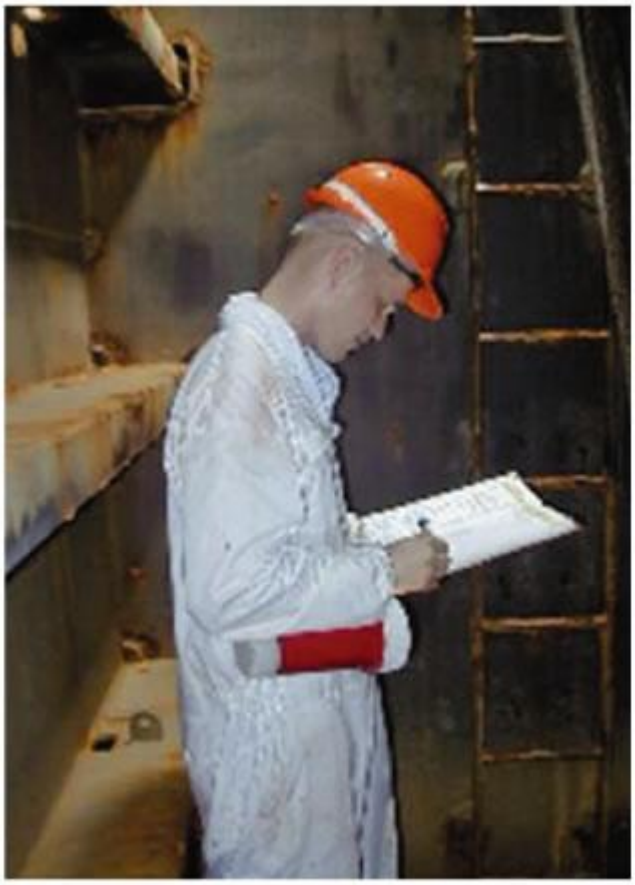
Still, as for all cargo ships with a keel-laying date on or after 1 January 2009, the new criteria for damage stability according to SOLAS Chapter II-1 apply. Consequently, the longitudinal extent of each side tank must be carefully investigated. This will most probably result in relatively small tanks in the forward and aft region of the cargo hold area.

Port limitations

The maximum principal dimensions and therefore the capacity an ore carrier can carry is in general restricted by port limitations such as the permissible sailing draught. The Brazilian iron ore terminals at Ponta da Madeira and Tubarao allow for a maximum sailing draught of 23.0 m which can only be accommodated by a few ports on the discharge side in Europe and the Far East. Infrastructural improvements at existing ore terminal by dredging berths and passages, as well as newly built terminals in the Far East, will allow for even bigger ore carriers with increased draughts in the coming years.

Strength considerations

Global and local strength



Hull Inspection Manual supporting superintendent's work.

Compared to Capesize bulk carriers of single side skin construction, ore carriers show a well balanced stress distribution due to their double side configuration, in particular with respect to shear flow.

The cargo holds of an ore carrier are generally designed for a stowage factor of between 0.5 and 0.6 cubic metres per metric tonne (19.5 to 21.5 cft/ts) throughout the cargo area while a 180,000 dwt Caper utilises a stowage factor of between 0.65 and 0.75 cubic metres per metric tonne for its ore holds due to cargo flexibility.

Due to the 'low volume' cargo holds, cargo pile pressure on the inner bottom of an ore carrier is considerably higher than in a general bulk carrier, such as a Capesize.

In ore carriers, the width of the flat inner bottom is close to 40 per cent of the ship's breadth, compared to about 70 per cent on a general bulk carrier. With a low flat inner bottom aspect ratio of 0.9 for an eight-hold 360,000 dwt ore carrier, and even lower for fewer cargo holds, it becomes apparent that the double bottom floors are the main load carrying members and the longitudinal girders mainly contribute to the longitudinal strength. For a general bulk carrier which is designed to sail in alternate loading conditions, a higher aspect ratio or smaller division of cargo area is essential to cope with the high hull girder and local shear loads in the transverse bulkheads.

The web frame structure in the huge side tanks needs to balance the high downward net loads transmitted by the double bottom floors and the high buoyancy loads in loaded condition and vice versa in ballast condition.

The resulting high shear loads in the plane of the web frames are to be taken up by the fitted cross-ties, hence the scantlings of these structural components must be very carefully designed. An advanced assessment using a three-dimensional Finite Element cargo hold model allows for in-depth analysis of stress distribution, in particular stress concentration, and fatigue strength assessment.

Fatigue strength

As ore carriers are generally tailor-made for a particular trade and usually for more than 20 years, the fatigue strength assessment should be based on at least 25 to 30 years of worldwide operation. Ore carriers are continuously alternating between fullloaded and ballast condition on their round trips and may therefore be subject to low cycle fatigue.

Fatigue has been a critical aspect for general bulk carrier structures for a long time. Due to the trend towards highly optimised structures and the intensified use of higher tensile steel, sound detail design and local stress analyses are of increasing importance. For ore carriers, particular attention has to be paid to the welded connections of the longitudinal stiffeners in the side shell, as they are subject to high cycle loads at the two main draughts.

The corners of the big cut-out in the web frames also need special attention due to high stress fluctuation. Other areas of special attention are the intersection between the inner bottom and longitudinal bulkhead, hatch corners, terminations of hatch coamings and the transitions of the longitudinal bulkhead at the ends of the cargo hold area.

Applying the DNV notation NAUTICUS (Newbuilding) ensures that all critical structural aspects as mentioned above are carefully considered based on a thorough finite element analysis of the cargo hold area. This reduces the risks of structural failure and ensures the adequate durability of the hull structure for the design life of the ship.

Combination carriers – OBO

The concept of the combination carrier evolved in the early 1960s to reduce the time spent in ballast. It is based on same configuration as the specialised ore carrier, but allows the ship to carry oil as an alternative cargo. Utilising the side tanks and centre cargo holds for carrying oil, these ships offer the advantage of trading in wet and dry bulk trades based on seasonal charter rates. However, they cannot carry ore and oil simultaneously.

A sad chapter in the story of combination carriers was the 170,000 dwt Derbyshire, which sank in 1980 some 230 miles off the coast of Okinawa with 42 people on board. On a positive note, the extensive investigation into her loss led to a number of new rules and regulations that made new ships safer. In particular, measures to enhance the watertight integrity of the fore end structure have significantly contributed to increased safety. These include:

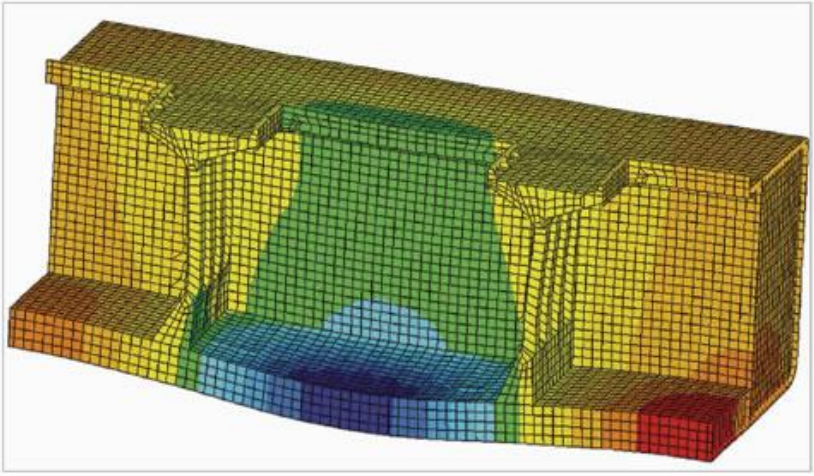
- water ingress detectors installed in cargo holds and dry spaces forward of the collision bulkhead,
- increased design loads and securing requirements for forward cargo hatch covers,
- improved requirements on minimum bow heights and reserve buoyancy,
- the fitting of a forecastle, and
- increased strength criteria for small hatches on the exposed foredeck as well as for air and vent pipes serving spaces forward of the collision bulk head.

In addition, several measures have been introduced to prevent the accidental flooding of cargo holds.

Maintenance and vetting

Although structural integrity is verified based on the newbuilding condition, a continuous maintenance and inspection plan needs to be implemented by the operator to maintain the ore carrier's structural safety and operational capabilities.

Today we are seeing an increased focus on hull structural integrity by the shipping industry, both for safety reasons and to obtain cost efficiency. Condition Assess ment Program (CAP) compliance is becoming more important in order to obtain acceptance by charterers, not only for oil tankers but also for bulk carriers in general and ore carriers in particular. Therefore transparency and continuous control of a ship's hull condition may create business advantages for ship operators and owners.



Cargo hold analysis by 3-D FInite Element model.

DNV's Hull Integrity Management (HIM) is a practical concept developed for that purpose. It helps owners and operators to keep their ship's hull fit for purpose through the continuous control of the hull condition.

Christian.Strobel@dnv.com
Sonke.Pohl@dnv.com
Morten.Lovstad@dnv.com

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Hydrodynamic Trends in Optimizing Propulsion

Dr.-Ing. Uwe Hollenbach 1), Dipl.-Ing. Oliver Reinholz 2)

ABSTRACT

This article presents a number of state-of-the-art optimization approaches and corresponding model test results.

The parametric hull form definitions, together with modern optimization tools, allow for the numerical evaluation of a large number of variants in the shortest amount of time, aiming at further reducing the resistance of already good hull forms. Benefits and drawbacks of these modern tools are discussed.

There is an increasing demand for optimizing hull forms, not only for the design condition, but for "off-design" conditions as well. The expected gains derived from numerical calculations and the gains predicted on the basis of later model tests of the best performing variant are presented.

Further potential for reducing the power demand can be gained by selecting the most suitable propeller, by optimizing the appendages, and by application of energy saving devices. Energy saving devices target improvements in propulsion efficiency by recovering losses from the propeller slipstream or improvements in the water flow to the propeller, allowing a propeller design with higher efficiency. The latest model test results with these devices, including full-scale results of the novel Mewis Duct®, are presented.

Especially smaller ships, such as coastal vessels, are equipped with variable pitch propeller plants. The pros and cons of such installations are discussed with special attention again to the "off-design" condition.

Furthermore, we present examples of hull form modifications, a possible refit of some propulsion improving devices, and alternative propeller designs to ships in service.

1 Introduction

High fuel oil costs are the reason shipyards and ship owners are now focusing more than ever on the reduction of propulsion power. For new building projects, the most effective measure to minimize the vessels resistance is to choose suitable main dimensions in the first place, after which the optimization of

the form should be considered. Both the main dimensions and the hull form can hardly be modified for vessels already in service. But there are still a lot of measures where the hydrodynamic performance of existing vessels can be improved, too.

2 Parametric Hull Form Optimization

At the end of the year 2007, HSVA extended its hull form design capabilities by purchasing the FRIENDSHIP Framework CAE environment.

Its main feature is the sophisticated hull form variation via fully or partially parametric modeling of the hull surface and the embedded optimization strategies. This allows for the evaluation of a multitude (from a few hundred up to several thousands) of automatically generated hull forms by potential flow calculations during the optimization process. HSVA"s free surface potential flow code vSHALLO is directly linked to the framework.

It must be clearly stated that this new tool does not replace the experienced hull form designer, nor does it speed up the whole optimization process. In fact, it is more time consuming and thus more costly. Further, it requires accurate definition of the design constraints to be taken into account. The benefit from this process is the possibility of further improving already good hull forms to a remarkable degree, often beyond a level usually achieved by conventional optimization.

3 Optimizing Hull Forms for "Off-Design" Conditions

Based on an existing hull form, which has been thoroughly optimized for design draught and design speed already, HSVA has been contracted in a number of projects during the last year, from ship owner side or from charter party side, to optimize their existing hull form for "off-design" conditions. "Off-design" conditions in this context means not only the design speed, but a number of additional (lower) speeds, and not only the design draught, but a number of different draughts covering a wider range from scantling draught down to a partial loaded draught of approximately 70% of the design draught.

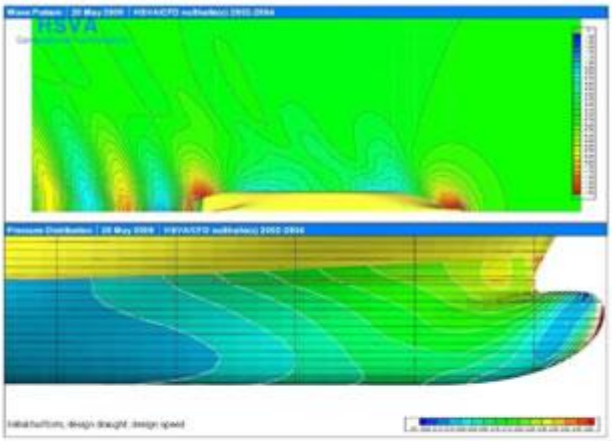

Figure 1 – CFD result of the initial hull form for design draught and design speed

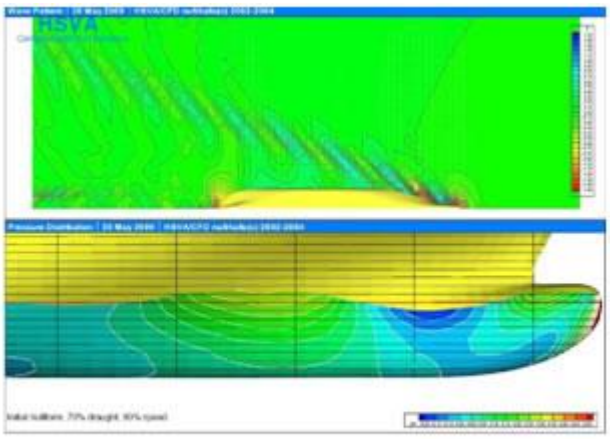

Figure 2 – CFD result of the initial hull form for partial draught and 80% of design speed

Typically, such an investigation starts with potential flow calculations of the initial hull form for all draughts and speeds to be investigated, and with a comparison of the corresponding wave photos from the model tests. Exemplary, Figure 1 shows the pressure distribution and the excellent wave profile (calculated and during model test) of the initial hull on design draught and at design speed.

For the same hull form, Figure 2 illustrates the pressure distribution and the wave profile, which have been calculated for a partial loaded draught of about 70% of the design draught and a speed corresponding to about 80% of the design speed.

It is noted that with reduced speed and reduced draught, the originally excellent wave profile gets entirely lost and remarkable wave crests and wave troughs occur along the ships length. This corresponds to a dramatic increase of power demand compared to the design draught and design speed condition. The required power at the 80% speed on the 70% draught has been about 15% higher compared to the design draught at the same speed.

To improve the situation, the "worst-case" condition has been especially analyzed by HSVA hull form designers. Step by step, the fore body shape and the design of the bulbous have been improved, supported by potential flow calculations and ending up with two most promising design variants.

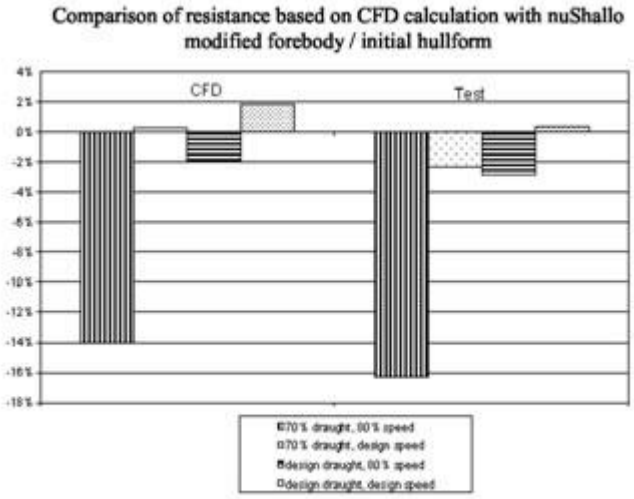

Figure 3 – CFD predicted gains verified by model tests

The two most promising candidates have been manufactured and model tested again. Although potential flow method cannot predict breaking waves or spray, the expected gains predicted by the numerical methods have been surprisingly accurate. Figure 3 shows the expected gains derived from numerical calculations (left-hand side) and the gains predicted on basis of later model tests of the best performing variant.

4 Optimizing Twin-Screw Appendages

Navy vessels of various kinds (Patrol Boats, Corvettes, Frigates, Destroyers, etc.) are typically designed with open shaft arrangements supported by a set of V- and/or I-type shaft bracket arms. The design of shaft bracket arms involves structure, vibration and hydrodynamic analysis and design. The hydrodynamic design goals are to reduce the resistance of the vessel, to minimize the strut shadow in way of the wake field, and to avoid separation and cavitation on the struts. This aims in finding the best compromise between hydrodynamic, structure (strength, vibration), and fabrication (cost) requirements.

After having selected a suitable strut profile a detailed investigation of a proposed strut configuration is performed either by model tests or by numerical calculations.

Model tests have the advantage that special effects, e.g., a rotating shaft, can be considered, which influences the local flow around the shaft and thus the inflow to the strut profile. However, scale effects may have a remarkable influence on boundary layer and thus on the measured results. Numerical methods, in principal, allow for calculating the flow condition both for model scale and for full scale. Furthermore, the calculation delivers the whole flow field around the hull and gives much better insight into the flow behavior in total.

The numerical analysis of the proposed arrangement and design of the bracket arms is typically performed in several steps. In a first step, a RANS calculation of the ship condition "bare hull + shafts" is performed, using the commercial viscous flow code COMET (solving the Reynolds Averaged Navier Stokes equation1). The aim of this investigation is to determine the cross flow of the undisturbed flow field along the strut axis.

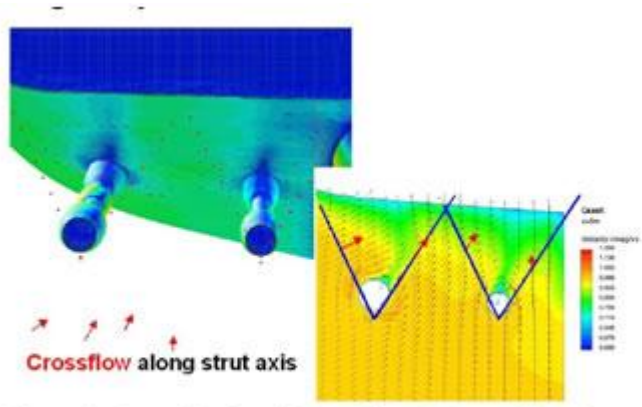

Figure 4 - Determination of the undisturbed cross flow along the strut axis by RANS

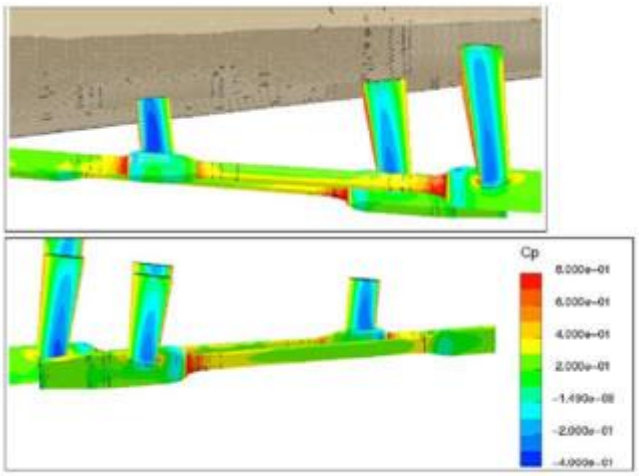

Figure 5 - Surface pressure of the struts by RANS

Based on the results of the RANS calculation, the sections over the length of each strut arm are aligned to the cross flow, which results in an individually twisted shaft bracket arm geometry.

In a second step, a RANS calculation of the ship condition "bare hull + shafts + brackets" is performed. This investigation aims at judging the surface pressure of the struts on one hand, and at judging the wake field and the quality of the inflow to the propellers.

For the alignment of shaft line appendages, we propose using a simple propeller model, realized via body forces within a RANS simulation. This model is considered accurate enough to include the upstream disturbances due to the working propeller.

The RANS calculations can be performed in parallel to the hull form development well in advance to the model tests. The results can already be taken into account during hull form optimization and can help speed up the whole design process.

5 State of the Art Propulsion Improving Devices (PID)

Propulsion Improving Devices are stationary flow-directing devices positioned near the propeller. These can be positioned either ahead of the propeller fixed to the ship"s structure, or behind, fixed either to the rudder or the propeller itself.

Ideally, a model test campaign on PID should be accompanied by a RANS analysis for both model and full scale. The comparison of calculations and model tests can confirm the RANS predictions for the model scale. This then gives sufficient support to let the calculated scale effects enter the full scale prediction, the latter still generally based on the measured model scale propulsion performance.

Well known devices for reducing the wake losses are the WED (Wake Equalising Duct), see Schneekluth (1986), and the SILD (Sumitomo Integrated Lammeren Duct) as detailed in Sasaki and Aono (1997). Devices for reducing the rotational losses include the SVA fin system (Mewis & Peters 1986), the Daewoo Pre Swirl Fin system (Lee et al 1992), and the Hyundai Thrust Fin system, which is fitted to the rudder, see Hyundai (2005). A well-known solution to reduce the losses in the propeller hub vortex is the PBCF (Propeller Boss Cap Fins) (Ouchi et al 1990). The Kappel propeller utilizes a special tip fin integrated into the propeller blades to reduce the tip vortex losses, see Andersen et al (1992).

Today, primarily the large Korean shipyards including Daewoo Shipbuilding & Marine Engineering Co., Ltd (DSME), Hyundai Heavy Industries Co., Ltd (HHI) and Samsung Heavy Industries Co., Ltd (SHI) and the large Japanese shipyards including Sumitomo Heavy Industries and Kawasaki Shipbuilding Corporation are investigating the means for recovering the losses in the propeller slipstream. In the last years, the following concepts have been tested at HSVA.

6 The Pre-Swirl Stator of DSME

DSME has been developing the pre-swirl stator concept for more than ten years now. The DSME pre-swirl stator concept consists of three to four stator blades mounted on the boss end of the hull in front of the propeller.The stator does not on its own save energy or create forward thrust; in fact, it adds to the resistance. Despite the added resistance, the stator blades induce a favorable asymmetric inflow to the propeller and thus improve the propulsion efficiency. In the case of a four-blade stator as is typical for Container Vessels, three blades are arranged on the port side and one blade is arranged on the starboard side. The main role of the three blades on the port side is to reduce the slip loss of the propeller encountered when the blades pass upwards on the port side. The single blade on the starboard side is adopted to increase the wake fraction for higher hull efficiency while at the same time minimizing any unfavorable effect on propeller cavitation.

Figure 6 – *DSME* pre-swirl stator

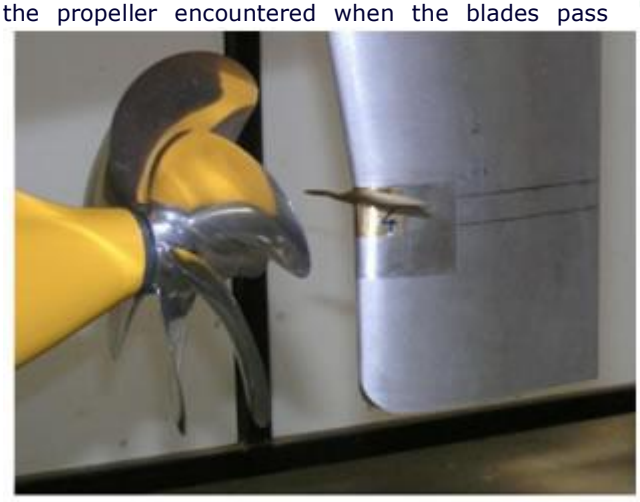

Figure 7 – HHI thrust-fin

7 The Thrust Fin of HHI

HHI has been developing the thrust-fin concept for several years. Both x-shaped thrust fin

configurations with four blades and thrust fins consisting of only two blades have been investigated. The thrust fins are designed such that the blades generate thrust in the rotating propeller slipstream.

The design of the twisted blades requires highly sophisticated numerical simulations and vast experience. During model tests, the generated thrust can be recognized in a reduced thrust deduction fraction. This results in higher hull efficiency and thus better propulsive efficiency.

8 The Post Stator of SHI

SHI is developing a Post Stator concept. X-shaped fins located aft of the propeller are combined with an integrated propeller cap and rudder bulb. This concept aims at reducing the losses due to propeller hub vortex and at recovering energy from the rotational losses in the propeller slipstream similar to the thrust fin concept.

Compared to the pre-swirl stator, the post stator is relatively moderate in size (less than 80% of the propeller diameter) and does not have any effect on the propeller cavitation.

Figure 8 – SHI post stator

9 Safer Fins of SHI

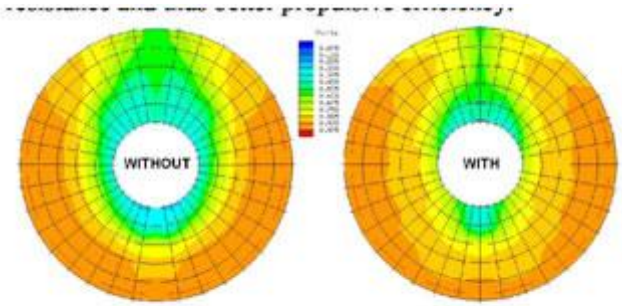

Figure 9 – Wakefield with and without VG-fins

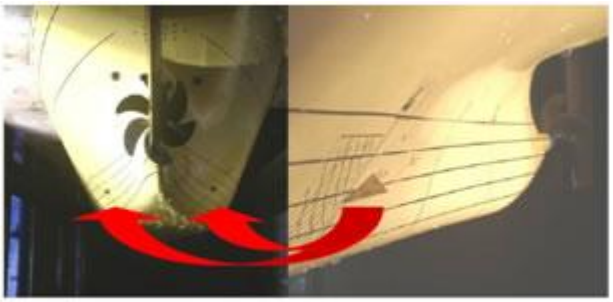

Figure 10 – Arrangement of VG-fins at a Container Vessel

Figure 11 – Sumitomo Integrated Lammeren Duct (SILD)

Vortex generator fins (VG-fins) are sometimes applied to container ships aiming at improving the inflow to the propeller, and thus reducing pressure pulses and the vibration level in the aft superstructure above the propeller. Properly arranged, these fins typically reduce pressure pulses by about 50%. At container ship, the application of VG fins "costs" up to 2% increase in power demand.

SHI proposes application of similar Safer Fins at full block vessels to reduce the bilge vortex and thus reduce flow separations in the aft body. This results in lower resistance and thus better propulsive efficiency.

10 The Sumitomo Integrated Lammeren Duct

Sumitomo has been successfully applying a duct forward of the propeller to their new projects for several years now. The duct aims at improving the quality of the inflow to the propeller and at the same time reduces separations in the aft body of full block vessels.

Today, this concept is combined with additional fins ahead of the SILD. Depending on the magnitude of the separations, remarkable gains in propulsion power have been found during model testing for a number of Sumitomo projects.

11 Typical Gains by PIDs

Between 2005 and 2011, HSVA tested the following PIDs on different projects:

Table 1 – Typical Gains of PIDs

Year	Ship Type	Device	Gain in Power	
			Design Draught	Ballast Draught
2010	ConRo Vessel	*DSME* Pre-Swirl Stator	3.7%	Not investigated
2009	Kamsarmax Bulk Carrier	*DSME* Pre-Swirl Stator	6.3%	1.4%
2009	7,450 TEU	*DSME* Pre-Swirl Stator	3.6%	Not investigated
2008	16,000 TEU	*DSME* Pre-Swirl Stator	3.8%	Not investigated
2008	13,050 TEU	*DSME* Pre-Swirl Stator	4.5%	3.2%
2008	14,000 TEU	*DSME* Pre-Swirl Stator	4.5%	4.7%
2008	4,400 TEU	*DSME* Pre-Swirl Stator	1.0%	Not investigated
2008	7,090 TEU	*DSME* Pre-Swirl Stator	3.3%	0.4%
2007	VLCC	*DSME* Pre-Swirl Stator	5.6%	5.5%
2007	6,300 TEU	*DSME* Pre-Swirl Stator	3.3%	Not investigated
2007	8,400 TEU	*DSME* Pre-Swirl Stator	3.5%	1.1%
2005	VLCC	*DSME* Pre-Swirl Stator	4.8%	Not investigated
2011	158k DWT Tanker	*SHI* Safer Fins	3.2%	Not investigated
2007	8,000 TEU	*SHI* Post Stator	3.9% *	Not investigated
2005	8,000 TEU	HHI Thrust Fin	4.9%	Not investigated
2007	Aframax Tanker	Sumitomo SILD	8.7%	Not investigated
2003	Aframax Tanker	Sumitomo SILD	6.0%	Not investigated

* measured in HSVA's large cavitation tunnel HYKAT at higher Reynolds Numbers

12 The Pre-Swirl Mewis Duct® (PSD)

A novel approach for a PID is the Pre-Swirl Duct (PSD), which is marketed under the trademark Mewis Duct®. This power-saving device consists of a wake equalizing duct combined with an integrated pre-swirl fin system positioned ahead of the propeller. By pre-correcting the flow into the propeller, the device essentially reduces the rotational losses in the resulting propeller slipstream and increases the flow velocity towards the inner radii of the propeller.

The PSD is suited to vessels with high block coefficient and speeds lower than 20 knots. This encompasses tankers and bulk carriers of every size, together with multi-purpose carriers and feeder type container vessels. The expected power reduction is in the range of 3% to 9%, depending on the propeller loading, and is virtually independent of ship draught and speed. Mewis Ship Hydrodynamics (MSH), Dresden, Germany, has developed the PSD in co-operation with Becker Marine Systems GmbH & Co. KG (BMS), Hamburg, Germany.

Figure 12 – Bulk carrier model with *BMS* Mewis Duct®

On behalf of BMS, model tests were carried out at HSVA for an open hatch bulker, owned by aScandinavian Shipping Group, to be refitted with the BMS Mewis Duct®. After optimization of the pitch settings of the fins, self-propulsion tests have been performed with and without the Mewis Duct® at the design draught and a light loaded draught with trim down by the stern. At design, draught the power gain by the Mewis Duct® was found to be about 6.0% at 16 knots, corresponding to a speed in crease of 0.27 knots. At the light loaded draught, the power gain was 5.4% at 16

knots,corresponding to a speed increase of 0.24 knots.

To date, the BMS Mewis Duct® has been tested for nine different projects at HSVA. Notable is the very high power reduction by the PSD of the ship with a controllable pitch propeller fitted (high hub to propeller diameter ratio), as well as the virtual independence of the ship"s draught to the performance of the PID. For all three projects, the rpm reduction achieved by the PSD at constant power is less than 1%, which makes this PSD especially suitable for refit projects.

In the meantime, the predicted performance has been successfully proven by sea-trials for two projects performed with and without the Mewis Duct®.

Table 2 – Model test results with BMS Mewis Duct®

Year	Ship Type	Gain in Power	
		Design Draught	Ballast Draught
2011	151k DWT Tanker	4.7%	Not investigated
2010	75k DWT Tanker	3.9%	7.2%
2010	163k DWT Tanker	4.7%	7.1%
2010	158k DWT Tanker	3.8%	Not investigated
2010	57k DWT Bulker	5.4%	7.8%
2010	20,000 DWT MPC	1.5%	Not investigated
2009	45k DWT Bulker	6.0%	5.4% *
2008	12,000 DWT MPC	7.7%	7.4%
2008	Aframax Bulk Carrier	6.9%	Not investigated

* light loaded draught condition

Several further projects that are to be equipped with the BMS Mewis Duct® are due for model testing at HSVA during 2011.

13 Propulsion Improvements by Alternative Propeller Designs

As a promising device regarding reduction of fuel consumption, the Mecklenburger Metallguss GmbH (MMG), Waren, Germany, together with the well-known European Shipping Group and HSVA have investigated possibilities to apply a three-bladed propeller to increase the propulsive efficiency of a very large crude oil carrier (VLCC).

Figure 13 – VLCC ship model tested with a 3-bladed propeller designed by *MMG*

This ship had been in service with quite a conventional four-bladed propeller already for some years without any complaint.

Within the investigation, MMG has calculated theperformance of three- and four-bladed propeller alternatives with varying diameters for the ship. For all variants the radial pitch and camber distribution was reevaluated to achieve best wake adaptation in each case. 96.0% ETAM The latter is of extreme importance for full block ships as considered here. The final calculations promised a significant efficiency improvement, based on the unconventional choice of the propeller blade number.

Since both the ship hull and the conventional propeller were available at HSVA in model scale from the development phase of the ship, comparative tests could now be carried out with reasonable expense. The encouraging model test results showed that the three-bladed propeller gains up to 3.3% in power requirement.

It had to be expected that this efficiency increase would be accompanied by an extensive amount of cavitation, resulting in large propeller induced hull pressure pulses. To investigate this matter, the cavitation behavior of both propellers was subsequently tests in HSVA"s large Hydrodynamic and Cavitation Tunnel HYKAT.

The sheet cavitation of the three-bladed propeller was somewhat more extended indeed, but its character was very similar to the conventional propeller. The cavitation was still smooth and non-erosive. The hull pressure pulses were higher as well, but did not exceed the level acceptable for a VLCC.

Of course, a three-bladed propeller is not an alternative for a highly loaded propeller of a fast container vessel. But for tankers or bulkers, the new propulsion concept has shown very encouraging results.

14 Operating CP Propellers in "Off-Design" Conditions

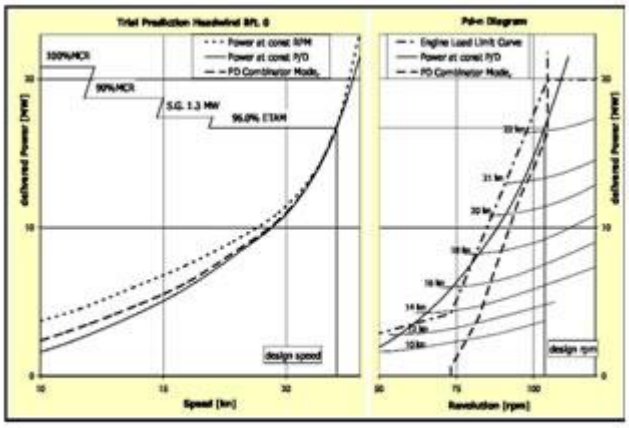

Figure 14 – Speed-power and rpm-power prediction for a CP propeller

Small- and medium-sized merchant ships such as container ships, multi-purpose vessels, tankers, RoRo and RoPax ships and passenger ferries operating in coastal areas are often equipped with controllable pitch (CP) propeller plants. The CP propeller plant offers a flexible operation of the ship, excellent stopping abilities without the need of reversing the main engine and, in combination with a shaft generator, to generate the electricity for the sea load by the main engine. To supply electric power, the CP propeller plant is operated in the constant rpm mode. As an alternative, a thyristor-controlled generator could be used, but this is quite an expensive solution. For the design condition of a ship, the efficiency of the CP propeller is almost the same as with a fixed pitch propeller. However, this may change when it comes to "off-design" conditions.

For an existing ship in service, HSVA has been contracted by a ship owner to investigate the behavior of the CP propeller plant, especially in "off-design" conditions. Preconditions for such an investigation is the availability of model test results for the draught and speed range of interest, and the availability of open water curves of the CP propeller for a set of pitch settings from the "zero-thrust" condition up to the maximum pitch.

The most reliable information on the propeller performance can be gathered from propeller open water tests performed for different pitch settings. Alternatively, as has been done in this case, the propeller manufacturer can supply the propeller open water curves.

As a reference, for each draught condition, the performance of the CP propeller for the "fixed pitch mode" has been calculated. Further, the performance of the CP propeller in the "constant rpm mode" has been calculated, and finally the performance in the "combinator mode". In Figure 13, the power requirement in the different modes is shown for one draught condition.

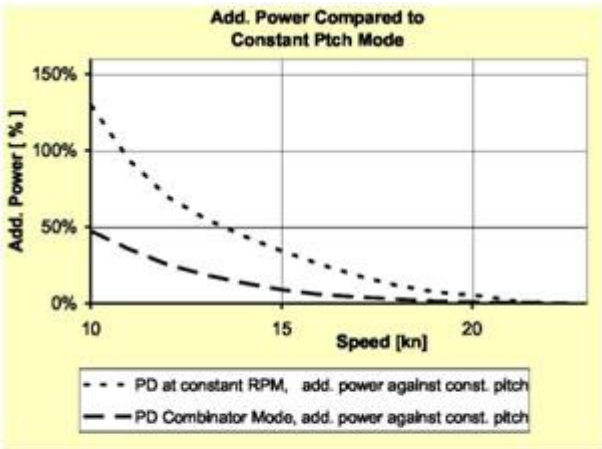

Figure 15 – Additional power demand of a CP propeller in different modes

It is noted that with reduced speed, the power demand in the "constant rpm mode" is significantly higher than in the reference condition "fixed pitch mode". In the "combinator mode", the power demand is almost as low as in the reference condition. In the example presented in Figure 14, the required power at the 70% speed in the "constant rpm mode" is about 35% higher compared to the "fixed pitch mode".

Such an investigation of the performance of a CP propeller plant can be performed for a range of draughts and ship speeds, and for various wind and sea conditions.

All information at hand allows the ship owner and operator to decide upon the optimal operating mode of his CP propeller plant within the allowed envelope of the engine load diagram. He then can decide whether it is more efficient to operate the CP propeller in "constant rpm mode" in combination with the shaft generator, or to switch to the "combinator-mode" and generate the needed electric power by an additional auxiliary engine. In this particular case, the engine load limit curve allows combinator settings which are rather close to the fixed pitch situation. In cases where the engine has a very PD at constant RPM, add. power against const. pitch narrow load limit curve, the resulting combinator setting can be closer to the constant rpm situation. The more expensive option with a thyristor-controlled generator may also pay off, when compared with additional fuel oil costs due to CP propeller operation in the "constant rpm mode".

Investigations for different type of propellers conclude that highly loaded CP propellers typically have a much higher power demand than low-loaded CP propellers in "off-design" conditions. Even trickier to

judge is the operation of CP propeller plants of twin-screw vessels (e.g., single shaft operation) or propulsion plants, where two main engines are operating on a single propeller.

Figure 16 – Bulk carrier ship model with rudder bulb

15 Fitting a Bulk Carrier with an Interceptor and a Rudder Bulb

On behalf of a Scandinavian consultancy company, model tests were carried out at HSVA for a Panamax Bulk Carrier Project. As, after extensive tests for hull form optimization, the designers still expected a potential for further improvements on the propulsions side, further tests with different rudder bulb configurations and also with an interceptor were performed.

The best rudder bulb required about 4.0% less power than the standard case without rudder bulb. In conjunction with an interceptor, the total power reduction was 4.4%. This variant was chosen as the best variant tested.

16 Tanker Conversion Project

On behalf of a Scandinavian shipping company, model tests were carried out at HSVA for a tanker conversion project. The aim of these tests was to improve the performance of this ship in service by a bow modification. Further, the ship owner was interested in receiving guidelines for operating the ship on ballast draught conditions.

The investigated bow modifications do not offer a sufficient enough reduction in power consumption to be economical. The small gain in power consumption by the investigated bow modification (about 1.0% at most) led to the decision to do a trim optimization for the ship as in service at service draught. With a static trim to the stern of 1.5 m, a reduction of the power consumption by about 1.9% was obtained.

Figure 17 – Proposed fore body modification for a Tanker conversion project

Following the tests at service draught, a variation of the ballast draught was investigated. The results show that the hull form has only a low sensitivity to changes in draught at a speed of 16.0 kts. At 17.0 kts, the highest forward draught shows a clear tendency to increased power consumption (7.6% compared to the lowest forward draught). At even higher speeds, the lowest forward draught offers a significant advantage in power consumption (13.3% at 17.5 kts compared to the highest forward draught).

In a second step of investigations, a large modification of the under-water part of the fore body was investigated using potential flow CFD-calculations. The results of the model tests proved a significant reduction in power consumption of 4.1% at 16.0 kts at service draught. A further reduction of about 2.5% compared to the even keel condition could be obtained by trimming the vessel to the stern. At the ballast draught, the bow modification had no influence on the power consumption within accuracy of the model tests.

17 Hydrodynamic Upgrade for the MV „Hammerodde“

The MV ‘Hammerodde“ is a RoPax ferry, which serves Rønne on the island of Bornholm from the Danish port of Køge near Copenhagen and from the mainland port of Ystad in Sweden. She was built in the Netherlands by Merwede Shipyard and has been in service since April 2005. Together with her sister ship, the MV ‘Dueodde“, she sails under Danish flag for Bornholmstrafikken A/S.

Figure 18 – The MV 'Hammerodde'

In order to fulfill a new contract with the Danish Ministry of Traffic, the MV 'Hammerodde" will now be required to increase her cargo-carrying capacity from the present 1200 lane meters up to 1500 lane meters. The required space will be made available by adding a further RoRo deck. The corresponding demand for about 10% more displacement will be fulfilled by increasing the draught and at the same time adding a set of sponsons and ducktail. The sponsons and ducktail not only provide more displacement, but at the same time, a larger waterplane area to ensure sufficient stability for the „after conversion" hull form.

A further and somewhat more challenging feature of the new contract is that the present speed of the vessel, which is now 18.5 knots, must be maintained. The idea of fulfilling this requirement via an expensive machinery upgrade is not particularly appealing to the ship owner. Therefore, the Finnish marine consultants Foreship Ltd. were requested to add more than 800 m3 to the volume while at the same time maintaining the speed without increasing the power requirement.

Figure 19 – The model showing the 'after conversion' condition

In November 2008, HSVA was contracted to perform the model tests for the MV 'Hammerodde" conversion project. The targets of the investigation included the sponsons/ducktail, an alternative bulbous bow, and the introduction of an interceptor plate on the ducktail transom. For this purpose, a very time- and cost-efficient test program was agreed upon and a multi-component ship model was manufactured.

In Phase 1 of the testing work, the hull form modifications and interceptor performance were investigated. In Phase 2, the concentration will be placed on the rudder design and also on a shift of the rudder position. It is expected that the installation of a high efficiency rudder system in conjunction with flap rudders will not only increase the propulsive efficiency, but will also especially improve the harbor manoeuvering capabilities. These will be further investigated in a series of crabbing tests.

In the meantime, the first phase of testing has been completed with a very encouraging result for the ship owner. In the past, conversions of this magnitude have usually resulted in an overall speed loss for the vessel. In the case of the MV 'Hammerodde", however, the speed loss of about 0.5 knots due to the added volume and increased draught was simply compensated by the introduction of the interceptor. Thus, the contract point concerning maintaining the 18.5 knots speed has been met. Why invest in an expensive machinery upgrade when you can avoid it by upgrading the hydrodynamics instead? Due to the introduction of a tailor-made rudder-propeller package with high-efficiency flap rudders, another impressive 4.5% power reduction at the target speed could be achieved. The MV 'Hammerodde" will thus be fulfilling her new contract with a reduced fuel bill

18 Conclusions

The state-of-the-art techniques not only allow for optimizing the hull form itself, but for the optimization of the propulsion arrangement as well. The most effective measures to save propulsion power can be taken in the definition phase and in the design stage of a new building project:

- Carefully select main dimensions, required service speed and the propulsion device. Design your new building vessel as long and as slender as possible.
- Avoid too strict hard point requirements in the engine room and the cargo hold. The general design has to follow the hydrodynamic design, and not the other way round.
- Thoroughly investigate the possibilities applying PIDs on your vessel. Most effective are tailor made applications taking into account the ship type and the operational profile of the vessel.
- Cooperate with an independent model basin in the definition and design phase of a new building project. The most effective team consists of shipyard + ship owner + model basin.

- Let your vessels being optimized by the model basin of your choice.

Not only in the design phase, but during the whole lifetime of a vessel several measures can be taken to save fuel oil costs:

- Maintain the hull surface and the propeller as smooth and clean as possible.
- Operate your vessel in optimum trim conditions.
- Optimize your routes and reduce the service speed as far as practicable.

REFERENCES

Several HSVA model test reports on resistance and propulsion of merchant ship projects have been evaluated for this paper, which are not mentioned here in detail.

Andersen, P., Kappel, J. J., & Schwanecke, H. (1992).

„On Development of Tip-Fin Propellers'. Jahrbuch der Schiffbautechnischen Gesellschaft 86, pp. 203 – 209.

Hollenbach, U. (2008). „Model Testing of Propulsion Improving Devices (PID) at HSVA". NewsWave 2008(2), The HSVA Newsletter, PDF-file from http://www.hsva.de.

Hollenbach, U. & Schnoor, H.-U. (2010). „Operating CP propellers in ´Off-Design´ Conditions". NewsWave 2010(1), The HSVA Newsletter, PDF-file from http://www.hsva.de.

Johannsen, C. (2007). „Three Blades for reduced Fuel Consumption". NewsWave 2007(1), The HSVA Newsletter, PDF-file from http://www.hsva.de.

Lee, J. T., Kim, M. C., Suh, J. C., Kim, S. H. & Choi, J. K. (1992). „Development of a Preswirl Stator Propeller System for Improvement of Propulsion Efficiency: a Symmetric Stator Propulsion System". Transaction of SNAK 29(4), Busan, Korea.

Mewis, F. & Peters, H.-E. (1986). „Power Savings through a Novel Fin System". 15. SMSSH Conference Proceedings, Varna, Bulgaria.

Mewis, F. (2009). „A Novel Power-Saving Device for Full-Form Vessels". First International Symposium on Marine Propulsors SMP"09, Trondheim, Norway.

NN. (2005). „Hyundai Thrust Fin Improving Propulsion Efficiency". Flyer, Hyundai Maritime Research Institute, Ulsan, Korea.

Ouchi, K., Kawasaki, T. & Tamashima, M. (1990). „Propeller Efficiency enhanced by PBCF". 4th International Symposium on Marine Engineering (ISME 90), Kobe, Japan.

Richards, J., Reinholz, O., Choi, Y. B. & Kim, I. P. (2008). „DSME Pre-Swirl Stator and Special Consideration on Model Tests with this Device". STG Sprechtag, 18th September 2008, Papenburg.

Richards, J. (2009). „Optimizing Hull Forms for ´Off-Design´ Conditions". NewsWave 2009(2), The HSVA Newsletter, PDF-file from http://www.hsva.de.

Sasaki, N. & Aono, T. (1997). „Energy Saving Device SILD". Journal of Shipbuilding 45(135).

Stern, F., Kim, H. T., Patel, V. C. & Chen, H. C. (1988). „A viscous flow approach to the computation of propeller-hull interaction". Journal of Ship Research 32(4), pp. 246-262.

Schneekluth, H. (1986). „Wake Equalising Ducts". The Naval Architect, London, UK.

Wagner, R. (1929). „Rückblick und Ausblick auf die Entwicklung des Contrapropellers„. STG Hauptversammlung, Jahrbuch der STG 30, 22nd November 1929.

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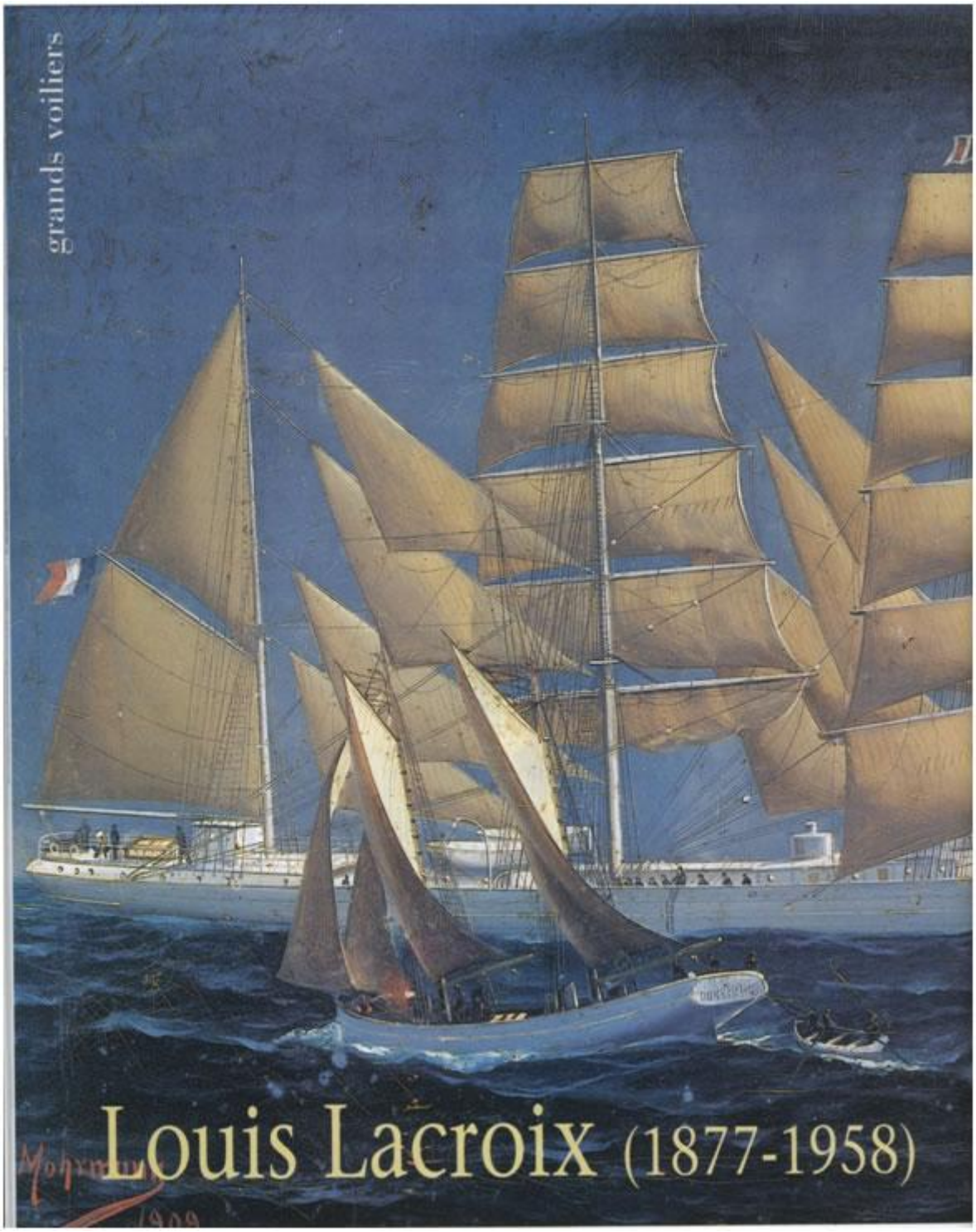
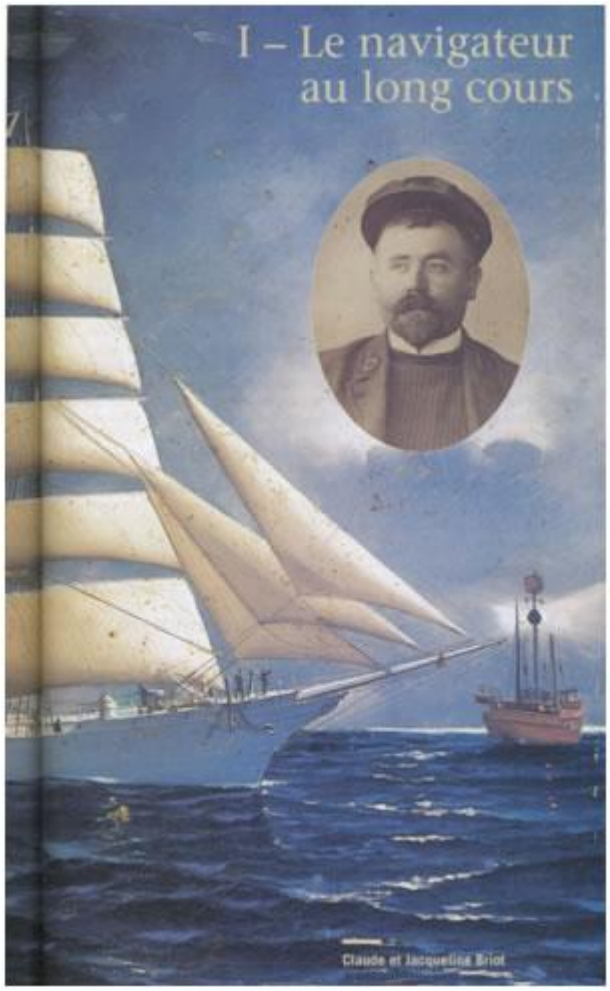


Tout le monde connaît "Les Derniers Grands Voiliers", "Les Derniers Cap-horniers français" ou "Les Derniers Baleiniers français". Mais qui était l'auteur de ces ouvrages?

Grâce au croisement de sa correspondance et de ses souvenirs avec les archives publiques et familiales, voici reconstitute le parcours de Louis Lacroix, dont ce premier article retrace la carrière de navigant.



Le trois-mâts barque *Jeav*, dernier navire commandé par Louis Lacroix, de juillet 1909 à août 1910. Tout dessus, grand phare masqué, le long-courrier attend son pilote près du bateau-feu *Wandelaer*, devant Zeebrugge. La goélette-pilote, pourtant baptisée *Dunkirque*, a la coque peinte en blanc comme les unités du service de pilotage belge. Cette belle huile sur toile peinte en 1909 est due à Henry Mohrmann (1857-1916), portraitiste de navires né à San Francisco, mais citoyen belge établi à Anvers. Louis Lacroix appréciait sans doute cet artiste, car c'est à lui qu'il a confié l'exécution du portrait de la plupart des grands voiliers qu'il a commandés.

En médaillon : photo d'identité de Louis Lacroix figurant sur un laissez-passer du canal de Suez.

Suivront le portrait du capitaine d'armement et de l'expert maritime, puis celui du mémorialiste de la voile.

Le 7 janvier 1877, une heure après le passage du soleil au méridien, Pierre-François Louérac, maire de La Bernerie-en-Retz (Loire-Inférieure, à l'époque) enregistre la naissance d'un enfant de sexe masculin, né le matin même, auquelson père, Benjamin Lacroix, trente et un ans, notaire, déclare vouloir donner le prénom de Louis-Benjamin. Deux voisins cultivateurs sont témoins. La maman, Marie Thuillier, vingt ans, est déclarée sans profession, c'est-à-dire mère au foyer. Sur cet acte de naissance seront ajoutées ultérieurement les mentions marginales : "Marié à Nantes le 19 octobre 1910 avec Germaine-Eugénie Lorfray", et "Décédé à La Bernerie le 27 octobre 1958". Toute une vie résumée en si peu de mots ! Et pourtant quelle vie ! Que d'aventures, que d'expériences et de souvenirs engrangés pendant ces quatre-vingt-une années ! Que de labeur aussi, pour ériger ce formidable monument littéraire à la mémoire de la voile au travail. Un monument documentaire sans équivalent, même si certains détails manquent parfois de précision, l'auteur n'ayant pu accéder aux archives - alors non classées ni inventoriées, ou soumises à prescription - pour recouper a posteriori les témoignages de ses nombreux informateurs.

Faute de témoignages, l'enfance de Louis Lacroix ne nous est pas connue. On doit donc se borner à imaginer un gamin rêvant de grands voyages autour du monde en godillant sur sa plate dans la baie de Bourgneuf. Peut-être s'ennuie-t-il un peu sur les bancs de l'école, où il ne songe sans doute pas à faire de vieux os. En effet, en 1892, à l'âge de quinze ans, il entre comme apprenti gréeur aux Chantiers de la Loire. Un premier pas vers le monde maritime. Car il sera marin, comme on l'était autrefois dans sa famille. Et il le sera pleinement, avec passion.

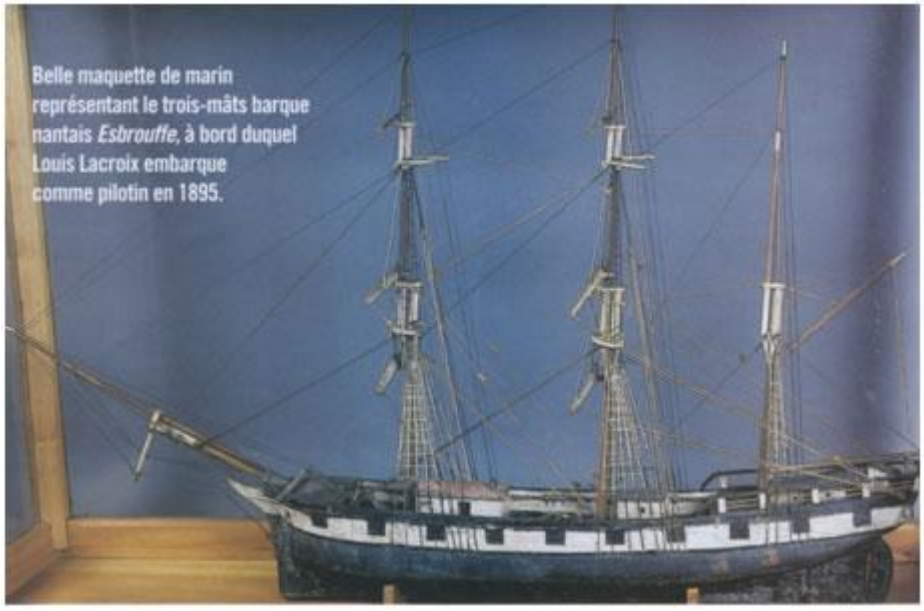
Selon un relevé de ses états de service établi de sa main en 1937, il navigue comme novice sur les trois-mâts nantais Esbrouffe et Frédéric-Suzanne, de 1895 à 1897. Mais quarante-deux ans après les faits, la mémoire peut vous trahir. S'il apparaît bien sur le rôle d'équipage d'Esbrouffe, un troismâts de 370 tonneaux armé à Nantes le 24 mars 1895 par Pitre-Rozier pour Pointe-à-Pitre,

c'est en tant que pilotin sans solde (inscrit maritime provisoire sous le n° 79), l'enseignement et la nourriture à bord étant à la charge de la famille.

Louis Lacroix enfant (à gauche), en compagnie de ses deux sœurs, Marie et Gabrielle. Le même sous les drapeaux : le matelot fourrier s'initie aux "écritures" et pose déjà avec son chien.

Dans une lettre à ses parents, écrite en rade de La Trinité (Martinique) deux mois après son départ, le jeune homme confie les impressions de ce premier voyage au long cours : "C'est dur, on ne dort pas beaucoup, la mer est souvent grosse, il y a des avaries. Sur les rades il fait chaud et il y a des moustiques, on n'a pas le temps d'aller à terre; 60 tonneaux de lest en cailloux à décharger en deux jours pour ensuite charger des boucauts de sucre !" Pour rassurer les siens, il ajoute tout de même : "Si je suis à l'étroit dans ma cabane, je me plais cependant beaucoup à bord, car j'ai maintenant ce dont j'ai toujours rêvé. Ce n'est pas comme le pilotin de la Pauline rencontré à Pointe-à-Pitre. Il s'était épris tout à coup de la mer pour avoir lu des livres et il en a déjà plein le dos au bout de deux mois !" La mer, ce n'est pas toujours comme dans les livres. On a sa fierté à dix-huit ans ! Quant à son embarquement sur Frédéric-Suzanne, les documents manquent pour le confirmer. Sans doute a-t-il dû faire deux voyages à bord en tant que matelot léger, juste avant son service militaire, qu'il effectue dans la Marine nationale, comme il se doit. Il est alors matelot fourrier, chargé des écritures concernant la gestion du personnel et du matériel, une spécialité qu'il va cultiver et qui lui sera très utile plus tard.

Après son service, la loi n'imposant pas encore de diplôme pour naviguer comme chef de quart, Louis Lacroix (inscrit maritime définitif sous le n° 155) embarque comme lieutenant, avec une solde de 40 francs par mois, sur Duchesse-Anne. Le 26 septembre 1899, ce trois-mâts barque en acier est armé à Nantes par Léon Bureau & fils pour un voyage au "tramping" de près de deux ans : chargement de briquettes de charbon à Cardiff pour Madagascar via Bonne-Espérance, puis direction Rangoon (Birmanie) sur lest pour y prendre du riz destiné à Rio de Janeiro; nouvelle traversée sur lest avec passage du cap Horn pour aller chercher du nitrate de soude chilien à Taltal et Iquique ; le cap Horn à nouveau et retour à Londres le 12 mars 1901. Le grand rêve de l'adolescent est réalisé !



Belle maquette de marin représentant le trois-mâts barque nantais *Esbrouffe*, à bord duquel Louis Lacroix embarque comme pilotin en 1895.

Pour le voyage suivant de Duchesse-Anne, armée cette fois pour San Francisco avec ducharbon anglais, Louis Lacroix figure au rôle d'équipage comme élève de la marine marchande faisant fonction de lieutenant, avec une solde de 100 francs par mois. A quel moment a-t-il suivi son cours d'hydrographie ? Il n'en dit mot dans son propre relevé d'états de service et son livret d'inscrit maritime n'a pas été conservé. Dans une brève biographie, parue en janvier 1959 dans le bulletin de l'Union maritime de Basse-Loire, Georges Aubin mentionne son entrée à l'école de navigation à l'issue du service militaire. Mais selon sa belle-fille, Mme Lacroix, il aurait suivi des cours du soir lorsqu'il était sous les drapeaux et aurait obtenu la partie théorique du diplôme de capitaine au long cours en 1899.

Expédié de Nantes le 7 juillet 1901, le trois-mâts Duchesse-Anne est commandé par Julien Bochat, de Binic. Louis Lacroix y embarque à San Francisco le 10 janvier 1902, en remplacement du second, Victor Hillion, débarqué de gré à gré. Dix-neuf jours plus tard, le capitaine Bochat décède. C'est ainsi que Louis Lacroix se retrouve brusquement maître à bord. Pas pour longtemps d'ailleurs, car l'Henriette, de l'armement nantais Brunellière frères, vient de faire naufrage dans l'Oregon, et son capitaine, Alexandre Vau-chan, prend le commandement de Duchesse-Anne pour le retour en France. Le navire parvient à Saint-Nazaire le 20 juillet 1902. C'est son dernier voyage sous pavillon français. Vendu à l'armateur norvégien Brovig, qui le rebaptise Andrea, il quitte Saint-Nazaire le 23 mars 1903. Louis Lacroix reste second à bord pour conduire le voilier en Angleterre, avant de se présenter à l'examen "pratique" de capitaine au long cours. Il est breveté complet le 27 juin 1903.

Huile sur toile de Mohrmann datée de 1910, représentant le trois-mâts barque en acier *Duchesse-Anne* démâté aux Bermudes. Cet événement, survenu en février 1899, soit huit mois avant que le jeune lieutenant Lacroix s'embarque sur ce navire, sera relaté en détail dans *Les Derniers Grands Voiliers*. La concordance entre ce texte et le tableau – pavois bâbord défoncé, grand mât et chambre de veille disparus, configuration du gréement de fortune réduit au bas-mât de misaine – semble indiquer que le peintre a travaillé sous la dictée du mémorialiste, selon l'usage des portraitistes de navires.

A l'issue de son premier voyage, le trois-mâts barque en acier Maréchal-de-Gontaut, armé par la Compagnie de navigation française, décharge son nitrate de soude chilien à New York. L'équipage est alors relevé, le navire devant repartir directement de la côte Est pour une longue traversée vers le Japon. Embarqué à New York le 5 août 1903, Louis Lacroix succède au capitaine Tonnerre. C'est son premier véritable commandement. L'apprenti gréeur qui rêvait de prendre le large a concrétisé ses plus grandes espérances : le voici capitaine (inscrit à Nantes sous le n° 443), seul maître après Dieu d'un navire long-courrier.

Ce métier auquel il aspirait tant n'est pourtant pas une sinécure. Le voyage à Yokohama de Maréchal-de-Gontaut, chargé de pétrole en caisses, sera en effet émaillé d'incidents et empoisonné par l'hostilité d'un équipage prompt à la rébellion. Autant d'événements scrupuleusement relatés par le capitaine dans son journal de bord.

"Dimanche 20 septembre, l'équipage refuse de se mettre au poste de propreté, les noms sont apostillés au cahier de punitions. Le matelot Clément refuse de balayer : il passe au rapport et est retranché de trois repas (prix de la nourriture déduite du décompte au retour du voyage). Lundi 21 septembre, la bordée de quart refuse de commencer le lavage avant 6 heures. A 11 h 30, refus formel des matelots de se mettre à l'ouvrage sans avoir eu leur boujaron. Le quart de vin du midi est retranché. Le 5 novembre, le mousse Le Bihan tombe de la mâture et se casse une jambe. Le 17 novembre, Clément, encore lui, refuse de monter au quart alors que tout le monde cargue la grand voile : trois jours de retranchement à nouveau. Le 25 décembre, entre l'Australie et la Nouvelle-Calédonie, le matelot Hayes, voulant probablement s'offrir une douceur pour Noël, est pris à voler des oeufs !"

Le 20 février 1904, Maréchal-de-Gontaut arrive à Yokohama. Le déchargement des 76 316 caisses de pétrole sur 94 allèges va durer plus d'un mois. Le 25 mars, le trois mâts barque repart sur lest à destination de Saïgon, où il doit charger 30 600 sacs de riz blanc (3 130 tonnes) pour Dunkerque, chargement perturbé par un cyclone. Parti de Saïgon le 27 mai, le navire traverse la mer de Chine pour franchir le détroit de la Sonde et faire route sur le cap de Bonne-Espérance. A partir du 10 juin, dans l'océan Indien, le second maître et le mousse, malades, sont exemptés de service. Quinze jours plus tard, le matelot Wilson, l'un des quatre marins étrangers embarqués à New York, est blessé par le cabestan que le charpentier a actionné prématurément. Le cap de Bonne-Espérance est doublé le 8 août. Le 22 août, Maréchal-de-Gontaut fait relâche à Sainte-Hélène pour embarquer des vivres et demander un médecin, lequel ne peut pas venir à bord. Le 26 octobre, c'est enfin l'arrivée en rade de Dunkerque. Le voyage aura duré quatorze mois depuis New York, dont cent cinquante et un jours de mer pour la traversée de retour du Japon.

Ci-contre : les grands voiliers nitratiers en rade d'Iquique attendent "dans les rangs" leur tour de chargement. Pour ne pas éviter, ils ont mouillé leurs deux ancres de bossoir affourchées à l'avant et une ancre à jet à l'arrière. Au premier plan, deux lanches probablement chargées de salpêtre ont abordé la muraille d'un quatre-mâts.

En décembre 1904, les douze navires de la Compagnie de navigation française sont mis en vente et Maréchal-de-Gontaut passe sous le guidon des Voiliers nantais. Louis Lacroix en profite pour se reposer de son éprouvant voyage au Japon.

Les archives de l'Inscription maritime le signalent, le le' juillet 1905, sur le rôle d'équipage du trois-mâts barque BabinChevaye, comme commandant à 250 francs par mois. C'est le quatrième voyage de ce navire armé à Nantes par Bureau frères & Baillergeau. Accompagné de dix-sept membres d'équipage depuis Nantes via Saint-Malo et Southampton, Louis Lacroix a pris la relève, à Cork (Irlande), du capitaine Robert qui avait assuré les trois voyages précédents. Pour l'anecdote, à l'embarquement des vivres, Louis Lacroix fait remplacer 60 kilos de pommes de terre pourries ainsi que les cochons vivants, qu'il trouve "minuscules".

Armé par la Compagnie de navigation française (pavillon en insert), le trois-mâts barque *Maréchal-de-Gontaut* est le premier long-courrier commandé par Louis Lacroix. Il le mènera de New York à Yokohama puis à Saïgon, avant de rentrer à Dunkerque par le cap de Bonne-Espérance. Le jeune capitaine profite de son escale au Japon pour se faire photographier (ci-dessous). En 1908, deux ans après ce voyage, il commandera à Henry Mohrmann un portrait de ce bâtiment naviguant dans l'archipel nippon. Le navire au portant dans la brise, voiles hautes serrées, brigantine de cape enverguée, croise en compagnie d'un bateau de pêche local devant un volcan à la cime enneigée qui évoque le célèbre mont Fuji.

Parti le 20 juillet de Penarth, au Sud-Ouest de Cardiff, avec une cargaison de charbon pour San Francisco, Babin-Chevaye rencontre du mauvais temps dans le détroit de Drake. A partir du 20 septembre, il subit une série de coups de vent levant une mer énorme. Le trois-mâts accuse de forts coups d'acculage, ce qui fatigue le gouvernail, dont les drosses sont pourtant maintenues aussi raides que possible. Plusieurs jambettes de pavois sont tordues, la misaine ainsi que deux focs et l'artimon partent en lambeaux. Le 13 octobre, le gouvernail se brise. Louis Lacroix réunit l'équipage afin de délibérer de l'opportunité d'une relâche. Le plus jeune, le moins gradé du bord, donne son avis le premier, après exposé des faits par le capitaine, qui conclut les débats en donnant son propre avis. Au terme de cette consultation, la relâche à Taltal est décidée. Le gouvernail y est sommairement remis en état; il sera consolidé à San Francisco, touché le 13 janvier 1906 (mais la réparation définitive ne sera effectuée qu'au retour à Cardiff et les voiles perdues ne seront remplacées qu'en France; au total, ces avaries se chiffreront à 5326 francs, somme qui sera remboursée par l'assurance). Babin-Chevaye quitte San Francisco sur lest à la mi-février, pour aller prendre un chargement de blé à Sydney (Australie), où il arrive le 21 avril. Là, il embarque six matelots étrangers pour compléter l'équipage, qui avait "fondu" en cours de route, les désertions étant fréquentes à cette époque. Au retour, le trois-mâts barque rencontre à nouveau du gros temps après avoir doublé le Sud de la Nouvelle-Zélande. Le 22 mai, il doit mettre en fuite vent arrière sous voilure réduite, seuls étant établis le petit foc, la misaine, les deux huniers fixes et le grand hunier volant. Pour comble, le blé, mal arrimé dans la cale, ripe sur bâbord dans un violent coup de roulis. Heureusement, quatre jours plus tard, à la faveur d'une accalmie, l'équipage parvient à redresser le navire. Mais les ennuis ne sont pas finis... Après le passage du cap Hom, au large du Rio de la Plata, Babin-Chevaye doit remettre en fuite, misaine en charpie, pour étaler un coup de pampero. Il mouille enfin en rade de Cardiff le 30 septembre, au terme d'un voyage de quatorze mois. Le blé débarqué est remplacé par du charbon destiné au Chili, où

l'on charge du nitrate de soude à Iquique pour Ostende. Le navire accoste dans ce port le 10 décembre 1907. Opportunité rare chez les marins du long cours de cette époque, le capitaine va pouvoir aller passer les fêtes de Noël en famille. Après deux semaines de congé, Louis Lacroix est de retour à bord. Bien qu'il totalise déjà vingt-neuf mois consécutifs sur Babin-Chevaye, il repart pour un second voyage (le sixième du navire). Après une dératisation, le navire armé par un équipage réduit, est autorisé à se rendre sur lest à Port-Talbot pour passer en cale sèche. Un complément de huit hommes sera enrôlé à Nantes et à Cherbourg pour embarquer au pays de Galles.

Le trois-mâts barque appareille à ordres pour Hobart, où il est dirigé sur Iquique, qu'il atteint le 25 juin 1908. Il s'amarre dans les rangs en attendant son tour pour charger. Le chef de rade est Louis Quénet, capitaine du quatre-mâts Nord de chez Bordes. Toujours inflexible sur la discipline, Louis Lacroix lui demandera de prendre des sanctions contre trois de ses hommes — le cuisinier, le second maître et un matelot — pour absences illégales du bord et manquement de quart. Il profite de cette escale pour noter dans son journal des informations intéressantes sur les us et coutumes de la manutention sur la rade. Pour décharger leurs briquettes de charbon, opération contrôlée par les pointeurs du réceptionnaire, les navires détachent quatre hommes sur les lanches (allèges) où ils organisent l'arrimage. Par ailleurs, il faut un homme au treuil, neuf matelots et deux officiers dans la cale. Avec les matelots restants — si l'on exclut le capitaine, le second, le cuisinier, le mécanicien, le charpentier et le mousse —, on ne peut constituer une seconde équipe. D'autant que bien souvent on compte plusieurs exemptés de service pour cause de maladie ou de blessure - ils sont six dans ce cas à bord de Babin-Chevaye. Les rares hommes disponibles sont donc affectés à l'entretien du navire : piquer la rouille, gratter, peindre... Pendant l'escale d'Iquique, la chaudière du trois-mâts, qui consomme 800 kilos de charbon par jour pour alimenter les treuils, épuise les 30 tonnes réservées à cet usage; il faut utiliser des briquettes de la cargaison. Le 28 juillet, Babin-Chevaye est inspecté par Louis Quénet et M. Ficheux, capitaine du trois-mâts Marguerite-Molinos, nommés experts par l'agent du consulat de France. Le navire de Louis Lacroix est reconnu en parfait état de navigabilité. On comprend pourquoi les capitaines aimaient à se recevoir sur les rades; il était toujours bon de s'en faire des amis!

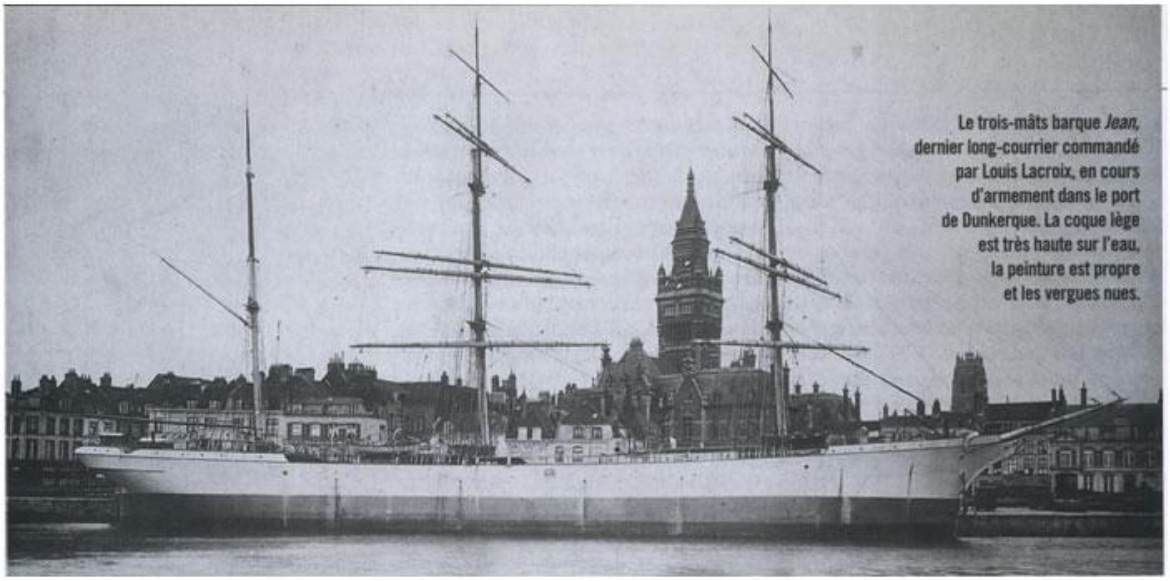
Ci-dessus : Louis Lacroix pose près du râtelier des barres d'anspect d'un long-courrier. Pour l'occasion, il s'est mis sur son trente et un, sans oublier les jumelles, le ciré et le suroît du loup de mer.

Alors que les hommes d'équipage finissent de décharger le charbon et nettoient la cale, des équipes de dockers montent à bord pour arrimer les premiers sacs de nitrate; c'est le stiffening (partie de la cargaison servant de lest), une opération de moindre importance quand les navires sont équipés de ballasts à eau de mer. Babin-Chevaye doit charger 1 293 tonnes de nitrate, conditionnées en 14 370 sacs de 90 kilos. Le 5 août, alors que 8 915 sacs sont en fond de cale, les dockers sont congédiés et le travail se poursuit à deux "mains" (équipes) par l'équipage. Seuls les arrimeurs spécialisés restent à bord, car ils savent l'art de disposer les sacs en pyramide pour assurer la stabilité du navire. Louis Lacroix précise qu'une escuadrilla de dockers chiliens travaillant au tonnage coûte de 90 à 120 livres par jour, et un ouvrier 8 à 9 livres. En sollicitant l'équipage, on fait donc une économie importante. Mais force est alors de délaisser l'entretien du navire. Or la peinture de la cale refaite à Port-Talbot n'a pas tenu. Pressé par le temps, le capitaine ne peut affecter ses hommes à cette tâche. Il prédit que les parois, saturées par l'humidité du salpêtre, seront à nu à l'arrivée en Europe.

Babin-Chevaye est de retour à Anvers le 13 décembre 1908. Le 19 février suivant, Louis Lacroix passe le commandement au capitaine Lebeaupin, qui va assurer le septième voyage du navire. Au total, il sera resté quatre ans, sept mois et dix-neuf jours d'affilée sur ce bâtiment, avec cependant de courtes échappées chez lui entre deux voyages, aux frais de l'armateur mais en payant un gardien chargé de surveiller le bord en son absence.

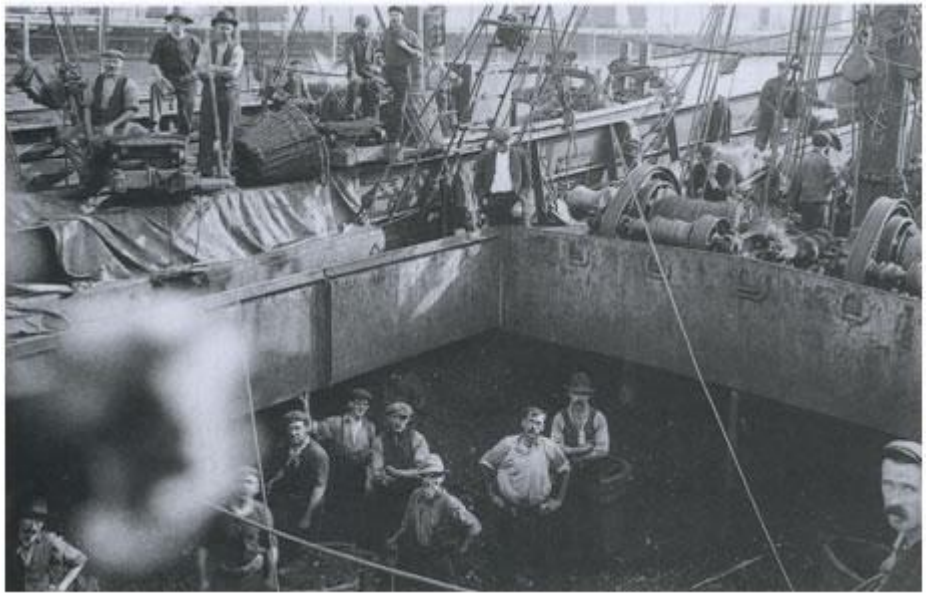
Le 21 juillet 1909, après six mois de congé, Louis Lacroix prend, à Dunkerque, le commandement du trois-mâts barque Jean, expédié pour Hobart à ordres avec 1 350 tonnes de lest en pierre et sable. Ce sera son dernier grand voyage au long cours. Est-ce dû à sa forte personnalité, à sa petite taille qu'il compense peut-être par un excès d'autorité, à la malchance, au fait que son journal de bord se fait l'écho du moindre incident quand d'autres ne révèlent que le strict minimum? Toujours est-il que ce voyage est encore fertile en événements désagréables de toute sorte.

A Dunkerque, le capitaine achète quarante-cinq cartes marines pour compléter la collection du bord. En revanche, par souci d'économie, il lui arrive de recopier à la main des Instructions nautiques qu'il trouve dans les capitaineries des ports d'escale. Le trois-mâts Jean atteint Hobart le 31 octobre, au terme d'une traversée de quatre-vingt-sept jours depuis la sortie de la Manche, ce que le capitaine ne manque pas de préciser, car il n'est pas habitué aux traversées rapides. Louis Lacroix signale aussi l'état d'usure avancé du pouliage, des manoeuvres courantes et des voiles : la toile est bonne, dit-il, mais le fil des coutures manque à chaque instant. Il faudra un mois pour revoir le gréement, ce qui nécessitera des travaux de



Le trois-mâts barque *Jean*, dernier long-courrier commandé par Louis Lacroix, en cours d'armement dans le port de Dunkerque. La coque lège est très haute sur l'eau, la peinture est propre et les vergues nues.

forge. Le mécanicien et le charpentier ont du pain sur la planche ! Cinq matelots et le second maître sont occupés à recoudre les voiles. Il faut aussi décharger le lest, gratter le pont en fer et les écoutilles du faux-pont. Il y a tant à faire que le capitaine se plaint de la réglementation du travail instituant la journée de huit heures alors qu'il ne dispose pas de l'effectif nécessaire pour la respecter.



Chargement de charbon à Wellington (Nouvelle-Zélande).

Le 6 novembre, Louis Lacroix reçoit le télégramme de destination : il doit se rendre au Chili avec du charbon à charger à Newcastle (Australie). Il mouille dans ce port le 18 novembre au matin. Avant même que le chargement du charbon ait commencé, un arrêt de travail survient dans les mines. La charte-partie prévoit l'annulation du contrat au bout de vingt et un jours de grève. Lacroix veut faire

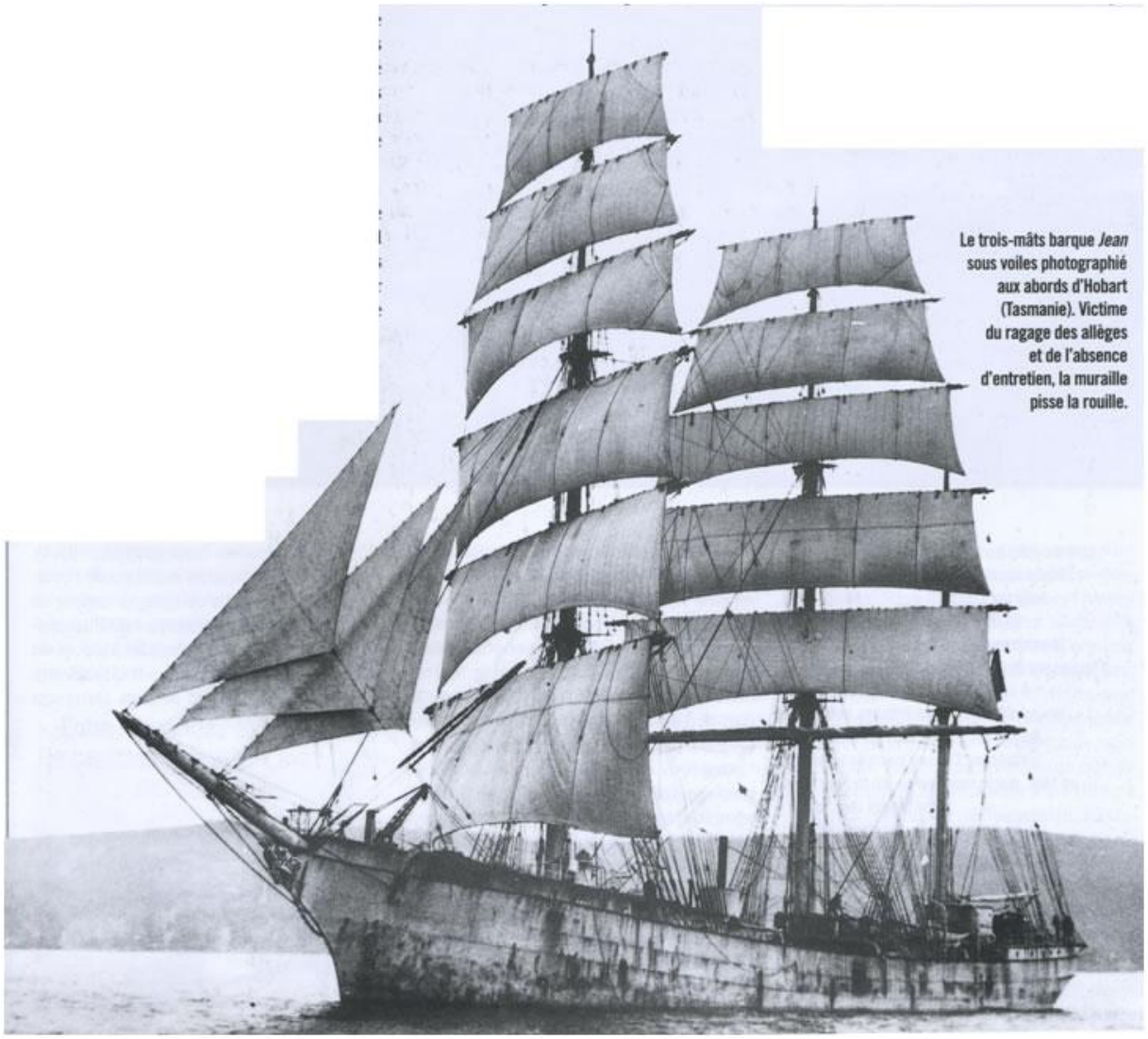
appliquer cette clause, mais le directeur de la Walsend Coal & CY ne l'entend pas de cette oreille. Selon lui, la charte-partie ne peut être dénoncée que par l'un des contractants, et à Londres où elle a été signée. Le capitaine n'est donc pas habilité à le faire. La grève continue. Télégrammes, lettres, démarches diverses pour une nouvelle demande de résiliation aboutissent à une expédition en douane de Jean, le 8 janvier 1910. Mais la Walsend Coal & CY émet alors un protêt de non acceptation, acte légal par lequel elle s'oppose au départ du navire.

N'en ayant cure, Louis Lacroix décide d'appareiller, le 14 janvier, à destination de Port Victoria, où il prévoit de charger 3 000 tonnes anglaises (la tonne équivalant à 1 016 kg) de blé. Il y parvient le 2 février suivant, mais se trouve alors à court de charbon, dans l'impossibilité de faire fonctionner ses treuils. Comme il n'y a pas de charbon sur place, des hommes sont envoyés à terre chercher du bois. Hélas ! la moisson bat son plein — c'est l'été dans l'hémisphère Sud — et tous les chevaux sont utilisés pour les charrois de blé. La plupart des fermiers contactés ne veulent pas vendre la plus petite quantité de bois. L'un d'eux accepte d'en céder mais demande un délai de livraison de huit jours et sans garantir le volume demandé. Comme le trois-mâts Jean est mouillé à 7 milles de l'estacade, il faudra recourir aux canots du port pour le transfert à bord, or le mauvais temps contrarie l'opération. Celle-ci traîne tant que le capitaine envisage un temps de faire délester la pierre et le sable à la main, mais il ne parvient pas à trouver la main-d'oeuvre nécessaire. Finalement, le 16 février, du bois venant d'Adélaïde par vapeur arrive à Port Victoria, et un navire anglais accepte de céder un peu de son charbon.

Pour assurer le chargement, le capitaine recrute à terre six stevedores (arrimeurs) et deux pointeurs. Ce personnel est à la charge de l'armement mais, écrit Louis Lacroix, "l'usage est de leur fournir seulement le café, le thé, le sucre et de faire cuire leurs aliments". Il n'y a pas de petites économies ! Le 6 mars à midi, le pointage indique une mise en cale de 34 741 sacs de blé, soit 2 895 tonnes anglaises. Il reste encore 105 tonnes à embarquer, mais les pluies abondantes ont mouillé le blé engrangé dans les fermes. Le capitaine note par ailleurs que le ragage des chalands sur le flanc du navire a décollé des plaques de rouille et que les tôles seront à nu à l'arrivée en Europe.

Louis Lacroix se plaint aussi de son équipage — dont il ne sauve que le second —, parce qu'il refuse d'appareiller avant que des marins supplémentaires n'aient été enrôlés pour porter l'effectif à vingt-trois hommes. Est-ce la goutte d'eau qui fait déborder le vase ?

C'est en tout cas lors de cette escale que le capitaine semble prendre la décision d'arrêter la navigation au long cours. Il écrit en effet à ses armateurs que son père leur communiquera sa decision pour le commandement de Jean.



Le trois-mâts barque *Jean* sous voiles photographié aux abords d'Hobart (Tasmanie). Victime du ragage des allèges et de l'absence d'entretien, la muraille pisse la rouille.

Parti de Port Victoria, le 14 mars 1910, il doit rallier Falmouth à ordres. Cette traversée de retour n'est pas de nature à le faire revenir sur sa démission. En effet, dans la nuit du 2 au 3 avril, un furieux coup de vent de Sud-Ouest l'oblige à mettre à la cape sous les deux huniers fixes. Des paquets de mer embarquent par l'arrière, le petit foc est perdu, des vitres de la claire-voie se brisent, occasionnant l'inondation de la chambre. A 4 heures du matin, le navire se couche dans une rafale de grêle et reste engagé, submergé de la dunette au gaillard. La journée du lendemain, tout l'équipage est requis dans la cale pour redresser le chargement qui a ripé, mais le trois-mâts conserve 2 à 3 degrés de gîte sur tribord.

Le 8 avril, le méridien de changement de date est franchi par 48 degrés de latitude Sud. On déplore plusieurs malades à bord, parfois jusqu'à quatre par bordée. Le 27 avril, le capitaine — qui signale par ailleurs avoir vu la comète de Halley —, note que le baromètre continue de baisser. Deux hommes attelés à la barre suffisent à peine à la maîtriser. Le petit hunier volant part en lambeaux, une lame sourde capelle le navire, qui vient brusquement dans le vent. La cape est reprise pendant huit heures. Et les avaries continuent : le grand hunier fixe est déchiré à son tour, le compas-étalon — compas très sensible, facile à compenser et servant à régler les autres — est abîmé, le petit canot défoncé, une partie de l'armement de la baleinière tribord emportée...

Les 16 et 17 mai, Louis Lacroix fait enverguer de nouvelles voiles. Le 19 au soir, droit devant à 3 milles, il reconnaît les îles Diego Ramirez à l'approche du cap Horn. Pour passer au large, il fait serrer le vent tribord amures; c'est alors que dans une brutale aulofée, il perd l'équilibre sur la passerelle, laissant échapper ses jumelles. Fichu méfier!

Le trois-mâts barque *Babin-Chevaye* sous voilure réduite dans un décor d'icebergs et d'épaves; huile sur toile de Henry Mohrmann (1909). Le 1er juillet 1905, Louis Lacroix prend le commandement de ce long-courrier armé à Nantes par Bureau frères & Baillergeau (pavillon). A son bord, il fera le tour du globe dans des conditions souvent difficiles, notamment dans le détroit de Drake qui a pu inspirer ce tableau. C'est au cours de ce périple, en 1907, que le capitaine se fait photographier sur le pont de son navire en compagnie de son chien (à droite).

Le 20 août à midi, après cent cinquante-huit jours de mer, le trois-mâts Jean mouille enfin en rade de Falmouth, où il reçoit ses ordres pour Dunkerque. Une semaine plus tard, après avoir traversé la Manche tiré par le remorqueur belge Président Ludwig, le trois-mâts parvient à destination. Pour entrer au port de Dunkerque, il doit faire appel à un second remorqueur, une exigence des pilotes. "Etant tous actionnaires dans la société de remorquage, se plaint Louis Lacroix, ils manoeuvrent de façon à en rendre l'emploi indispensable." Le rôle de désarmement fait apparaître qu'en plus de sa solde mensuelle de 230 francs, le capitaine encaisse sept pour cent sur les bénéfices nets du voyage. On comprend son souci constant d'économies à l'avantage du navire et de l'armateur.

Nul ne gardera un bon souvenir de ce voyage difficile. Plusieurs membres de l'équipage vont se plaindre du comportement de leur capitaine au commissaire de l'Inscription maritime. On jase dans les bistrots du port. La presse se fait l'écho d'une révolte qui aurait éclaté à bord de Jean. Dans son rapport à l'armateur, Louis Lacroix explique par le menu les incidents qui ont émaillé ce voyage et le conflit larvé

permanent avec son équipage, provoqué selon lui par la nouvelle législation du travail qu'il ne pouvait pas appliquer.

"Le premier dimanche, écrit-il, l'équipage, excité par le mécanicien, m'a refusé d'aller à la manoeuvre sous prétexte de repos hebdomadaire. Dans le détroit de Bass, en allant à Port Victoria, le mécanicien, d'accord avec le charpentier, a de nouveau refusé la manoeuvre pour la même raison. Une troisième fois, au retour, sous la Ligne [équateur] le mécanicien a excité les hommes à ne pas manoeuvrer, puis, sachant que je savais qu'il était le monteur du coup et craignant que je l'enferme ou mette aux fers, il s'est fait porter malade et n'a rien fait jusqu'à Falmouth. Dans ce port, comme le médecin m'affirmait qu'il pouvait faire de légers travaux et a reconnu qu'il s'était drogué, l'équipage a voulu prendre fait et cause pour lui; quelques-uns ont refusé tout service et ont alors menacé de me tuer. Pour couper court à tout cela, j'ai débarqué le mécanicien et les trois plus mauvais éléments. Les autres, restés à bord, avaient écrit à leur syndicat, dont le président est admis aux bureaux de la Marine et assiste au paiement des gens de mer."

L'Inscription maritime, que l'on appelle encore couramment "la Marine" à l'époque, veut faire payer cent soixante-dix-sept heures à chaque homme, en plus de leur salaire déjà versé, ce que Louis Lacroix conteste, arguant que les allocations supplémentaires doivent être décomptées du salaire. L'affaire sera réglée à Nantes. En attendant, tout le monde débarque, à l'exception du capitaine, son remplaçant M. Girard, n'arrivant que le 21 septembre. Louis Lacroix reste donc à bord pour surveiller le déchargement, les travaux d'entretien, les réparations et l'avitaillement en vue du voyage suivant. Il y met tant de zèle qu'on le dirait déjà dans la peau d'un capitaine d'armement, second méfie' qu'il va bientôt exercer, et ce, pendant une douzaine d'années. ■

Inséré le 02 juin 13 OPEN FORUM Enlevé le 02 juillet 13

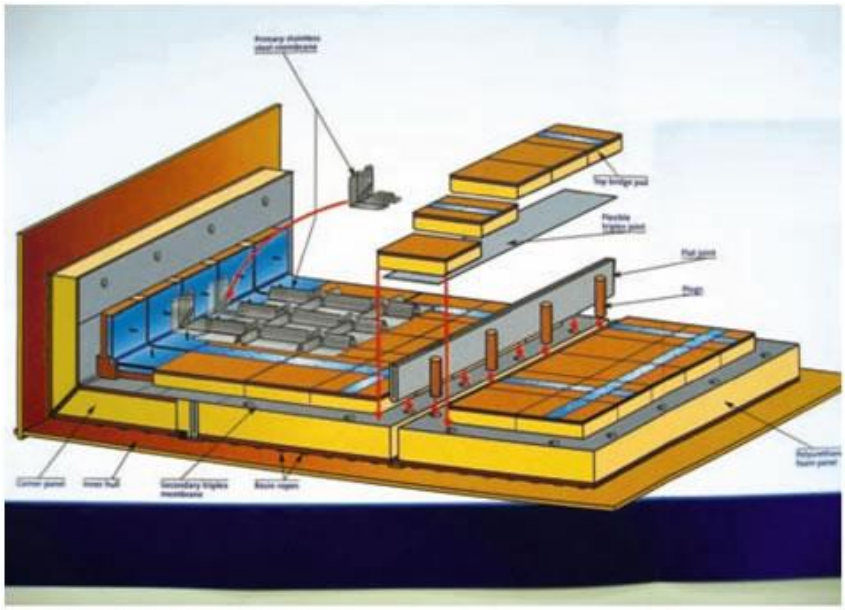
Leakages in LNG containment systems addressed

There are more than 360 LNGCs in service as of March, 2011 worldwide and about another 30 plus vessels are on order*.

It is of outmost importance to have proper leak testing performed before the vessel is commissioned and in addition, to monitor possible leakages while the vessel is in operation.

SGS has gained a lot of experience and built a strong reputation inspecting LNG cargo tanks for leakages. Starting in South Korea, services are now provided internationally working according to the highest standards and using innovative technologies.

The fleet of LNG vessels can be classified by the type of cargo containment systems fitted. These LNGCs types break down into 30% Moss type vessels, 30% GT NO. 82~96 type vessels, 27% TZ Mark I/III type vessels, while the remainder are fitted with CSI, ESSO, and IHI Type containment systems.



GTT Mark III type membrane system.

Two of the designs (GT & TZ) are of the membrane type, which were developed as an LNG storage type early on and this has proved to be the most popular type thus far. All LNG shoreside storage tanks have been built to this design and half of LNGCs currently in service are membrane type vessels.

The trend towards the use of the two different membrane systems is preferred due to the fact that prismatic membrane tanks utilise the hull shape more efficiently and thus have less void spaces between the cargo tanks and ballast tanks.

In this article, causes and risks of leaks for membrane vessel types GT (Gaz Transport) and TZ (Technigaz), as well as testing methods to detect those leaks, are discussed.

There are two different membrane type vessels - Gaz Transport (GT) and Technigaz (TZ) – named after the developing companies and they each have differences in membrane characteristics.

The main difference between the two is the material used. NO.96 Type uses INVAR (abbreviation for Invariable, an alloy of 36% nickel steel and stainless steel) and MARK III Type uses stainless steel as the material for the cargo tank.

Gaz Transport and Technigaz were merged to form GTT and now the vessel type designs available are designated as GTT NO. 96 and GTT MARK III.

GTT 96-2 type

The tank consists of a primary and secondary thin membrane made of 0.7 mm thick Invar as tank shell material, which has almost no thermal contraction. Plywood is used for a secondary barrier between vessel's hull and cargo tank, and either a Perlite box or Polyurethane foam is used for the insulation between plywood.

GTT MARK III type

The membrane consists of 1.2 mm thick stainless steel (SUS 304L) with 'waffles' to absorb the thermal contraction when the tank is cooled down. Balsa wood and Polyurethane foam are used for insulation.

Causes and risks of leakage

There are several failure patterns for LNGC cargo tanks caused mainly by the extremely low temperature (around -160 deg C). These can be classified as follows:

1. Excessive deformation.
2. Fatigue failure.
3. Corrosion fatigue.
4. Stress corrosion.
5. Brittle fracture.
6. Excess elastic deformation, elastic instability.

The damage by plastic deformation can be protected by setting a threshold stress value. Apart from a threshold stress value, the yield, load and the distribution status of the stress should be understood.

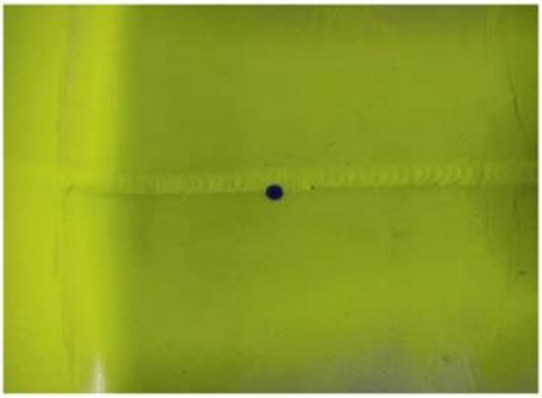
For fatigue failure, corrosion fatigue and stress corrosion, the maximum permissible stress shall be regulated because only the highest stress value is realised as a factor regardless of a form of load which generates stress.

Failure pattern by brittle fracture can be prevented by threshold stress value, but there are many limitations in terms of technicalities and practicalities.

Leakages

LNG and vapour leakage can be classified by scale. A small scale leakage is mainly generated from flanges, valves and all kinds of packing, while a large scale leakage is generated by cracks in pipelines and overflow during loading and unloading. The biggest problem of the LNG and vapour leakages is brittle fracture and a possible blaze.

Reactive paint application



Leakage detected

LNGCs are constructed using particular metals because they carry extremely low temperature LNG compared to other vessels. However, that does not mean that the entire vessel is made of these special materials. Only the parts, which are directly used for loading, unloading and transporting the gas, as well as the parts directly in contact with LNG and vapour are built with these special materials.

For those reasons, if super low temperature LNG and vapour unexpectedly leaks, there will be contact with the hull in areas, which are not constructed with special materials used to protect against super low temperatures.

In general, most metals easily crack when subject to a drastic drop of temperature to lower than 0 deg; this phenomenon is called brittle fracture. If brittle fracture occurs into the entire hull because of a massive leakage of LNG, it is obvious that it will bring catastrophic results.

LNG carriers are equipped with two different self leak detection systems that control the primary barrier and secondary barrier for leakages:

- If leakage occurs in a primary barrier (in service), loaded liquefied natural gas flows into the IBS (Inter Barrier Space). This will be noticed by a methane detector, an inflammable gas detector detecting methane, which is a main component of LNG.
- If leakage occurs in a secondary barrier (in service), the pressure in the insulation space, which is pressured to over air pressure using Nitrogen, will be gradually decrease and thus the nitrogen gas usage will be increasing to more than usual.

What does the vessel have to do when leakage occurs?

- Suspicious leakage in primary barrier - If a leakage occurs in a primary barrier (in service), unload the cargo as fast as possible, due to dangerously low temperature brittle fractures and explosions. Also have the cargo tank precisely examined by an experienced professional inspection company with many inspection techniques.
- Suspicious leakage in secondary barrier – If a leakage occurs in a secondary barrier (in service), anchor close to the nearest shipyard in consideration of the vessel's schedule and have a professional inspection company undertake leak testing based on the criteria of GTT specifications to determine the leak and leakage rates using dedicated test methods, such as hearing test, secondary barrier tightness test and acoustic emission leak testing.

There are two stages at which SGS can inspect for leakages:

1) In construction - When an LNGC carrier is built, a classified test for a primary barrier is performed in accordance to the GTT specification. Various kinds of leak testing methods will be used for the inspection. Identified leaking parts shall be repaired and these shall be finally controlled by performing additional local tests.

2) For a secondary barrier, pressure change measurement testing will be performed and it is considered to be accredited when the result meet GTT parting standards. When there is a suspicious leakage in a primary barrier, the way to identify the exact location is to empty the cargo tank first, and then inspect it using NH3 or Helium tracer gas for the lower part of the barrier. For the upper part of a primary barrier, an additional stage shall be installed for the test.

Alternatively, when there is a suspicious leakage in a secondary barrier, the cargo tank should be emptied and then a hearing test should be performed to find the gross leakage parts. The exact leakage location will be more precisely detected by using an acoustic emission leak testing method.

Conclusion

Leakage of the extremely cold LNG can do significant damage to the vessel thus causing not only a dangerous situation for people and the environment but also resulting in some commercial loss.Therefore, it is of outmost importance to have proper leak testing performed for the vessel prior to operation, as well as use professional inspection concerns to determine suspicious leakage during service.

Based on the reputation that SGS gained in the South Korean LNG business by working for major shipyards, the company now performs leak testing internationally and has set up multiple bases worldwide to reduce docking time. TO

*This article was written by SGS.

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De oorzaken van het zinken van de Charlesville op 30 mei 2013

WATERERFGOED VLAANDEREN
een zee van tradities

PERSMEDEDELING

31 mei 2013

Wordt Charlesville-wrak een museumattractie van wereldformaat ?

De oorzaken van het zinken van de Charlesville op 30 mei 2013

Tijdens het transport van het Duitse Rostock naar het Litouwse Klaipeda is de laatste Kongoboot Charlesville (laatstelijk Georg Büchner genaamd) **gezonken in de Poolse territoriale wateren**. We volgden de gebeurtenissen gisteravond met ongeloof op vanop een Europees havencongres in Bulgarije. We geven hier exclusief het **bericht van Lloyd's** dat we deze ochtend ontvingen uit maritieme kringen:

> **Urgent Transmission from Lloyd's MIU Casualty Reporting Service**
> GEORG BUCHNER (Germany) AJAKS (Poland)
> Kiel, May 31 -- Tug *Ajaks* (335 gt, built 1974) was towing decommissioned general cargo *Georg Buchner* (11060 gt, built 1951) to breakers at Klaipeda with a towing speed of 4.5 knots when it suddenly changed course to a southerly direction with a speed of 9.9 knots on May 30 and began "moving in circles." While the course towards Klaipeda was about 70 deg, the new course was 130 deg. The tug did not send an AIS signal. At 0150, May 31, the *Ajaks* entered the port of Gdynia. The *Georg Buchner* had sunk off Rozewie, off the Polish coast, in position lat 54 55.8N, long 18 31.3E, around 1800 hrs. There is speculation that the ageing hull of the *Georg Buchner* may not have been able to withstand the forces of the sea any longer.

De **oorzaken** van het vergaan van de Charlesville zijn momenteel onbekend. Een mogelijke oorzaak is de aanwezigheid van **niet-originele patrijspoorten dicht bij de waterlijn**. Deze patrijspoorten werden in Duitsland in de romp aangebracht om lichtinval te creëren in de ruimten die werden gebruikt voor opleidingen aan boord van het stationaire schip. Mogelijk is via deze patrijspoorten zeewater binnen gedrongen, waardoor het schip slagzij is beginnen maken en is gekapseisd en gezonken.

Tijdens onze missie met een tienkoppig team naar Duitsland op 19, 20 en 21 april 2013 bespraken we de staat van het schip met de firma Baltic Taucher uit Rostock. Deze firma had in januari werken aan het schip uitgevoerd, met het oog op de toen reeds geplande afvaart naar Klaipeda, die door onze interventie bij de Duitse overheden werd tegengehouden op basis van de bescherming van het schip als monument. Tijdens een vergadering op 20 april **verzekerde Baltic Taucher ons dat het schip volledig sleepklaar was**. Deze firma had de laagste rij van de onderste patrijspoorten dichtgemaakt met ijzeren platen. Zij bood ons haar diensten aan met het oog op de dan geplande verplaatsing naar België. Baltic Taucher vermeldde alleen enkele kleine nog af te werken punten, zoals het neerleggen en vastzetten van één laadboom, het weghalen van de gangway en het wegnemen van de meerbeugels aan bakboord. Wij zullen het rapport van de in januari uitgevoerde

werken en de officiële Duitse documenten betreffende de veiligheidstoestand nader onderzoeken. De door ons aangezochte Belgische expert inzake het verslepen van schepen, die het schip inspecteerde op 20 april, merkte dadelijk op dat het schip naar zijn mening **nog helemaal niet sleepklaar was**, inz. ingevolge de toestand van de patrijspoorten.

De niet-originele patrijspoorten aan stuurboord, waarvan alleen de onderste rij provisoir werd dichtgemaakt.

Vergadering aan boord met Baltic Taucher op 20 april 2013. Deze firma verzekerde dat het schip zeewaardig was. Onze expert hechtte hier geen enkel geloof aan.

Een boel nieuwe vragen

Deze zoveelste onverwachte wending roept weer een boel nieuwe vragen op:

- **Wat zijn de precieze oorzaken van het ongeval ?** Wij hebben de Poolse autoriteiten gevraagd dit grondig te onderzoeken en ons op de hoogte te stellen van hun bevindingen.

- **Was kwaad opzet in het spel ?** In het licht van de dubieuze ontwikkelingen van de jongste maanden opperen talrijke waarnemers dat het schip gescuttled werd - d.i. opzettelijk tot zinken gebracht - om verzekeringspenningen op te strijken. Wij kunnen dit momenteel uiteraard niet verifiëren.

- **Hoe grondig hebben de Duitse overheden, waaronder de havenkapitein van Rostock, de veiligheid van het sleepkonvooi onderzocht ?** De havenkapitein heeft zich gedurende maanden voorgedaan als woordvoerder van de jeugdherberg en gooide op 28 mei 2013 hoogstpersoonlijk en met triomfantelijke grijns de trossen los (zie de film op http://www.youtube.com/watch?v=0tse8w41fcc&feature=em-uploademail).

- **Hebben de verkopende curator, de koper Agent Ventures Limited uit de Seychellen, de Stad Rostock en het Land Mecklenburg-Vorpommern de vereiste zorgvuldigheid aan de dag gelegd om te verzekeren dat het schip veilig zijn tocht kon doorstaan ?** Anders dan foutief in de meeste media werd bericht, was het schip **niet van de Duitse monumentenlijst gehaald**, maar was alleen een toelating tot verplaatsing afgegeven, zodat alle betrokken partijen verantwoordelijk bleven voor het bewaren van het schip, inbegrepen een veilig transport uit Rostock en over zee.

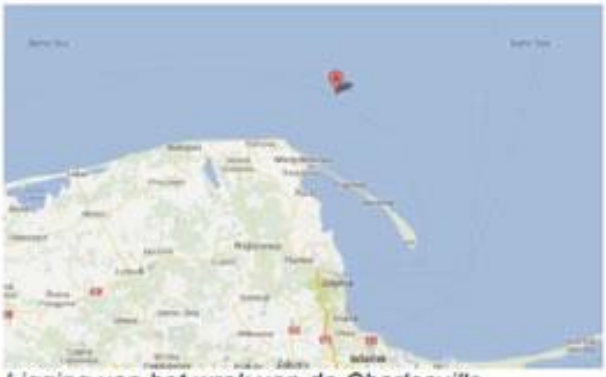
- **Heeft het vergaan van de Charlesville te maken met de dubieuze omgang met de regelgeving inzake export en import van afval ?** Bemerk dat het bericht van Lloyd's bevestigt dat het schip op weg was naar een verschrotingswerf in Klaipeda.

Het gebeurde is des te hallucinanter nu wij de bevestiging hadden dat het schip, eens afgemeerd in Klaipeda, terug te koop zou worden aangeboden. Nadat het Duitse aanbod om het schip over te nemen voor 1 EUR onwaarachtig was gebleken, hadden wij alles in het werk gesteld om via een nieuwe constructie een koopbod uit te brengen om het schip naar België terug te brengen. Ook die poging is nu gedwarsboomd.

Heeft de Charlesville een toekomst als museumattractie van wereldniveau ?

Wat is het verder lot van de Charlesville ? Volgens ons eerste onderzoek ligt het schip in de Poolse territoriale wateren, op ca. 8,9 zeemijl uit de kust en op een diepte van rond de 35 m. De Poolse overheid heeft allicht de bevoegdheid om de eigenaar te verplichten om **het schip te bergen op eigen kosten en risico's**. Wij hebben de Poolse overheid erop gewezen dat het schip in Duitsland nog steeds een beschermd monument was en onderzoeken welke verplichtingen Duitsland en Polen hebben om het wrak te beschermen en het bij een eventuele bergingsoperatie niet te beschadigen.

Wij onderzoeken ook de mogelijkheid om het schip te bergen en naar België te brengen. Wij spraken reeds met bergingsexperten die bevestigden dat het in principe technisch mogelijk is het gehele schip boven water te halen. Uiteraard zal dit een aanzienlijke kostprijs van vermoedelijk enkele miljoenen EUR met zich brengen, en zal eerst de eigendomssituatie moeten worden uitgeklaard. Allicht heeft het schip, vooral het interieur, onherstelbare schade ondergaan, waardoor de initieel beoogde commerciële exploitatie naar alle waarschijnlijkheid onmogelijk is.



Ligging van het wrak van de Charlesville

Het Vasa-museum in Stockholm, één van de meest succesrijke maritiem-toeristische attracties ter wereld - verdient ook de Charlesville dit niet ?

Het onwaarschijnlijke avontuur van de Charlesville maakt echter een **onweerstaanbare museale exploitatie** mogelijk, met een intensiteit en dramatiek vergelijkbaar met die van het **Vasa-museum te Stockholm, één van de grootste en meest succesrijke maritiem-toeristische attracties van de hele wereld**.

We onderzoeken ook of alle ontstane **kosten kunnen worden gerecupereerd van de Stad Rostock en het Land Mecklenburg-Vorpommern**, die eerst ons behoudsproject kelderden, en dientengevolge nu ook het schip zelf.

Watererfgoed Vlaanderen *verenigt en verdedigt al het nat en droog watererfgoed in Vlaanderen (meer dan 100 organisaties actief rond historische schepen, scheepvaart- en havenmusea, watermonumenten, watertradities, -kunst en -cultuur, toeristische en commerciële dienstverleners i.v.m. watererfgoed, experten, onderzoekers en liefhebbers). De koepel ijvert voor het behoud en de valorisatie van alle watererfgoed in Vlaanderen, voor de versterking van het waterbewustzijn van de Vlaming en voor de internationale uitstraling van Vlaanderen als baken van scheepvaart- en havencultuur.*

vzw Watererfgoed Vlaanderen, Emiel Banningstraat 25, 2000 Antwerpen, www.watererfgoed.be, secr@watererfgoed.be, +32 3 216 92 26 - Voorzitter Eric Van Hooydonk: +32 475 870 780

Inséré le 03 juin 13 News Nouvelles Enlevé le 03 juillet 13

Charlesville - Watererfgoed werkt samen met Poolse regering

WATERERFGOED VLAANDEREN
een zee van tradities

PERSMEDEDELING

2 juni 2013

Beveiligd Charlesville-wrak kan naar Antwerps Wereldwrakkenmuseum

Watererfgoed werkt samen met Poolse regering

Na het zinken van de laatste Kongoboot Charlesville op donderdagavond 30 mei zette Watererfgoed Vlaanderen onmiddellijk zijn internationale maritieme netwerk in gang. Wij spraken gisteren persoonlijk met de Poolse Vice-Minister van Transport, de Directeur van de Poolse Maritieme Administratie, de Directie van de Haven van Gdansk, deze van één van de belangrijkste private havenbedrijven aldaar, en de Belgische ereconsul in Gdynia.

We boden **volledige samenwerking** aan bij het **onderzoek van de oorzaken van het zinken van het iconische schip**. We beschikken immers over belangrijke informatie over de voorbereiding van de afvaart uit Rostock, die wijst op een **volslagen onzeewaardige toestand** van het in Duitsland nog steeds als monument beschermde schip bij vertrek. De Poolse overheid heeft ons aanbod met dankbaarheid aanvaard.

We verzochten de Poolse autoriteiten om **maatregelen** te treffen **om het wrak te beschermen tegen beschadiging en plundering**, in afwachting van een onderzoek naar de haalbaarheid van een berging van het schip of onderdelen ervan. De Poolse autoriteiten zegden toe dadelijk een duikverbod te zullen instellen en samen met ons de bergingsmogelijkheden te zullen onderzoeken.

Bij wegruiming van het wrak moet erfgoedwaarde geëerbiedigd worden

Wij onderzochten inmiddels het Poolse zeerecht. In principe moet de eigenaar het wrak zelf wegruimen. Nu het schip een gevaar voor de scheepvaart vormt, **mag de Poolse overheid zelf tot berging overgaan**, waarna de eigenaar wordt verwittigd wanneer hij het opgehaalde wrak mag ophalen. De eigenaar moet wel alle kosten van de berging betalen. Als het wrak niet wordt opgehaald of de kosten niet worden terugbetaald, mag de Poolse overheid het wrak of de wrakstukken verkopen. Het **VN Zeerechtverdrag** verplicht alle Staten om historische voorwerpen in zee te beschermen en om te dien einde samen te werken (art. 303). We hebben er de Poolse overheid op gewezen dat het schip bij vertrek in Duitsland nog steeds beschermd was als monument en dat Minister Bourgeois verklaarde dat het schip, eens het in ons land is teruggekeerd, een Vlaamse bescherming zal krijgen. Daar België en Polen beide door het VN Zeerechtverdrag zijn gebonden, **moeten de bevoegde regeringen samenwerken om een behoud van het wrak mogelijk te maken.**

Gesprekken met internationale bergingsfirma's

Watererfgoed Vlaanderen voert drukke besprekingen met **de meest gerenommeerde bergingsfirma's**. We bezorgden een technisch dossier om een prijsraming te maken. Experten bevestigden dat het mogelijk is het schip in zijn

geheel te lichten. Uiteraard zal dit aanzienlijke bedragen vergen. Ook de mogelijkheid van een berging van delen of onderdelen wordt onderzocht.

Nieuw Wereldwrakkenmuseum wordt economische en toeristische voltreffer

Never waste a good crisis ! Na het zinken van de Charlesville is het schip uit de klauwen van de onbetrouwbare Duitse overheden en is het verhaal van onze laatste Kongoboot nog pregnanter geworden. Wij stellen voor de Charlesville of minstens delen ervan te integreren in een **gloednieuw Wereldwrakkenmuseum** in Antwerpen, samen met de wrakken van de Doelse Kogge en Belgica.

De Kogge van Doel is het belangrijkste wrak van een middeleeuws Europees vrachtschip.

De Belgica is het wrak van het schip dat de eerste wetenschappelijke Zuidpoolexpeditie uitvoerde en dat als eerste op Antarctica overwinterde.

De Charlesville is het enige wrak van een vracht- en passagiersschip dat Europa verbond met een Afrikaanse kolonie.

Antwerpen heeft het grootste zeehavengebied van de wereld en heeft een eeuwenlange traditie als een havenstad.

Het Wereldwrakkenmuseum geeft ons land een **maritieme attractie van wereldformaat**, van het kaliber van het Vasa Museum in Stockholm en in 2012 geopende Titanic Belfast. Het Vasa Museum trekt jaarlijks 1,2 miljoen bezoekers, is op zich ruim winstgevend en genereert daarbovenop jaarlijks 200 miljoen EUR voor de Stockholmse economie. De volledige argumentatie voor het Wereldwrakkenmuseum vind je op http://www.watererfgoed.be/wwm_Wereldwrakkenmuseum.aspx.

Wij hebben de Poolse, Belgische, Vlaamse en Antwerpse overheden op de hoogte gesteld en verzocht om een zakelijke bespreking vooraleer publiek standpunten worden ingenomen.

Wij hebben ook het department onderwaterarcheologie van het schitterende Maritieme Museum in Gdansk om bijstand verzocht.

Zie ook ons persbericht van vorige vrijdag op http://www.watererfgoed.be/Docs/Watererfgoed%20Charlesville%20perstekst%2031%205%2013.pdf.

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“Harbour Light”. ‘

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

Harbour Light’, zo heet de nieuwe publicatie die geïnteresseerden wegwijs maakt in niet minder dan zesenveertig Europese haven- en transportgebonden dossiers. De Vlaamse Havencommissie (VHC) heeft samen met de Europese zeehavenvereniging ESPO en de Nederlandse Nationale Havenraad een Engelstalige versie klaar van zijn ‘Wegwijzer in Europese haven- en vervoerdossiers’. VHC-voorzitter Francis Rome stelde de nieuwe publicatie in Brussel voor bij de presentatie van de jongste winnaar van de ESPO Award voor maatschappelijke integratie van havens. Over elk van 46 dossiers die in ‘Harbour Light – Port and transport related EU policy and regulations – The professionals’ guide’ aan bod komen, wordt de stand van zaken gegeven en krijgt de lezer ook een lijstje met de belangrijkste beleidsdocumenten. De publicatie bestaat zowel op papier als op het net. Zolang de voorraad strekt is de papieren versie gratis beschikbaar bij de Vlaams Havencommissie (aanvragen via hieronder vermelde website). De digitale versie staat op de website van de VHC op het adres www .flemishportcommission.be/harbourlight en bevat ook rechtstreekse links naar alle richtlijnen, communicaties, ontwerpteksten... die betrekking hebben op het behandelde onderwerp. “Duizenden pagina’s van Europese instellingen zijn beschikbaar op het internet, maar het is niet altijd eenvoudig om een overzicht te krijgen van wat op Europees niveau gebeurt, of de exacte status van een bepaald dossier te vinden. ‘**Harbour Lights’** is precies ontworpen voor wie geen tijd heeft om door al die internetpagina’s te gaan. Of voor wie door de bomen het bos niet meer ziet,’ zo lichtte Francis Rome toe. De elektronische versie van ‘Harbour Light’ zal regelmatig geüpdated worden.

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As Greece Struggles with Debt Crisis, Its Shipping Tycoons Still Cut a Profit

On December 5 last year, the **Ob River**, an 288-metre LNG (Liquefied Natural Gas) tanker with a capacity of 84,682 deadweight tonnes chartered by Russian energy giant Gazprom, arrived at the Japanese port of Tobata. The ship belonged to Dynagas, a privately held company owned by George Prokopiou, one of Greece’s preeminent shipping magnates.

It was a delivery of historic significance. To make it, the Ob River had traveled through more than 3,000 miles of the bleak, icy expanse of the Northern Sea Route, accompanied by two nuclear-powered Russian icebreakers. It was the first ever sea voyage of an LNG cargo through the frozen waters north of Siberia, cutting the distance traveled from Norway to Japan by more than 5,000 miles compared to the Suez Canal route.

Sitting in his office overlooking the Saronic Gulf in the southern suburbs of Athens, a large map of the globe lined with sea routes on the wall beside him, the forbidding Prokopiou remembers how he got into the LNG game. “The idea of transporting liquefied natural gas was droning around in my brain since 2003. I could see that this would be the century of gas. There are plentiful supplies, it is half the price of oil and it is also a quick fix for pollution and CO2 emissions. This is particularly important for

the cities of China and India as they expand, to keep pollution under control," he tells TIME in a deep, gravelly voice.

Foreseeing the possibilities created by the accelerated melting of Arctic ice, in 2004, Prokopiou ordered two LNG tankers to be built according to ice-class specifications. The vessels had to be fitted with reinforced hulls capable of withstanding the Arctic ice and with equipment able to function in temperatures as low as -35 degrees Celsius. Because of the proximity to the North Pole, conventional navigation systems did not work properly, so they had to be replaced by custom-made, Pole-compatible ones. Crew training took a year-and-a-half, and included a spell at Russia's Makarov Academy, based in St. Petersburg, where crew-members were taught the secrets of navigating through a frozen desert.

The epic journey of the **Ob River** is a testament to the farsightedness and the global reach of Greek shipping. Greece, a small country of 11 million, is the world's foremost shipping superpower, and has been almost without interruption for the last four decades. According to the latest figures from the Union of Greek Shipowners, the Greek-owned ocean-going fleet consists of 3,428 ships, totaling 245 million deadweight tonnes in capacity. This equals 15.6 percent of the carrying capacity of the entire global fleet, including 23.6 percent of the world tanker fleet and 17.2 percent of dry bulk.

Greece's shipping companies defy almost every stereotype that Greeks have been associated with these past years. They are ultra-competitive in a truly globalized market; their family-based structures are an indispensable source of strength rather than weakness; and they are unabashed proponents of the free market when it comes to the transcontinental sea trade, even while in Greece itself, most industries still struggle under the weight of over-regulation and barriers to competition. In a reversal of the narrative that has dominated headlines, in shipping – in particular the container sector – it is well-positioned Greeks who are "bailing out" mismanaged German shipping funds, which over-extended themselves before the global shipping crisis hit in 2008 and are now selling off their ships for a pittance.

Greek shipping was also a key enabler and a major beneficiary of the rise of China during the previous decade. It is estimated that in 2007, at the peak of the China boom, 60% of the Asian giant's raw material needs were supplied by

Greek-owned ships. As another major shipowner, Thanasis Martinos of Eastern Mediterranean Maritime, explains, Greeks benefited because "we are the taxi drivers of world shipping. We are mostly free of long-term contracts – unlike, say, the Japanese – and we can go wherever the highest profit opportunities take us." This week, top names in shipping, including Prokopiou, are accompanying Greek Prime Minister Antonis Samaras to Beijing on a much-publicized trip aimed at strengthening commercial ties between the two countries.

At home, however, there are ominous signs on the horizon for Greece's shipping elite. The preferential tax treatment they have enjoyed for decades is under threat, questioned – at times aggressively – by the country's left-wing official opposition, SYRIZA, as well as the EU's Directorate-General for Competition. As Greek politicians seek to divert attention away from their own failings and to quench the thirst of the public for the wealthy to pay their fair share, the Swiss bank accounts of shipowners have been leaked to the media and a number of them have been investigated by the tax authorities. None has been charged with any wrongdoing, and all other major shipping countries offer similarly "efficient" tax regimes to their shipping companies (though not necessarily to their shareholders). These facts have not dampened the emerging account, both at home and abroad, of Greece's shipping community as an island of provocative privilege heedless of the sea of debt and deprivation surrounding it.

This new climate has already led to some changes: earlier this year, the shipping-friendly Nea Democratia-led government increased the tax rates paid by shipping companies based in the port of Piraeus, near Athens, on vessels listed on foreign shipping registers. It also imposed extraordinary levies of 6-10 percent, for the period between 2012-5, on the foreign exchange imported by all Piraeus-based shipping-related companies.

The decision of the Union of Greek Shipowners not to oppose this move is perhaps related to their concerns about the likely successors of the current government. The political rise of SYRIZA the previous spring sent an unseasonable chill through the offices of Greek shipping's elite. In June, when fears of a SYRIZA election victory were at their peak, unnamed shipowners issued dire warnings in the press about preparations to move their offices abroad.

Since then, however, both sides have sought a more conciliatory tone. In a meeting with the Union of Greek Shipowners this past December, SYRIZA leader Alexis Tsipras voiced his support for the "continued leading role of Greek shipping" in the international market. George Stathakis, a moderate SYRIZA MP who was present at the meeting, explains to TIME that his party does not plan to repeal the exemptions on non-distributed profits or on the capital gains of Greek-based shipping companies. The only significant change proposed, he says, is that shipping dividends will no longer be exempt from personal income taxation.

Martinos, for his part, is sanguine about the future relations between government and the shipping community. "The perception in public opinion and in the political class – including SYRIZA – is that shipping benefits Greece. In coffee houses even in the smallest villages, people know this, and would not want to risk losing those benefits," he says. In the trying years to come for Greece, this proposition will be sorely tested. **Source : Yahoo News**

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Shipping's stance on armed guards

The International Chamber of Shipping (ICS) - whose executive committee comprising representatives of national shipowners' associations from over 30 countries met in London recently - has decided to clarify its stance on the use of private armed security guards.

ICS said that there is a ' vital need' for the military to disable the hijacked 'motherships', which the pirates are now using to launch attacks throughout much of the Indian Ocean.

Chairman, Spyros Polemis, explained: "ICS has had to acknowledge that the decision to engage armed guards, whether military or private, is a decision to be made by the ship operator after due consideration of all of the risks, and subject to the approval of the vessel's flag state and insurers. The consensus view amongst shipping industry associations remains that, in normal circumstances, private armed guards are not recommended and are a clear second best to military personnel.

"However, in view of the current crisis in the Indian Ocean - with over 700 seafarers held hostage and, most recently, a seafarer being executed – ship operators must be able to retain all possible options available to deter attacks and defend their crews against piracy. Many shipping companies have concluded that arming ships is a necessary alternative to avoiding the Indian Ocean completely, which would have a hugely damaging impact on the movement of world trade.

"The eradication of piracy is the responsibility of governments. Frustratingly, politicians in those nations with the largest military navies in the region show little willingness to increase resources to the extent that would be necessary to have a decisive impact on the problem of piracy. Western governments, at least, appear to give the impression that this otherwise unacceptable situation can somehow be tolerated. Sadly, until we can persuade governments otherwise, the use of armed guards by ships is very likely to continue increasing," he concluded.

ICS advises that the shipping industry will meanwhile be looking at all possible options, including alternative routes, which could have a very dramatic effect on transport costs and delivery times. If increasing numbers of ships decide to divert around the Cape of Good Hope, this will almost certainly have a major impact on inventories and costs throughout the whole supply chain and, most particularly, on the cost of oil. It could also greatly damage the economies of Africa and the Middle East at this very politically delicate time.

Commenting on the situation, leading parcel tanker owner Stolt Nielsen (SNSL) said that the company will first and foremost do what it takes to protect its crews and, in so doing, the ships and their cargoes.

SNL said that it supports outside government intervention to stabilise Somalia, as shipping industry organisations have been urging for some time. Anarchy on land enables anarchy at sea.

It is unrealistic to expect an end to piracy without establishing some form of government order in Somalia. Furthermore, the company fully supports industry calls on governments for more - and broader - naval protection. The piracy situation is not improving, it is escalating. Governments collectively need to step up to the challenge by taking action now and not wait and hope that the problem will disappear, the company said in a statement.

In view of the current crisis in the Indian Ocean, ship operators must be able to retain all possible options available to deter attacks and defend their crews against piracy. When the company has no alternative it will continue the use of armed guards, which has proved to be effective as a deterrent.

SNL stressed that the risk assessment and mitigation measures deployed have been shared fully with flags, insurers and major customers - and that the company is in full compliance with all of their requirements.

Speaking at the UK annual Chamber of Shipping dinner in February, outgoing chairman Shell's Jan Kopernicki said; "The sudden deterioration over the last two months in the security of shipping off Somalia and throughout the Indian Ocean is a cause of major concern – for its spread and for the increasing levels of violence threatening our seafarers despite very good support from governments and military alike.

"This is a time when political, military and industry responses must now be increased, as we work together to implement urgent solutions before the situation develops yet further out of hand. We

welcome the profile given to piracy by its designation as the theme for this year's IMO World Maritime Day.

"This is no longer just a local Somali problem. This is an industrialised activity, with mother ships marauding right up to the Indian coast. I won't venture into a discussion about whether to arm merchant ships, but I will say that the current mother ship menace, the execution of seafarers and the increased aggression of attacks will only be subdued by focussed military action in the next two to three months.

"This in turn means that politicians need to give their military, whether in the UK or elsewhere, the freedom to take more explicit measures. The unofficial arming of merchant ships has not prevented the development of the current situation, nor will it, or a legalised version of it, provide the solution.

"This is a military problem and now needs enhanced military responses. And the industry fully understands the risks and difficulties involved, so I don't make these observations lightly, " he concluded.

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Piracy protection: A reality check

By Helen Jauregui

While a drop in the number of Somali piracy attacks during the first half of 2012 may have raised the spirits of ship owners somewhat, risk consultancy experts have brought the industry back to reality, claiming this reduction is due to successful counter-piracy measures, including the use of armed guards, and should not be cause for any premature celebrations.

According to The International Maritime Bureau (IMB), 177 global incidents of piracy were reported in the first six months of 2012, compared to 266 during the same period in 2011, representing a 33% reduction. However, the IMB's figures for West Africa suggest a dramatic rise in piracy attacks off local shores.

Tom Patterson, Manager of Maritime Information Services at Control Risks, a global business risk consultancy, said: "The latest figures published by the IMB come as no surprise. Somali piracy has had a disproportionate effect on global figures for several years and the reduction does not reflect a genuine improvement globally but rather a downturn in one area of the world."

As the piracy problem shows no genuine signs of abatement, ship owners must dig deep to fund anti-piracy protection measures, in addition to their usual financial commitments towards regulatory compliance, particularly where the environment is concerned — but to what extent are financial stresses being suffered when attempting to counter the loss of crew and earnings which can result from a piracy attack?

According to Eric Conway, Managing Director, Protection Vessels International (PVI), when selecting vessels, understanding how a shipping company approaches piracy is playing an increasingly pivotal role in which ship a charterer will choose: "The facts presented to companies suggest that utilising Privately Contracted Armed Security Personnel (PCASP) is good for business when all the opportunity costs are weighed-up against 'business as usual'.

"Perhaps the most readily publicised benefit is the savings achieved through improved premiums provided to shipowners with PCASP when taking up Kidnap and Ransom (K&R) insurance. Many owners and operators might conclude that taking up K&R insurance is superfluous, and that their Hull and Maintenance (H&M) or War Risk (WR) insurance will sufficiently cover the owner/operator for payment of ransom if their vessel is hijacked.

"However, if piracy is covered within the H&M policy, this will in all probability only cover hull damage as the result of piracy and not the payment of ransom. WR underwriters, for their part, may say privately that they cover ransom payments, but this is at best likely to be discretionary; not something that one would accept when insuring their house or car, for example." He added that WR policies are unlikely to cover expenses such as negotiator fees, crew earnings, underwriter advisors expenses, bunker fuel used during the period of capture, and legal liability costs.

Although details such as vessel speed and protection (such as razor wire) might influence final insurance premiums, Mr Conway said armed guards have proven to deter even the most determined pirates and the provision of PCASP will determine notable cost savings: "A director for London-based maritime insurance broker Seacurus recently cited the significant savings now being offered on K&R insurance to vessel's carrying PCASP. If a vessel carries four armed guards, then K&R insurance rates fall from about $15,000 to $4,500 for a tanker in single transit, or from $28,000 to $11,200 for a Very Large Crude Carrier (VLCC). However the cost savings gained from utilising PCASP should not be taken in isolation, but as part of a holistic appraisal."

In the Economic Cost of Somalian Piracy, published in 2011 by One Earth Future and compiled by maritime industry experts, it was confirmed that no vessel sailing at over 18 knots had been hijacked but that the extra cost of increased speeds for containerships alone is around $2.7 billion. Mr Conway confirmed that although the economic argument for ultra-slow steaming makes sense on many levels, PVI would advise vessel owners and charterers that vessels should move at a faster rate than eight knots. "All of our operatives are experienced former Royal Marines with maritime experience. We understand there are commercial imperatives that can override security concerns,

which is why we recommend that not only is the cost of hiring a PCASP factored into insurance and fuel cost calculations when navigating high risk areas, but also the standard of PCASP recruited," he added.

When scrutinising the costs of hiring PCASP, the economic impact of piracy on shipping can perhaps most keenly be seen when considering vessels that avoid waters off Somalia by sailing around the Cape of Good Hope. According to the Economic Cost of Somalian Piracy, 10% of vessels that would typically transit through the Gulf of Aden and Suez Canal, reroute to avoid piracy around the Cape of Good Hope, adding an extra 10-20 days to the average voyage time, depending on the route and vessel type. Using this report as a guide, PVI has assessed that for a VLCC, when taking into account extra fuel burning and extra rates which must be paid for a 10-day reroute, this could amount to in excess of $1.2 million in extra costs for the charterer, prior to any additional costs for crewing, insurance etcetera.

Though the economic argument for employing armed guards onboard is compelling, some corners of industry continue to argue that the presence of PCASPs onboard can be counterproductive in exacerbating violence. Tom Brind, Operations Manager, Solace Global Maritime, said this is unlikely, particularly considering that professional guards will always fire a series of warning shots which, for his company's own guards, has always succeeded in diffusing the situation with the pirates retreating. "No vessel with an armed security team onboard has ever been taken by pirates and that speaks volumes in terms of statistics," Mr Brind said.

He added that although ripples of excitement have been felt across industry following the EU Naval Force (EU NAVFOR) strikes on a Somali pirate logistical base, he does not believe this represents a sea change in solving the piracy problem: "Many optimists would think that as operations on land are happening, this could be the end of piracy, but I'm not sure I can agree. I think we are containing piracy in the high risk areas of the Indian Ocean but I don't believe the situation will get dramatically worse or better within the next 12 months, though I do think we will see a marked change in this period regarding how shipping operations are conducted off the coast of West Africa."

A difference in objectives between piracy operations on the east and west coasts has led to wildly different tactics and according to Mr Brind, west coast pirates show a more obvious lack of respect for human life. "On the west coast, violence is much more part of their ammo. Unfortunately, west coast piracy adheres to a different business model — on the east coast it is important to them that the vessel and the crew which they are holding to ransom are returned relatively unscathed. On the west coast, they are more interested in stealing the cargo, which is generally fuel, and what happens to the vessel and the crew is of little consequence to them. Pirates on the west coast tend to use violence as a tool to get what they want, which is the cargo, but if people are injured or the vessel is damaged, that doesn't matter to them."

Mr Patterson from Control Risks agreed: "Piracy in West Africa has not attracted the same level of international attention as East Africa in recent years, primarily due to under-reporting and the fact that the crime takes many different forms in that area, not purely hijacking for ransom, but the problem is no less critical. Attacks are violent and the threat to crew safety is significant."

When asked about the problem of a lack of public awareness of the piracy problem, Mr Brind, who is an ex-army officer, acknowledged that although around seven vessels are being held off the Somali coast, this news hasn't featured heavily on the global stage yet, whereas if it was aircraft at Heathrow, it would be on every news channel in the world.

However, he added that, particularly where terrorism is concerned, a lack of mainstream press coverage could keep shipping safer: “While I understand it is frustrating, I can also see why, in a way, it could be an advantage. Shipping has been able to conduct itself in a relatively discreet way. It may not benefit from the high profile enjoyed by the airlines but neither has it been subject to shoe bombers and the raft of terrorist attacks that high profile airlines have endured. Somali piracy could act as a billboard to unsavoury organisations around the world in highlighting some of the vulnerabilities of shipping. Personally, I think we should be alert to the idea that today the threat is Somali pirates whereas tomorrow, the threat could come from a number of other directions.”

Describing how he believes the piracy situation will alter over the coming year, Thomas Jakobsson, Chief of Operations at Sea Marshals, a Cardiff-based maritime security company, said the tactics seen in West Africa will continue to influence the actions of pirates elsewhere: “We will see less of the absolutely wild attacks in small skiffs which have been occurring closer to India. In the Southern Red Sea and the Gulf of Oman, it will most likely get slightly more violent as they will upgrade to better and heavier weapons. We’ve seen a spread to the West Coast with more violent piracy, and I think this may unfortunately spread over to the east coast as well. They might not try to hijack vessels and ask for ridiculous ransoms as usual, but try a different tactic instead — we may be looking at normal robbery and murder for property, possessions, cash and valuables.”

He added that there may be a shift to the kidnapping of persons rather than vessels — noting how it’s much easier to disappear in a small boat with one or two kidnap victims than it is to disappear with a 200,000teu oil tanker. “We have seen the kidnapping of people on the west coast of Africa. Also, in the Strait of Malacca, they jump onboard to steal cash and valuables, such as DVD players and mobile phones, stealing directly from the crew and I think this will probably increase slightly on the east coast of Africa as well. I believe we may see less incidences where the intention is to hold the entire vessel to ransom.”

However, when asked if he believes piracy is spiraling out of control, Mr Jakobsson said he doesn’t agree the problem is growing at any great rate: “We are seeing fewer attacks than we did before and overall, fewer successful hijackings. The vessels that have been hijacked in the last five to six months were mostly unprotected small wooden fishing boats or small wooden cargo ships transporting local goods, which are often hijacked with the intention of being used as mother ships.”

Confirming that no vessel with armed guards onboard has ever been hijacked, Mr Jakobsson said that as armed guards are now so commonly used onboard, pirates are finding it difficult to succeed and so, are finding it harder to finance their missions. “If you remove the armed guards, you’ll be back to square one again with successful attacks and happy pirates,” he warned.

Though many maritime professionals have argued that naval forces should assist in combating piracy, the question of who should fund such operations is a contentious topic and as Mr Jakobsson argued, the cost of this should not be borne by the tax payer, or by ship owners who don’t operate in areas affected by piracy: “If your government sends naval forces in to protect ships in the area, that funding comes from the tax payer. I see it the same way as the International Convention for the Safety of Life at Sea (SOLAS) or the International Safety Management (ISM) Code — these costs are to protect the vessel, seafarers and cargo and are the responsibility of the charterer who moves the goods.

“It should be the same with security, as it is for the goods, for the vessel and for the seafarers working onboard — it should be carried by the cost of the goods being moved, not by a taxpayer who may not even have an interest in those goods. If you argue that the protection of vessels from piracy

should be covered by taxpayers, then so should SOLAS, the ISM Code, the International Ship and Port Facility Security Code (ISPS Code) etcetera. By that argument, why shouldn't the insurance on trucks carrying goods by road also be borne by taxpayers?"

Anthony Rix, a retired Rear Admiral who specialised in maritime security for the last eight years of his service career, now works as Head of Maritime Security at Salamanca Risk Management — a firm with oil, gas and shipping clients off the east and west coasts of Africa. Commenting on the use of naval forces in combating piracy, Mr Rix said: "We need to understand there isn't a bottomless pit of military resources and the navies are stretched. I'm sure EU NAVFOR would like more forces. The Indian Ocean is a vast space — it's about 2,000 miles from Djibouti across to Sri Lanka and even if navies were larger I still think they wouldn't be able to secure the area from pirates. Therefore, there is a gap — there's where the private maritime security companies come in and I have no difficulty with that at all, so long as we have appropriate regulations and quality control."

Mr Rix said he believes the "right" solution to end piracy must come from effective best management practices (BMPs): "A shipping company must decide if it really has to go through a high risk area — if you can avoid going through there, you're much better off doing that, but quite often commercial pressures require ships to go through. Around 65,000 ships traverse the risk area every year and I'm sure they've worked out they have no other option and have to go through there.

"Effective implementation of counter-piracy measures and BMPs is essential. Vessels must ensure they have all the correct physical protection, such as razor wire, high pressure hoses and a citadel — and only then should the use of armed guards be considered. Armed guards are not the silver bullet, so to speak — you need to have all these other layers in place. Nevertheless, armed guards are acknowledged by the International Maritime Bureau as being very much part of the solution — but only if they are properly licensed and fully trained with quality systems in place."

On the subject of finding solutions to piracy on the ground, Mr Rix added that the capacity for nations to prosecute pirates should be improved as a catch and release approach does little but perpetuate the problem. He also said the presence of a properly functioning coastguard off Somalia could assist in protecting fishing areas and encourage ex-fishermen pirates to return to their previous vocation, but the proper law and order required for such an initiative is simply non-existent at this time.

Though Mr Rix spoke positively about international involvement in combating piracy, he warned against believing one single initiative can solve the piracy problem and concluded: “There are initiatives such as the regeneration of the Somali fisheries in order to provide alternative employment for pirates — these are to be welcomed. But there’s no one thing that’s going to provide a cure for piracy at the moment.”

■ Shipmanagement July Aug 2012

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Brievenbusfirma op Seychellen zonder brievenbus

Watererfgoed Vlaanderen vernam uit goede bron dat de brievenbusfirma op de Seychellen die de Charlesville, de laatste, nu gezonken Kongoboot, had gekocht, reeds met de noorderzon is verdwenen. Uiteraard was dergelijk scenario te verwachten, want precies daartoe worden maritieme spookfirma's opgericht. Wie 'Agent Ventures Ltd, Victoria, Mahe, Rep of Seychelles' een brievenbusfirma te noemt, doet deze vennootschap in feite nog teveel eer aan, want het verkoopcontract van december 2012 op basis waarvan de curator van de failliete jeugdherberg, de Stad Rostock en het Land Mecklenburg-Vorpommern het schip aan deze koper afstonden, vermeldde zelfs geen straatnaam en huisnummer. Een brievenbusfirma zonder brievenbus dus. De Poolse autoriteiten zitten nu met de handen in het haar. Vorige dinsdag hadden ze nog niet de allerminste indicatie over het eigendomsstatuut van de Charlesville / Georg Büchner. Wij hielpen ze door de identificatie- en contactgegevens van alle betrokken partijen door te geven. De Poolse overheid zet haar speurtocht verder en heeft informatie opgevraagd bij de havenkapitein van het Oost-Duitse Rostock. Agent Ventures Ltd bestaat echter niet meer – voor zover het ooit heeft bestaan. Ook over het al dan niet bestaan van een verzekeringsdekking (casco en/of P&I) bestaat momenteel geen duidelijkheid. De sleepopdracht voor het transport Rostock-Klaipeda werd niet door Agent Ventures Ltd gegeven, maar door de schrootwerf UAB Subare in Klaipeda, die fungeerde als onderaannemer van Agent Ventures Ltd. en na aankomst de eigendom van de Charlesville zou verwerven.

De sleepopdracht werd gegeven aan het sleepbedrijf Otto Wulf in Cuxhaven dat de opdracht doorgaf aan het Poolse sleepbedrijf WUZ in Gdansk dat volgens sommige bronnen nog steeds eigendom zou zijn van de Poolse Staat.

Uiteraard hebben wij geen enkele indicatie dat in heel de opzet een old boys' network van achter het ijzeren gordijn heeft meegespeeld. Verschrotingstheorie, illegaal afvaltransport en illegale plundering nu bewezen Reeds begin januari 2013 traceerden wij als eersten de verschrotingswerf UAB Subare in Klaipeda waarheen het schip zou worden weggesleept. Het management bevestigde ons toen dat het schip werd verwacht voor afbraak. De scheepsmakelaar ontkende toen bij hoog en bij laag dat een verschroting in het spel was en hing het Koper van gezonken Kongoboot Charlesville reeds met de noorderzon verdwenen – Omerta breidt uit – Wij vragen een haalbaarheidstudie naar berging en terugkeer lachwekkende verhaal op dat het schip was verkocht als hotelschip en om er belangrijke nieuwe investeringen in te verrichten. Nadat het verschrotingsplan was verijdeld onder verwijzing naar de Duitse monumentenwetgeving, werd deze komedie de jongste weken in alle ernst heropgevoerd door de curator, de scheepsmakelaar, de havenkapitein en de Oberbürgermeister van Rostock. Enkele dagen vóór het zinken verzekerde ook de schrootwerf in Klaipeda ons dat zij het schip niet zouden afbreken, maar herstellen en restaureren als hotelschip. Nu het schip gezonken is, verzekerde deze firma dit gisteren nog maar eens aan ons – de onbeschaamdheid kent inderdaad geen grenzen. Wij hebben ook als eersten gewezen op de milieuproblematiek, waar geen enkele Duitse overheid enig oog voor had. We hebben alle Duitse en Litouwse milieu-autoriteiten de

voorbije weken tot in den treure en met stavingstukken verwittigd dat een verschroting op touw was gezet. De verschroting werd in alle toonaarden ontkend om ons beschermingsproject te kelderen en om de Europese en internationale milieuwetten te omzeilen. Export van een schrootschip vergde een langdurige notificatieprocedure via de Duitse en de Litouwse regering. Uiteraard werd deze procedure niet gevolgd. Dat het schip daadwerkelijk bestemd was voor verschroting is inmiddels onomstotelijk komen vast te staan. Vóór afvaart uit Rostock liet de havenkapitein himself het schip immers volledig leegplunderen. De media en een hele reeks de jongste dagen door ons geïnterviewde ooggetuigen bevestigden ons dat alle navigatie-instrumenten van de brug werden gehaald en dat vele andere waardevolle interieurelementen brutaal zijn afgevoerd. Ooggetuigen bevestigen ook dat dit gebeurde met medewerking van de firma Baltic Taucher die allerhande zaken laadde op een langzij gemeerd een ponton, uit het zicht van het publiek op de kaai. De plundering toont aan dat de organisatoren van deze vernietiging van een beschermd monument van wereldniveau niet het allerminste ontzag hebben voor de wet. Het schip was bij afvaart nog steeds een beschermd monument en welke wijziging ook vergde een nieuwe aanvraag aan de erfgoeddienst van de Stad en een advies van het Land Mecklenburg-Vorpommern. Uiteraard werd ook deze wettelijke procedure compleet genegeerd. De havenkapitein schermt ermee dat de zaken zullen worden geschonken aan een maritiem museum. Hij geeft de lijst van verwijderde stukken echter niet vrij. De kans is reëel dat een en ander op eBay of in schimmige antiekhandels of veilinghuizen belandt, of, om ervan af te zijn, wordt versmolten, of in een haven of in zee wordt gedumpt. Wij hebben bij de Stad Rostock een volledige lijst van de verwijderde elementen opgeëist en gewezen op de onwettigheid van de handelwijze van de havenkapitein en op de mogelijkheid van een berging van het schip. Als het schip zou worden geborgen en naar ons land zou terugkeren, willen wij deze stukken allemaal terug. De plundering van het schip vóór afvaart levert ook het definitieve bewijs dat het schip helemaal niet tot hotelboot zou worden omgebouwd. Wie investeert in een hotel aan boord van een historisch schip maar laat eerst alle waardevolle interieurelementen weghalen of afbreken ? De milieu-autoriteiten van Duitsland en Litouwen zijn bij herhaling en met aandrang geïnformeerd maar hebben de afvaart niet willen verhinderen. In Duitsland berustte het milieutoezicht bij het Land Mecklenburg-Vorpommern, dat eerder het onbehoorlijke advies had gegeven om het schip weg te slepen en ons behoudsvoorstel te verwerpen... Nu de Duitse en Litouwse overheden het schip wel in de gaten bleven houden, rijst de vraag of het schip niet opzettelijk tot zinken werd gebracht om van het niet meer oplosbare milieuprobleem af te zijn. Een mogelijk motief is er; alvast is de zaak een ernstig onderzoek waard. We storen ons eraan dat de Oberbürgermeister van Rostock zich inmiddels in de lokale media van de zaak afmaakt met de dooddoener dat 'de Belgen toch geen geld hadden'. In realiteit hebben we de onmiddellijke aankoop van het schip aangeboden, met bijhorende investeringen en met principiële steun van de Vlaamse regering. Het schip moest en zou echter naar de schroothoop, voor de som van 750.000 à 900.000 EUR, waaruit o.m. het loon van de jeugdherbergbestuurders, het ereloon van de curator en havenrechten zouden worden betaald, en waarvan het saldo (ca. de helft) aan de Stad Rostock zou worden uitgekeerd. Blijkbaar is de koopprijs door Agent Ventures Ltd nog steeds niet betaald, en heeft de Stad Rostock dus nog geen eurocent ontvangen. Het is ongezien in de maritieme sector dat een verkocht schip afvaart zonder dat de koopprijs is betaald. Diverse experten voor wie koop en verkoop van schepen dagelijkse kost is, bevestigden ons dat bij verkoop van tweedehandse schepen 'boter bij de vis' de regel is: betaling gebeurt via een spoedstorting of een onherroepelijke betalingsbelofte van een bank die gelijktijdig wordt afgegeven met de eigendomsoverdracht, welke laatste in dit geval gebeurde bij vertrek aan de kaai. We onderzoeken ook of, als het schip moet geborgen worden, alle kosten niet kunnen worden teruggevorderd van de Duitse verantwoordelijken die hun medewerking hebben verleend.

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US to reroute San Francisco Bay ships to protect whales

Scientists studying the carcass of a 14-metre fin whale that washed up on a beach in the Point Reyes National Seashore last month found the creature's spine and ribs severed, likely from the propeller of one of the huge cargo ships that sail those waters. here have been many victims of such accidents in recent years as migrating blue, fin and humpback whales have been lured close to California's shore by plentiful krill, the shrimp-like organisms they eat. All three species are endangered. Now, after a two-year effort spurred by the uptick in accidents, federal maritime officials have approved a plan to protect whales in and around San Francisco Bay. It includes rerouting shipping traffic and establishing better ways to track whale locations.

The changes crafted by the National Oceanic and Atmospheric Administration, shipping industry representatives, whale researchers and the Coast Guard will likely take effect next year, after a final review by the United Nations International Maritime Organisation. "In 2010 it really struck home when a female blue whale carrying a calf was found dead on the beach," said Ms Maria Brown, NOAA's superintendent for the Gulf of the Farallones National Marine Sanctuary. "And blue whales' numbers are so small - to lose a female and a new whale coming into the population really sent home the message that we needed to look at the whale strike issue."

The shipping industry worked with federal authorities to establish new cargo lanes in one of the world's busiest ports. "Nobody wants to hit a whale, just like anybody driving down the highway doesn't want to hit anything either," said Mr John Berge, vice president of the Pacific Merchant Shipping Association, who worked on the plan. "We want to do whatever can be done to mitigate the risk, but do it based on good science and good management strategies as opposed to saying, `Let's just try this and see if it works.'"

The plan includes establishing a real-time whale monitoring network that would use trained sailors aboard commercial vessels to report when and where they see whales. Once sighted, a warning would be sent to other ship captains, giving them the option to slow down or take a different route. Captains now must rely on historical data on whale locations. That means ships may slow down unnecessarily in certain area, delaying delivery of goods.

Though voluntary, industry groups like the shipping association and the Chamber of Shipping America, which also took part in the study, believe shippers will support the concept because it could save them money. If successful in San Francisco, the reporting network could become mandatory worldwide through the UN's IMO. There are believed to be about 2,000 blue whales in the northeast Pacific, and about 10,000 worldwide. The largest animals on Earth, blue whales can grow up to 90

feet long, still a fraction of the size of cargo ships that can stretch 1,200 feet. There also are about 2,000 fin whales in the northeast Pacific, and about 2,500 humpbacks.

Source : AP / Today Online

NOAA Seeking Permanent Rule to Reduce Whale Ship Strikes Along U.S. East Coast

NOAA Fisheries Service is seeking comments on its proposal to make permanent the rules it implemented five years ago to reduce the number of collisions between ships and North Atlantic right whales. Right whales are among the most endangered species in the world, and are highly vulnerable to ship collisions. The rules, part of NOAA's long-standing efforts to recover right whales, are currently scheduled to expire in December 2013. NOAA's proposal to make them permanent, which includes a 60-day public comment period, was filed at the

Federal Register today. The existing rules, which reduce an ocean-going vessel's speed to 10 knots or less during certain times and locations along the East Coast from Maine to Florida, have reduced the number of whales struck by ships since 2008, when the speed limits began. No right whale ship strike deaths have occurred in Seasonal Management Areas since the rule went into place. Modeling studies indicate the measures have reduced the probability of fatal ship strikes of right whales by 80 to 90 percent. Also, NOAA's revised estimates indicate that the restrictions cost the shipping industry and other maritime communities about one-third of original 2008 projections. NOAA scientists say that industry participation and compliance is high, and that in most cases vessels have incorporated speed restrictions into their standard operations and voyage planning.

"Reducing ship speeds in areas where there are endangered right whales works," said NOAA Fisheries' acting administrator Sam Rauch. "It is a proven method to reduce deaths and serious injury to these incredible creatures. Making these protections permanent will make U.S. East Coast waters safer for right whales, and will allow them to reach full maturity, which is critical to their long-term survival." The rule proposes to continue existing speed restrictions during migration periods along three regions of the U.S. East Coast (Northeast, Mid-Atlantic, and Southeast). These measures are implemented during the time of year when right whales occur in each area. Speed restrictions apply to vessels that are 65 feet in length or greater, except federal agency vessels.

The proposed rule also seeks public input on ways to measure the effectiveness of the existing speed restrictions and whether they should be phased out in the future. This proposed rule is part of a more comprehensive approach to conserve right whales, including consulting on operations of federal ships under the Endangered Species Act, developing an expanded outreach and education program, and modifying shipping routes in waters of Massachusetts, Georgia and Florida. NOAA has also developed a dynamic management program whereby vessel operators are asked to travel less than 10 knots or avoid areas where whales occur in times and places not covered by seasonal speed restriction zones. Scientists expect these actions to significantly reduce the risks to right whales from ships. The North Atlantic right whale primarily occurs in coastal or shelf waters. Its known range includes winter calving and nursery areas in coastal waters off the southeastern United States, and summer feeding grounds in New England waters and north to the Bay of Fundy and Scotian Shelf. Historically depleted by commercial whaling, the North Atlantic right whale suffers injury and death from ship strikes and entanglement in fishing gear. These events may continue to contribute to the speciesdecline and inability to recover. Biologists believe that there are approximately 450 right whales in the Northwest Atlantic population, and that the number is growing steadily. The Endangered Species Act of 1973 requires recovery plans to serve as guides to promote the conservation and recovery of listed species. In 2005, NOAA Fisheries released a revised North Atlantic Right Whale Recovery Plan that provides an overall framework for promoting recovery of the

whale. Measures to reduce risks posed by entanglement in fishing gear are contained in NOAA Fisheries' Atlantic Large Whale Take Reduction Plan. Written comments on the proposed regulations filed today must be sent to NOAA Fisheries no later than August 6. After publishing a proposed rule, NOAA's Fisheries Service considers the public comments and new information that may have been provided. You may submit public comments via the Federal eRulemaking Portal at www.regulations.gov or by visiting the comment page on the Office of Protected Resources website atwww.nmfs.noaa.gov/pr/comment.htm **Source: NOAA.**

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Een eeuw Cockerill

De geschiedenis van de werf neemt echter reeds een aanvang in 1799, met de komst in Verviers van de Engelsman William Cockrell, zijn echtgenote en vier kinderen. (Later wordt de familienaam gewijzigd in Cockerill). De jongste zoon is John, vermoedelijk 12 april 1789 te Haslington geboren.

William Cockerill is werktuigkundige. Een economische krisis in Engeland verplicht hem werk te zoeken op het vasteland. Uiteindelijk komt hij in België terecht, waar hij met succes machines begint te bouwen voor de textielindustrie. In 1807 wordt Verviers verlaten. Vader en zoon John Cockerill

vestigen een bedrijf te Luik. In 1813 laat William Cockerill de zaak over aan zijn zoons James en John. Spoedig daarna neemt John de zaak volledig in handen; hij begrijpt onmiddellijk wat de toekomstmogelijkheden zijn van de jongste uitvinding van James Watt, die het gebruik van stoom als drijfkracht ontwikkeld heeft. In 1817 richt hij, met de steun van koning Willem I, ijzergieterijen te Seraing op. Hij specialiseert zich in het bouwen van stoomketels en -machines, en vindt hiervoor een goede markt in de scheepsbouw.

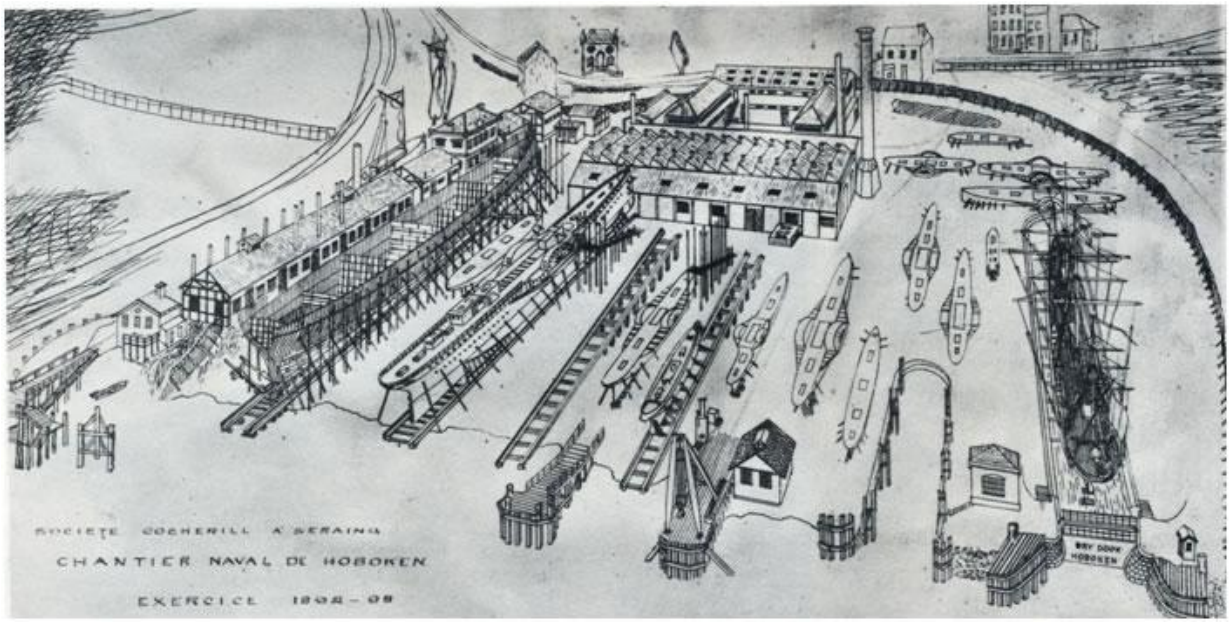
In 1821 vaart John Cockerill de havens van Rotterdam en Amsterdam binnen met zijn eerste stoomboot — 75 voet lang en 19 voet breed — gebouwd in zijn „ateliers" te Seraing aan de Maas. Dank zij de steun van koning Willem van Oranje en de medewerking van deskundigen uit de Nederlanden, kan hij samen met de „Societe Van Vollenhoven, Dutilh & Cie" — de latere Nederlandsche Stoombootmaatschappij — het monopolie verwerven inzake het leveren' van stoommachines aan de Nederlandse provincies.

Intussen vraagt de stoomvaart meer en meer aandacht. In 1824 wordt de proefvaart van de „Zeeuw" op de Rijn een zegetocht. De „Zeeuw" is een schip van 112 Rijnlandse voet lang, 16 voet breed en met 4 voet diepgang — met plaats voor 60 passagiers en 17 bemanningsleden — en voortgedreven door stoomketels en -machines, gebouwd door John Cockerill.

De Omwenteling van 1830 — waarbij de Nederlanden gescheiden worden en België ontstaat — werkt echter remmend op de verdere expansie van het bedrijf. Nauwelijks 51 jaar oud, overlijdt John Cockerill te Warschau op 19 juni 1840, tijdens een reis door Polen.

In 1845 besluit de Belgische regering tot het oprichten van een regelmatige scheepvaartverbinding tussen Oostende en Dover. Tussen de Belgische Staat en de „Ets. John Cockerill" wordt een contract gesloten voor de bouw van een aantal postboten. In Seraing zelf is — tengevolge van de beperkte diepte van de Maas — de bouw van zulke schepen onmogelijk. De beheerraad van de N.V. John Cockerill besluit dan een werf op te richten aan de Schelde te Antwerpen. Een perceel grond ten zuiden van de stad — op de plaats van de vroegere scheepswerven van Napoleon! — wordt in huur genomen. Een speciaal budget van 3.896 Fr wordt uitgetrokken voor de bouw van een helling. In augustus en december 1847 worden de eerste postboten, de „Ville d'Ostende" en de „Ville de Bruges", opgeleverd. Het bedrijf van John Cockerill te Seraing bouwt de stoommachines die deze

schepen voortraderen met een snelheid van 13 knopen .. .



In 1866 hangt de terugvordering van de gehuurde grond in de lucht. De beheerraad neemt een besluit: nabij het Kattendijkdok te Antwerpen wordt een perceel grond aangekocht. Dit is slechts een tijdelijke oplossing, omdat er op deze plaats zo goed als geen uitbreidingsmogelijkheden aanwezig zijn. Trouwens, bij de stapelloop in oktober 1873 botst de „Parlement Belge" tegen de kademuur van het Kattendijkdok. Er moet dringend uitgezien worden naar een geschikte én definitieve plaats voor de bouw van een nieuwe en vooral grotere werf. Die plaats is Hoboken.

Op 25 juni 1873 wordt de N.V. John Cockerill aldaar eigenaar van 6 ha. weiland. Een jaar na het begin der werkzaamheden werken er op de werf reeds 600 arbeiders en bedienden; honderd jaar later zijn dat er ruim 3.000. De zaken worden van begin af aan degelijk aangepakt in Hoboken. In 1883 wordt het eerste droogdok in dienst gesteld en het zelfde jaar richt Cockerill een eigen vakschool op, een verplichte maar kosteloze 3 jaar durende cursus voor iedere werknemer die nog niet is opgeroepen voor de dienstplicht. In 1914 wordt de school door de Duitse bezetter opgeheven. Later zal de gemeente Hoboken het technisch onderwijs gaan verzorgen. In 1890 komt de eerste stoomkraan op de werf, die dan al geschikt is voor de bouw van schepen tot 4.000 ton dw. In 1900 steekt de concurrentie de kop op.

Vlakbij Cockerill wordt begonnen met de uitbouw van de „Chantiers Navals Anversois". Men kan er schepen bouwen tot een lengte van 700 voet. De crisis van 1903 is fataal. Genoemd bedrijf moet voor de duur van twee jaar zijn deuren sluiten. In 1941 wordt deze werf door Cockerill overgenomen. Bij Cockerill te Hoboken wordt de scheepsbouwevolutie van nabij gevolgd — en de allereerste mailboot, die met turbine-aandrijving gebouwd wordt, breekt tijdens de proefvaart het wereldrecord snelheid voor passagiersschepen: 24 knopen/uur.

Tussen de jaren 1934 en 1936 bijvoorbeeld worden 3 mailboten opgeleverd; dubbelschroevers, door dieselmotoren voortgestuwd. Het zijn de snelste mailboten tot dan toe gebouwd — waar ook ter wereld. Hun topsnelheid bereikt 25,25 knopen/uur. Na de fusie met „The Antwerp Engineering Company" in de dertiger jaren, beschikt Cockerill na de tweede wereldoorlog over een totale terreinoppervlakte van ruim 22 ha.

Onmiddellijk na W.O. II is Cockerill maximaal actief. Er wordt een nieuw droogdok gebouwd voor schepen van 115 meter lengte en 12 meter breedte. De hellingen worden opgevoerd tot 4. In 1946 worden opnieuw 2 nieuwe droogdokken gebouwd, en in 1950 kan het bedrijf aanspraak maken op het bezit van de grootste lasloods in Europa: 156 bij 152 meter, in 6 hallen verdeeld.

De werf te Hoboken heet nu nog altijd „Société Anonyme John Cockerill", en is een afdeling van de gelijknamige firma te Seraing, bij Luik. Onder die benaming worden o.m. de zeer luxueuze pakketboten „Vera Cruz" en „Santa Maria" gebouwd.

In 1957 fuseert het bedrijf te Seraing met het staalconcern N.V. Ougrée-Marihaye en neemt van dan af de naam „S.A. CockerillOugrée" aan. Ook de werf te Hoboken krijgt deze benaming op het briefpapier, en in deze periode — die zal duren tot eind 1964 — worden o.m. de „Caltex Nederland" en de „Caltex Madrid" gebouwd, beiden ruim 31.000 ton dw.

In november 1964 besluit de beheerraad van Cockerill-Ougrée de scheepswerf te Hoboken als zelfstandige naamloze vennootschap op te richten onder de naam „N.V. Cockerill Yards Hoboken". Begin 1971 wordt nog een nabijgelegen terrein van nagenoeg 5 ha. aangekocht, zodat de werf zich momenteel over een totale oppervlakte van meer dan 35 ha. uitstrekt. Onder de huidige leiding zijn prominente schepen gebouwd, o.m. het m/s „Dart Europe" dat het grootste containerschip ter wereld was toen het in 1970 in de vaart kwam, alsmede de LASH-schepen „Bilderdyk" en „München" — zijnde de eerste in Europa gebouwde lichterschepen.

In de brochure „Een Sterk Verhaal... 1873-1973 — Cockerill Yards Hoboken", is een lijst opgenomen van de vaartuigen die gedurende een eeuw door de werf gebouwd zijn. In 1873 begint dat met bouwnummer 183, type passagiersschip — opdrachtgever Riesta, Manilla — Phillippijnen. Eindigend met 1973 is dat bouwnummer .874, type bulkcarrier, opdrachtgever GATX Bulkcarriers Belgium N.V. In die honderd jaar werden niet minder dan 259 zeeschepen gebouwd voor 22 verschillende landen — met daartussen een haast ontelbaar aantal kleinere vaartuigen. Het oudste schip te Hoboken gebouwd, en nog steeds in de vaart, dateert van 1913.

Naast het bouwen van schepen is de werf door haar installatie uiteraard ook geschikt voor het uitvoeren van grote industriewerken en het realiseren van offshore-projecten.

De volgende Cockerill-eeuw is intussen begonnen met een groot project. Om aan de toenemende vraag voor het bouwen van steeds grotere schepen te kunnen voldoen, zal — met financiële hulp van de Belgische Staat — een nieuw vast droogdok gebouwd worden met een lengte van 450 meter en een breedte van 60 meter, geschikt voor schepen tot 225.000 ton dw. Geraamde kostprijs ruim 1 miljard BFr. Deze uitbreiding zal het aantrekken van ca. 700 nieuwe werknemers tot gevolg hebben.

Inséré le 14 juin 13 BOEKEN Enlevé le 14 juillet 13

Door : Frank NEYTS

"Coasters op kaarten'"

"Coasters op kaarten'" Bij Uitgeverij De Alk verscheen onlangs een buitengewoon mooi boek onder de titel "**Coasters op kaarten, een maritieme groet**", samengesteld door Harry de Groot. Zolang er ansichtkaarten worden uitgegeven zijn havens en schepen aantrekkelijke onderwerpen om als groet te versturen. Niet in de laatste plaats door de zeeman zelf die zijn familie of geliefde wilde laten weten waar hij zich bevond. Het liefst met een kaartje waarop de ligplaats van zijn schip was te zien. Daardoor kan je op veel oude kaarten een kruisje vinden: hier liggen wij. Uit een bonte verzameling postkaarten uit alle windstreken ontstaat een schitterend beeld van de Nederlandse kustvaart in de vorige eeuw. Op vrijwel iedere afbeelding speelt een Nederlandse kustvaarder een rol. Haventjes die inmiddels bijna zijn vergeten worden voor het voetlicht gehaald. De rust van afgemeerde schepen en de hectiek van laden en lossen wisselen elkaar af. Honderden unieke ansichtkaarten maken dit boek een boek dat je moet beleven... Een aanrader!

"**Coasters op kaarten**" (ISBN 978 90 6013 332 3) werd als hardback op A4 formaat uitgegeven en telt 144 pagina's. Het boek bevat zo'n 250 foto's en kost 27.90 euro. Aankopen kan via de boekhandel of rechtstreeks bij de Uitgeverij De Alk, Postbus 9006, 1800 GA Alkmaar, Nederland. Tel +31.(0)72.511.39.65. internet: www.alk.nl. 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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Off the boil

Shipping companies are turning preventative maintenance service contracts to make up for inadequate crew experience

A generation ago most boiler damage was down to old age, while only a small proportion would be called in for repairs due to operational error. But over the last twenty or so years, the situation has completely reversed. Today few boilers ever reach their dotage. Instead damage from operational error accumulates to the extent that the whole installation needs to be replaced before wear and tear has chance to set in.

The reasons for this stark reversal are multifarious. But according to John Kinman of the Harris Pye Group, the specialist boiler repair company, the primary factor is the fall in crew technical competence that has beset the industry in recent times. `Contemporary crews don't have the same depth of knowledge or body of experience required to maintain plant properly. The training they have undergone can be so rudimentary, that sometimes they won't even know what problems to look out for,' he says.

Insurers have even coined `crew negligence' as a term to classify claims for repair work made necessary this way. It is telling that `shipowner negligence' did not enter their vocabulary, given that one would think it's in their interest to run a tight ship. As with all things, it comes down to a tradeoff between efficient, reliable operation and cost.

`After fuel, crew remains one of the biggest costs facing shipowners and managers. There is always pressure to offer cheaper charter rates. They can't do much about fuel prices, cutting corners with crew is the easier option,' conjectures Kinman.

What can happen is that certain safety features of the equipment are blanked out. Of course, if the plant is then pushed beyond its normal operating envelope, these safety features are not triggered. While this may sound inherently dangerous, such practices have long been employed as expedient to keeping machinery running when it is most needed. The difference these days, as perceived by the Harris Pye Group, is that the subsequent damage is not fixed properly.

The problem is further compounded by short notice crew turnaround. When the damage is left untended to and a new crew comes aboard, they are often unaware of what's gone before. The upshot of this is that the damage accumulates.

In some respects, the continued viability, indeed success, of a business such as the Harris Pye Group is a consequence of lower crew standards. If the crew possessed the competencies necessary to maintain the plant properly, the company would find it hard to prosper.While repair and reconditioning techniques have not altered much over the years, the approach taken to repair work has changed dramatically. Explains Kinman: `We have a witnessed a shift in mindset. A small — but growing — share of owners and operators are looking for quick-fix Band-Aid solutions. If a quickfix lasting a year costs $1000 while a proper long-term repair lasting five years costs $10 000, they will opt to repeat the quickfix. This is partly attributable to the increasing influence exerted by company accountants about how vessels should be operated.'

It is easy to conjure up an image of a golden age when marine engineers would take much more pride in their work. Today, that pride — where it does remain — is under constant threat as commercial pressures take ever higher priority.

While concerned about short-termism becoming more pervasive, there are still plenty of owners/operators out there that are capable of seeing the larger picture. A proper repair might take longer to complete than a temporary 'patch-up' job, but it results in less downtime overall. The economics are not always as simple as they might seem at first glance'.

Boiler efficiency is mostly a function of condition, so regular condition assessment is a vital element of any maintenance regime. Statutory annual inspections, for example to satisfy class, are typically focused more heavily on the safety of the plant rather than its efficiency. They check that the pressure release safety valves and that the high-/ low-end threshold alarms are all working properly. As such, these inspections do not serve to provide an indication whether a boiler is good to run for another year or two.

To that end, the Harris Pye Group advocates a policy of carrying out a separate condition assessment at the same time as class does their safety check, explaining that many owners are amenable to the idea. If they find the boiler is very dirty internally, whether gas side or water side, it lowers efficiency so more fuel has to be burnt to generate a given amount of energy. So there are paybacks in keeping boilers as close possible to pristine inside.

Indeed, a growing share of activity at the Harris Pye Group relates to inspection services and preventative maintenance, especially to the oil majors and big LNG operators, whose losses — if a ship drops out of cargo — are huge. So in the Group's experience, they tend to be more willing to spend money to make sure `things are right'.

Boilers and slow-steaming

At first glance slow steaming would not appear to affect boiler maintenance. Most of the impact is inflicted on the main propulsion engines, which are forced to operate below their optimum design speed. However, repercussions have been identified with auxiliary equipment, such as waste heat recovery (WHR) systems. Keeping units clean at low revs is problematic so it could be argued that slow steaming is a direct cause for soot fires in forced circulation economizers. On the composite side too, the same problem is encountered in keeping units clean, which creates different issues, which equally could be blamed on slow steaming.

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Charlesville: Berging voor Vlaanderen niet aan de orde - Losse museumstukken gered

Voor Minister Geert Bourgeois is het dossier een "roemloos einde" gestorven en is een berging van het gehele schip niet aan de orde. Hij vermeldde kostenramingen van tussen 5 en 30 miljoen EUR. Deze cijfers komen uit het uitvoerige, confidentiële onderzoeksrapport dat wij eergisteren aan de Minister, de Stad Antwerpen, Polen en Duitsland bezorgden. Onze intensieve gesprekken met meer dan 7 bergingsfirma's en bergingsconsultants leverden een indicatie op van ca. 25 miljoen EUR voor een klassieke berging op commerciële basis. Volgens andere firma's kan de kost, door de inzet van minder gesofisticeerd materieel en met inachtneming van de erfgoedcontext en de publieke visibiliteit, beperkt blijven tot ca. 5 miljoen EUR, met een maximum van 10 miljoen EUR. Deze kosten moeten worden gedragen door de scheepseigenaar (die blijkbaar verdwenen is), zijn verzekeraar (voor zover die bestaat), of door Polen, waarbij wij hadden voorgesteld dat Duitsland en Vlaanderen vanuit erfgoedperspectief eventueel zouden meefinancieren. Volgens het VN Zeerechtverdrag moeten Staten historische onderwaterobjecten immers beschermen en in dat verband samenwerken. Ons onderbouwde voorstel om i.s.m. twee bergingsfirma's alvast een professionele haalbaarheidsstudie uit te voeren naar berging, restauratie en transport werd in het Parlement niet besproken, en we gaan er dan ook van uit dat het door de Minister verworpen is. Aangezien wij zelf geen middelen hebben om een haalbaarheidsstudie te bekostigen, en wij ondanks herhaalde vragen sinds begin 2012 geen financiers voor studies naar de **Charlesville** konden vinden, zal ze niet kunnen worden uitgevoerd. Wij zullen het dossier van de berging wel blijven opvolgen via onze contacten in Polen en Duitsland en blijven ter beschikking om bij een eventuele latere berging behulpzaam te zijn.

Tijdens het debat werd bevestigd dat de Deelstaat Mecklenburg-Vorpommern aan Vlaanderen een lijst van in Rostock uit het schip verwijderde interieurelementen heeft bezorgd (stuurrad, kompas, telegrafen, schilderijen, prenten, bedieningspanelen, etc.). Deze zaken werden verwijderd zonder de vereiste toelating van de erfgoeddienst van de Stad, waaromtrent wij in een brief van 7 juni formeel ons beklag hebben gemaakt bij de Stad en de Deelstaat. Dientengevolge heeft de Stad Rostock de curator erop gewezen dat de stukken niet zomaar konden worden verwijderd. Blijkbaar heeft de Deelstaat de stukken, die her en der dreigden te verdwijnen, nu uit eerlijke schaamte terug verzameld. Een klein deel van de stukken schijnt te zijn overgebracht naar het maritiem museum van Rostock, dat naar verluidt al liet weten bereid te zijn ze desgevraagd opnieuw af te staan. Wij hebben eerder bij herhaling geëist dat, uit respect voor ons maritiem erfgoed en voor de Vlaamse behoudspogingen, minstens de interieurstukken van de Charlesville aan Antwerpen zouden worden afgegeven, en zo kunnen worden toegevoegd aan de collectie van het Museum aan de Stroom, met het oog op de latere uitbouw van een nieuw maritiem museum. Door onze interventies bij de Duitse overheden kunnen Vlaanderen en Antwerpen hopelijk deze troostprijs in de wacht slepen. Het verlies van het iconische schip zelf blijft voor ons echter een bittere pil.

Wij zijn erg trots op de pogingen die we als vrijwilligersorganisatie ondernomen hebben om het laatste historische Belgische koopvaardijschip te redden en naar Antwerpen terug te halen. De vele publieke en noodgedwongen vaak discrete démarches, de onderhandelingen met publieke en private partners, de uitwerking van opeenvolgende behoudsvoorstellen, de gigantische e-mail- en briefwisseling en de communicatie hebben een enorme moeite en heel veel professionele tijd gekost. Wij hebben onze aandacht van meet af aan gericht op het uitwerken van een behoudsvisie en het vinden van geldelijke middelen. Het schip verkeerde niet meer in topconditie, het behoudsproject kostte meer dan 10 miljoen EUR, financiers waren ondanks zeer vele inspanningen nauwelijks te vinden, de schrootwaarde stond een behoudsproject in de weg, de Duitse overheden bezondigden zich aan flagrant onbehoorlijk bestuur en het draagvlak bleek al bij al beperkt, wat de zaak meer dan eens op donquichotterie deed lijken. We gingen door dankzij de hartverwarmende steun van vele oud-opvarenden, experten, vrijwilligers, enkele kandidaat-risico-investeerders en professionele relaties, van de tientallen organisaties uit de wereld van het watererfgoed, het koloniaal erfgoed en de haven- en scheepvaartsectoren en van de tienduizenden Belgen die via Facebook, per e-mail of per brief mee aan de boot trokken. Al komt dergelijke prachtkans nooit meer terug, het toegenomen publieke bewustzijn rond watererfgoed is hopelijk een troef voor de toekomst.

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Single-hull tankers still a game changer in the market

A new analysis from shipbrokers Gibson showed this week that just 223 single hull tankers of over 25,000 dwt remain in the fleet, representing about 5% of the total tanker population. Only seven flag states have 10 or more SHs on their respective registers. Excluding Panamanian and Liberian flag, Indonesia has 31 SHs, China (21) and Brazil (13).

Petrobras remains the largest owner of SH tonnage with 13 tankers said Gibson. The company took notice of this week's sale from Ship Finance International of three single hull VLCCs, following the early termination of their long-term charters. "Even though these units have for some time been employed outside the tanker market on long-term storage contracts, it does once again put the spotlight on what impact (if any) the remaining SHs have in today's tanker market?" wondered Gibson.

It went on to say that of the remaining 33 VLCCs, just 5 continue to trade. "More significantly, 16 units are employed in long-term projects mostly storing fuel oil in the Singapore area. A further 7 are laid-up in waters around Labuan. With the inclusion of the 3 Ship Finance vessels (reported sold to Petrobras) as many as 10 SH VLCCs are destined for conversion to FPSO/FSO projects.

The Suezmax fleet is now 98% double hull with just 8 SH units still afloat. Again a few of these are engaged in long-term storage or destined for offshore conversion. Excluding those vessels still trading, it is most unlikely that any of these units will return to the tanker market. It is also unlikely that we will see any further tanker sales for conversion to dry cargo once those presently completing are redelivered" said Gibson. It also commented that "while our analysis stops short of a complete breakdown of the fleet, we know that many of the smaller tankers have had no reported movements for several years. Of course owners are able to continue to trade these tankers until end 2015 and we are aware of several examples where owners have declared that this is their intention. On the other hand, several owners have put up the 'for sale' signs with little prospects of finding a buyer or indeed even realising a scrap value.

For some time it has been our view that the remaining SHs have had little or no impact on the tanker market. However, swifter removal of the remaining SHs could provide opportunities for some of the older double hulls to fill the roles currently held by their counterparts" concluded Gibson. Meanwhile, this week, in the VLCC tanker market, "few days celebrations in China and Korea could only have a negative impact on the VLCC market. Even though average bunker prices have slightly lowered, demand was unstable enough to again provide an opportunity to charterers for marginally affecting rates.

Most voyages from the Middle East Gulf to the Far East are today concluded under WS45 which, basis a 'normal' speed of 14 knots, still keeps daily returns in the negative sector (about US$-2,500 per day). One should note that, in such a poor environment, some new buildings coming out of the yard are now going directly to parking slots idle while the oldest single hull units are now quickly sold for demolition or conversion. In the West and especially from West Africa, despite slight signs of revival for the Suezmax market, VLCC tonnage seems unable to escape from the doldrums.

Rates are hardly better than WS45 for a transatlantic voyage and well into the low WS40's for all eastern destinations" mentioned shipbroker Barry Rogliano Salles in a separate report. Gibson meanwhile stated that "going nowhere - and not particularly fast - sums up the present VLCC situation in the Middle East Gulf. September barrels are now almost completely mopped up, and so far there has only been mild skirmishing on October dates. Next week should see a little more noise as Charterers receive final confirmations of their October programmes, but it will take a severe lapse

in discipline to provoke any meaningful rebound. Currently rates remain at WS 34 west and a little under WS 45 to the East. Suezmaxes had a very quiet week of it that allowed for no discernible movement from around 130,000 by WS 47.5 west and sub WS 80 east with no early turnaround looking on the cards. Aframaxes saw a little more activity than last week, but that only served to allow Owners to compete to a lower 80,000 by WS 97.5 level to Singapore with further discounting possible" concluded the London-based shipbroker. **Source : Nikos Roussanoglou, Hellenic Shipping News Worldwide**

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Real-time underkeel clearance systems

by Captain Allan Gray, GM port operations/ harbourmaster, Fremantle Ports & Federal Master Company of Master Mariners Australia

Throughout this paper I will be referring to DUKC, a trademark of OMC, because Fremantle Ports has over 15 years' experience with this product as a real-time under-keel clearance system.

However, this discussion is about real-time under-keel clearance systems in general, their application and the impact they may have on mariners.

Consider as master of a laden tanker you have arrived at Fremantle Ports with a draught of 13.8m. You were advised by your chartering department that this was the maximum economical draught for this period (whatever that means). You note that the channel you must pass through is only 14.7m at LAT. The pilot boards in good spirits, as they always do, and presents you with a report with a lot of numbers and a pretty graph and calmly advises you, "Captain, we are good to go as we will have a minimum bottom clearance of 25cm for the transit."

What does it all mean?

In this paper I would like to unravel some of the mystery. However, it is not my intention to delve into the science behind it all. I would like to start with touching on the extent to which DUKC is being used and its application in Fremantle. This will help to set the picture moving forward. We will consider the static methodology versus the DUKC methodology and the resultant outputs and what they mean. To close, I would like to consider both the benefits and limitations for the mariner and consider what we as an industry must do.

As you can see, DUKC is beginning to be more widely used but particularly within the Australasian area. Most ports in Australia are using it for export. However, Fremantle and Melbourne are utilising it for imports.

Fremantle Ports has two principal areas of authority: the inner harbour (containers, cars and break bulk) and the outer harbour (bulk cargoes such as grain, alumina, mineral sands, fertilisers and petroleum).

Three key channels exist:

- the Deep Water channel which was 15.2m but was recently dredged to 16.5m and 18m on the bend
- the Success and Parmelia channels at 14.7m
- the Stirling/ Calista channel at 11.6m.

Fremantle ports operate DUKC in these three areas of the port. Recently experience with large tidal residuals required us to reduce the trigger points for operation of DUKC to zero tide. Real-time

conditions are measured by three wave rider buoys, three wave poles (which measure wave and tide), two wind sensors, a met station and a current meter.

Coming back to our example of the tanker arriving at 13.8m, given current static parameters only two factors would be taken into account when determining under-keel clearance; the predicted tide and squat based on the speed envelope of the vessel.

I would question how many vessels consider with squat the impact of shallow and deepwater and bank effect. In many cases, from my experience, safety management systems on board vessels stipulate UKCs are required to be maintained by company vessels either by a single quantitative figure, for example, 1.0m or percentage of draught, for example 10 per cent of draught. It is most likely the case that these figures are prescribed by the port in the port parameters. In many cases these figures have been based on past experience and generally apply equally to all vessels. They have been developed from either experience, gut instinct or good luck in that there has not been a grounding in the past.

So given the static parameters for Fremantle, our tanker of draught 13.8m would be faced with the following:

- Success and Parmelia channels static rule is 13 per cent of draught (November to April) 14 per cent (May to October)
- depth 14.7m
- transit time 30mins
- 15.6m depth of water required for draught of 13.8m, which would equate to a tide of 0.9m.

Static tidal windows: passage commencement windows . Window 1 open-close: 08:38, 25 March 2011 to 17:17, 25 March 2011. Window 1 open-close: 09:23, 26 March 2011 to 18:18, 26 March 2011.

However, this calculation takes no account of the fact that on this day tides exceeded predictions in the order of 20-25cm. This factor alone may have given our master a little more comfort for the transit but it should be noted that equally Fremantle experiences similar negative residuals which would have, on paper, closed out the vessel, and the master would not have been aware of it from his calculations.

The DUKC methodology takes into account the following;

- Surveyed depths taking into account survey tolerance and, if necessary, allowance for siltation
- actual tides recorded from tide gauges, i.e., astronomical tides plus or minus any tidal residual
- vessels draught
- squat given the vessel's speed envelope and channel profile
- reduction in UKC due to heel from wind, rolling or turns
- pitch, yaw and roll.

The resultant is the residual under-keel clearance, our 25cm.

So given the same tanker as previously discussed, we can see that on that day, given the conditions, the vessel would have achieved a window that would have extended to 2030 and reopened at 0600 on 26 March. This would have extended the operational window by around 3 hours either end.

However, reducing the speed to 8.5 knots through the Success and Parmelia channels would have provided the vessel a 24 hour window. In‘ fact had the master known, could he have loaded the vessel to a deeper draught?

We will consider that latter.

Let's consider more the DUKC output and what it means. The chart provided to the pilot and master is similar to the one shown. In this case it is for a transit through the Stirling channel. The bold lines are the limits and the lighter red and blue lines are the calculated results for the transit.

For a safe transit, two criteria must be satisfied. Firstly that the bottom clearance (BC), i.e., the minimum clearance between the keel and the highest point of the sea floor, allowing conservatively for all factors affecting UKC, must be greater than 25cm (PIANC guideline). Secondly the manoeuvrability margin (MM), i.e., the minimum clearance between the keel and the manoeuvrability-governing depth, allowing conservatively for all factors affecting UKC, is greater than 0.9m. The manoeuvrability margin ensures that there is adequate flow of water over the rudder to maintain vessel steerage. The general PIANC accepted MM is 0.9m. However, our experience with certain vessel types and sizes, such as the new-generation container ships and 48m beam tankers, has resulted in us modifying this limit to 1.0m and 1.1m, respectively, so as to ensure we have adequate water flow over the rudder to ensure manoeuvrability.

The chances of the actual BC or MM reaching the displayed values are remote. However, when considering the overall risk-mitigation strategy, it is assumed that there is an equal probability of the event occurring.

You can see from this chart that the controlling depth may be well to the side of a sector being considered but, as previously indicated, the point is given equal probability to any other point as to the likelyhood of approaching it.

Given that one of the factors to be considered in DUKC is vessel type and stability condition, I thought it relevant to provide an example of what this means. You can see here that I have two vessels: a container vessel and a tanker both at a draught of 13.55m, which have been modelled for the same transit. You will note that the gross UKC (GR) being depth plus tide minus draught, is the same for each vessel. However, the resultant BC and MM is quite different and in fact in the subsequent charts you will see that the controlling points for the transit are quite different. This fact is important to consider as, from our experience, we quite often have agents and masters arguing that it is not right that a vessel of equal or deeper draught is able to transit a channel and they are not. It is also important to understand here that they have taken little account for the way their vessel will respond in the prevailing sea conditions.

I would like now to consider a couple of real-life examples that demonstrate this point.

The first is a tanker similar to the one we have been talking about in this paper. It had a draught of 13.82m, which was close to the maximum economical draught expected for the period, and tidal residuals were not significant. However, we could not find a window for the vessel.

The swell/wave conditions were on the beam and at a period of 15 seconds. Upon investigation it was discovered that the roll period for the vessel's loaded condition was coincident with the period of the swell, resulting in what may be deemed a synchronous roll. This meant that the vessel's turn of the bilge was approaching the BC depth for the transit.

The second example demonstrated where a squat container vessel would have been restricted from entry to the harbour because the pitch of the vessel resulted in the vessel approaching its BC depth.

During the period we had an extensive period of severe weather. Combined sea conditions were in the order of 7m and had been present for over 24 hours. The vessel's draught was only 11.6m and the Deep Water channel was at that time dredged to 15.2m. Normally a vessel would not apply for DUKC until its draught exceeded 12.2m.

In this case, due to the squat form of the vessel, the combination of roll and pitch from wave conditions and heel on turning at DWC 1 resulted in a close out. This is something we would not normally have expected but have validated over time. Again it had never been considered as a possibility because we were nowhere near a static situation.

So what's the challenge to the master?

There is a real probability that, given suitable weather conditions, the master could achieve increased loadings for the company. But, as you have seen, there is also the probability that the master could be delayed. For a master discharging in the port, what draught should they load, considering they are loading well in advance of known weather conditions? This is somewhat overcome by producing a table of maximum economical draughts for customers which are based on static calculations with seasonal corrections. These draughts generally allow for an 8 hour window per day based on average conditions.

The port often receives stability data which is transposed or is outside what would be considered the normal parameters, so how confident or competent are the ship's crew at producing validated stability information? The port has experienced a case in which one master falsely declared the arrival draughts at less than what they really were without understanding the ramifications of that action. Ensuring reliability and availability of sensors is critical to the operation. This is generally covered by back-up sensors and modelling of wave transformation from alternate sensors.

Despite all of this, the biggest challenge for the master is that they have no knowledge or training in real time of under-keel clearance systems.

What should be done?

Firstly the real-time under-keel system needs to be recognised as an aid to navigation and appropriate standards established. I am not calling for anything new here, in fact considerable work has already been done over the past three and half years through the chairmanship of Terry O'Brien at the PIANC working group 54. I believe it is expected that a report will be provided by the end of 2011 or early 2012. This will ensure that the master can be ensured of common standards and reliability when faced with these systems. However, more importantly, the recognition of this system as an aid to navigation must ensure that mariners are appropriately trained to understand the mechanics of the system, its outputs and its limitations.

Ports utilise DUKC as a risk mitigation tool whilst customers in general benefit commercially from well planned loadings. The master, like the port, needs to recognise that DUKC or other real-time systems are available as a risk evaluation tool and in real terms provide a more defensible argument than the old static calculations. The difficulty will always be that the master is unable to see the tool before arrival and therefore the master's planning lacks the foresight of this information. Again I would highlight that only good training will put the master in a position of having reasonable expectations of the system output and that the master understands the need for supplying accurate and reliable ship stability data.

Product enhancements of DUKC, such as PPU and VTS monitoring in real time will further give the master confidence in transits. IFSMA

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Un porte-conteneurs de 8100 EVP coule en océan Indien

Agé de seulement cinq ans, le MOL Comfort, porte-conteneurs de 8100 EVP (équivalent vingt pieds, taille standard du conteneur) a coulé hier matin à 400 milles au sud-est des côtes omanaises. Les 26 marins (11 Russes, 14 Philippins et un Ukrainien) de l'équipage sont sains et saufs. Les circonstances exactes de l'accident, le premier du genre pour un grand porte-conteneurs de construction récente, ne sont pas encore exactement connues. Le MOL Comfort, long de 316 mètres et transportant 4382 conteneurs (pour une équivalence d'environ 7200 EVP) au moment des faits, a vraisemblablement été malmené par des conditions de mer difficiles (vents violents et 7 mètres de creux) alors qu'il remontait l'océan Indien, en provenance de Singapour et à destination du port saoudien de Jeddah.

Une brèche se serait formée au milieu de la coque, provoquant un envahissement de capacités (ballasts ou soutes). Ne pouvant rien faire, le navire étant privé de propulsion et d'énergie, l'équipage a rapidement évacué. L'opération de sauvetage a été coordonnée par les garde-côtes indiens, qui ont dérouté plusieurs navires, notamment les Hanjin Beijing, Zim India et Yanhan Express, afin de porter secours à l'équipage. Le Yanhan Express a pu récupérer les marins, qui avaient pris place à bord d'un canot et de deux radeaux de sauvetage. Ils devraient être amenés au port sri-lankais de Colombo.

Selon les quelques photos prises au moment de l'accident, il semblerait que la brèche soit dûe à de gros efforts d'arc subis par la coque. On constate en tous cas une cassure nette sur toute la largeur et la hauteur de la coque. Il est encore difficile de dire s'il s'agit d'une défaillance structurelle du navire ou si l'accident est imputable à une mauvaise répartition de la cargaison, qui aurait eu pour conséquence une mauvaise répartition des efforts.

From a naval architecture standpoint, this is a puzzling situation. Ships are designed to handle long period and large waves that crest on the bow and stern and have a trough amidships. This creates a sagging situation that puts extreme tension on the keel and compression at deck level. The opposite, "hogging" situation occurs when the crest of the wave moves to the center of the ship and the trough of the waves are at bow and stern.

The repeat flexing of the ship in these perfectly timed waves is likely what caused the loss of this vessel. In the photo above, a perfect example of hogging is shown, where the bow and the stern are both lying in the troughs of two waves.

It should not have happened however. Ships are built to handle this situation and engineering rules are followed to ensure the transverse "section modulus" of the vessel is sufficient to handle these extreme stresses imposed by nature. There are other possibilities however…

The loading of the containers on board may have exacerbated the situation. Although the loading of the containers appears even in the photo, the weight distribution of the containers may not have been even. Had heavier containers been loaded on the bow and stern and lighter ones in the center of the ship, the vessel may have been placed in a hogging situation before she even set sail. It's speculation of course to say one way or another, but assuming that she met class requirements, it's one possible explanation for what happened.

Sur zone, la situation est en cours d'évaluation. Un officier de communication de la Vème flotte américaine, basée à Bahreïn, faisait état hier d'un navire « en train de couler avec sa partie arrière encore visible et en feu ». Il précisait également qu'il y avait une « quantité considérable d'hydrocarbures sur l'eau, ainsi que de très nombreux conteneurs flottant et dérivant ». En plus des dommages écologiques probables de cette pollution, les boites et leur contenu constituent également un risque environnemental, mais aussi un danger pour la navigation, d'autant qu'ils vont sans doute s'éparpiller sur une large zone.

Le MOL Comfort, ancien APL Russia, appartient au très réputé armement japonais Mitsui OSK Lines. Il a été construit en 2008 dans les chantiers japonais Mitsubishi de Nagasaki et présente un historique vierge de tout incident. Affecté à la ligne Europe-Asie de MOL, il faisait régulièrement escale au Havre. Dix autres porte-conteneurs du même type, appartenant aux armements APL et MOL, ont été construits entre 2007 et 2013. Deux autres doivent être livrés dans les semaines à venir.

Inséré le 20 juin 13 OPEN FORUM Enlevé le 20 juillet 13

Cross-cultural competency through education and training

by Jim Parsons, academic director, School of Maritime Studies,Marine Institute,Memorial University,Newfoundland, Canada

In an effort to address the omnipresent reality of cultural and national diversities in the maritime workforce, as well as the current status and trends regarding cross-cultural training in maritime education and development of training systems, this research methodology involved:

- a review of international regulatory guidelines specific to cross-cultural competence
- an analysis of shipping companies' websites' content regarding the implications of career opportunities to the relative need for cross-cultural competency of future maritime professionals
- a curriculum analysis survey regarding the state of cross-cultural education a roundtable discussion that took place at a Maritime Human Resources Conference organised by the Company of Master Mariners of Canada (Marine Institute, St John's, Newfoundland) and feedback from minisurvey of attendees at two conferences (the Annual General Assembly in Busan, Korea, and the International Maritime English Conference in Alexandria, Egypt)
- a field survey comprising six focus groups, i.e., three at the Marine Institute (MI), two at Maine Maritime Academy (MMA) and one at John B. Lacson Foundation Maritime University (JBLFMU).

The literature review among licensure documents, maritime labour-related regulations and other accepted industry documents showed that currently no maritime international regulatory body specifically requires cross-cultural skills for current and future maritime professionals. However, there is a strong interrelationship between the level of quality of offered services by a ship operator, and the concern on cultural awareness, cultural sensitivity, interpersonal, diversity and negotiating skills. None of the IAMU member institutions that responded to the curriculum analysis (47 per cent) identified courses entitled Cross-cultural competency. The findings clearly showed that there are numerous courses which may address culture's effects, and cross-cultural and national diversity. However, this is not to say that this constitutes training. Rather this is mostly passive learning. The websites and career-links analysis revealed that almost half of the companies' sampled - shipowners, managers and operators - show that cross-cultural competency appears to be a human resources' competitive advantage over the long term, a finding that has significant implications for maritime training and professional development over the long term. Roundtable attendees unanimously supported the idea that cross-cultural competency was essential to the 'arsenal', so to speak, of maritime professionals. As for the conference participants, a minisurvey showed that 97 per cent supported the idea that development of cross-cultural competency for present and future maritime professionals is important, if not vital.

Convenience samples assembled for focus groups 1 and 2 at Maine Maritime Academy in Castine, Maine, USA, supported the idea that cross-cultural competency should be integrated throughout the curriculum, to varied extents, and not just for the licensed programmes. There was no support for a single course dedicated to cross-cultural competency training for maritime professionals. Rather, both FG1 and FG2 supported an infusion of cross-cultural competency across the curriculum and to varying extents. Even if existing courses are factored into cross-cultural competency in their existing form or adapted through collaboration, the need for an "international perspective" regarding the issue of cross-cultural competency was emphasised. Both FG1 and 2 stressed the importance of stereotyping avoidance and authoritative country expertise. Training needs identified included, but were not limited to, attention to education content pieces such as protocols for interaction and decision making, education about stereotyping and stereotyping avoidance, gender roles, cross-cultural perceptions of gender roles, reporting relationships, world religions, dietary practices, culture's influence on teamwork and social interaction processes, job roles and perceptions of personal space.

Challenges to implementation might be mitigated through partnerships with private sector and not-for-profit agencies with diverse cultural and national constituencies and workforces. Convenience samples assembled for focus groups 1, 2 and 3 at the Marine Institute in St John's, Newfoundland, Canada, supported the idea that cross-cultural competency should be integrated throughout the curriculum in a staged and phased approach. The training needs to be offered to everyone, should be commenced early and continued throughout the professional progression and development of the individual. The topic of cross-cultural competency was generally considered to be very broad and diverse, and consequently was not considered suited for delivery in a standalone, single-course offering. Another consensus among the three groups was the need for highly skilled, experienced and qualified resources for the delivery of training. It was also noted that the measurement or evaluation of cross-cultural competency will be a significant challenge given the global complexity of the topic. Unless the students can experience cultural diversity, it will be difficult for the student to truly understand cross-cultural differences and to remain cross-culturally competent. The same will be true for a faculty tasked with the development and provision of the training. How will they stay current when physically stationed in a maritime university?

Finally in the focus group at the JBLFMU show in the Philippines participants generally agreed that there is a significant need for cross-cultural training and skills among present and aspiring seafarers. Cross-cultural working environments are unavoidable for those who are and will be in the seafaring profession. Therefore cross-cultural competency was deemed to be extremely necessary, as it ultimately optimises seafarers' efficiency, effectiveness and productiveness in the practice of their profession. Further, there was consensus that this research on cross-cultural competency could potentially pave the way to alleviate social discrimination among seafarers and other maritime personnel, as well as create mutual understanding among the crew and officers on the sailing vessel. This is not to say that there are not challenges to be faced in the provisional of cross-cultural training to seafarers.

Inséré le 22 juin 13 OPEN FORUM Enlevé le 22 juillet 13

Are owners and charterers really that stupid?

Much of IMO's thinking about regulatory alternatives for reducing CO2 emissions from ships is based on the assumption that shipowners have been slow to adopt measures which would increase fuel efficiency, even when such measures are economic*.

For example, the Bahamas flag state said that unfortunately, due to various structural impediments in the industry, the high cost of fuel has not been the main driver for the adoption of these technical and operational measures.1

This failure is variously ascribed to the fact that –

- Owners know their ships will spend a part of their lives, quite possibly a large part, under term or bareboat charter. While a ship is under term or bareboat charter, it is the charterer that purchases the fuel, and decides where and how fast the ship steams. Therefore, it is claimed the owner has no or at least greatly reduced motivation to invest in fuel saving technology.The Bahamas in support correctly calls this a "key assumption" in the thinking of the IMO's Market Based Measures (MBM) working group. The MBM Working Group report repeatedly refers to "non-price barriers" which "restrict the uptake of fuel/energy operational and technical measures".
- Owners have the ability to pass through any increase in BFO cost to their customers in the form of higher freight or timecharter rates, therefore there's no point investing in saving. The Bahamian submittal puts it succinctly; "The high cost of fuel, although a significant factor, can be passed on through freight rates, or is paid by an external party and not the owner."2

This view is further supported by the fact that several influential studies have found that there is tremendous potential to cut fuel consumption at little or no cost by employing technologies that owners currently are not using. For example, the second IMO GHG Study 2009 said that CO2 emissions could be reduced 25% to 75% "....by using known technology and practices." 3

DNV claimed that measures exist which would reduce CO2 emissions from ships by 400 mill tonnes per year (about 26%), which have negative abatement costs, meaning if implemented, they would increase the owner's profits.4

Therefore, DNV was forced to conclude; "The results of this study indicate the lack of responsiveness to economics as a driving factor for change". This has become received wisdom at the IMO.

The term charter issue

Let's begin with the term charter issue. In any term charter, the shipowner must stipulate the ship's speed-fuel curve. The contract or charterparty then goes into considerable detail about what happens if the ship fails to perform up to the warranted fuel consumption. Basically, the owner pays for any fuel the ship uses above the charter party curve.

Prospective term charterers collect a batch of offers, each of which include not only a term charter rate but also a stipulated cargo capacity and a stipulated speed fuel curve. They run these offers through an analysis to determine which ship will meet their transport capacity at minimum cost. I operated large tankers for some 25 years and was involved in numerous T/C negotiations. I can assure you that speed/fuel was front and centre everytime. Here is a memo that I wrote to my troops in July, 2002. The memo was mainly in response to their moaning that our standard speed/fuel curves were unrealistic (translation: they had to work too hard to get the fuel consumption down to

these levels) But it also makes the point of the importance of speed/fuel curves in winning term charters. Note: The Empress des Mer was a 1976- built ULCC owned by a competitor.

Notice that in at least one example cited the ship with the lower term charter rate did not get the business.

TO: hsc_/ppd1, apb1, kis1
FROM: martingale/jack
RE: Consumption Curves in T/C description, Q88, MFIX etc
The speed-fuel curves in MFIX, T/C description, Q88 etc are,
ME + 1 gen + sludge under ideal conditions. That is:

1. A fuel with an NCV of 42,707 kJ/kg.
2. Calm water, no wind.
3. Perfectly clean hull and propeller.
4. Main engine operating right on spec. In MFIX, we adjust this curve for actual NCV using the FO_LOSS field.

We also adjust for expected weather and current by leg using the SPD_ADJ fields. This curve serves as an achievable target. If we don't meet it after properly adjusting for NCV and weather, then something is wrong and we must find out what and fix it.

We must not lower our standard.

In almost all T/C's, this curve will be too optimistic since it will be warranted up to Beaufort 5. But for T/C purposes we want to over-specify the ship.

When the potential charterers run our warranted curves through their algorithms to get equivalent unit ($/t) transport cost, they will find that they can pay us a higher T/C rate than if we gave then a more conservative curve.

Most long term charterers must go with the ship that gives them the lowest equivalent unit cost.

We will get more business at a higher TC rate. Of course, we will give some of that back in claims but the give back is always much less than the additional T/C revenue.

A classic case was the Embassy and Empress des Mer with Vela in 1990. The former using a conservative curve got $39,000 per day and paid no penalties, while the latter using a ridiculously optimistic curve got $41,000 per day and ended up paying $250,000 in penalties.

The additional T/C revenue over the 4.5 year charter was about $3.3 mill. Later the Empress finessed another ULCC Grand out of a one year KPC charter that, in a falling market, we desperately wanted. The brokers told us that the Empress was in at (from memory) $26,000 per day and firm. So we went slightly lower and firmed.

The business went to the Empress at the higher TCE. Later I found out from KPC that the competitor had over-specified the ship by more than a knot over calm water speed. We had only over-specified the Grand by using calm water.

The KPC chartering manager told me that the Empress' speed-fuel curves were "really sexy". We too have to be 'really sexy'. The memo goes on to further berate the poor recipients for not meeting our fuel consumpton targets.

The point of course is that term charterers know that for the length of the term charter they will be the effective owner of the ship and they want the cheapest ship for the fuel cost they expect to pay during the T/C.5 Owner shenanigans aside they will do their damndest to get her.

Fuel cost - a weak driver

DNV, the Bahamas, and much of the IMO hierarchy agree that fuel costs have been a disappointingly weak driver for fuel efficiency. But in my career as an owner, fuel costs have not only been a strong driver, they were the driver. We adjusted our steaming speeds almost weekly on the basis of the current spot rate and our BFO costs.

When the market was in boom, we were blasting along as fast as we could. When the market was in slump, we were going as slow as we could. We instituted all sorts of procedures to monitor fuel consumption, spent all kinds of time tuning the plants, hasseling the chief engineers when we were unhappy, etc and on occasion firing them.

The single biggest question we asked ourselves in specing new vessels is what was the BFO price going to be? One thing we did not worry about was whether or not the ship was going to be term chartered. In fact, in all the voluminous correspondence leading up to an eight ship, half-billion dollar programme in 1999/2000, the subject never came up. For we knew any efficiency we could gain would be reflected in the T/C rate.

Herein lies the fallacy in the Bahamian claim that the fact that savings in costs eventually get passed on to shippers, means that owners have little motive to economise. But this competing away of savings only happens after the great bulk of the owners have implemented the savings. At that point, any owner who has not kept up will go broke.6

Survival is very strong motivation for most people.

In the course of my career BFO went from $50 to $250 per tonne. And over that 30-year period, fuel consumption almost halved. The first ships I operated were 390,000 dwt ULCCs built in the late 1970's. They had a full speed fuel consumption of around 210 tonnes at 16 knots. The last ships I operated were 440,000 dwt ULCCs, which burned 121 tonnes at the same speed. The relative improvement at slow-steaming speeds was even higher.

The latter ships were designed in 1999/2000 to a BFO cost of a little over $100 per tonne. If I were building a ship today, I'd use a design fuel cost of at least $500 per tonne and probably higher, maybe as high as $750, depending on what I thought IMO was going to do. Like every owner, I would invest in any fuel reduction measure that I thought was going to improve my bottom line at that price.

In our 1999/2000 newbuilding programme, we surveyed all the possibilities. And we ended up installing 'over-sized' engines and generators at the cost of close to $2 mill per ship, in part because it allowed us to move down the engine's SFC curve toward the minimum SFC point (about 70% of MCR).7

We went through all the hydrodynamic devices, pre-swirl, post-swirl, etc. I became entranced with something called a propeller boss fin. The vendors claimed it would save 2% to 3% or more. You'll see the same numbers or higher in IMO documents.8 The device only cost $40,000 so even at $150 per tonne, all I had to do was save 300 tonnes of fuel to pay for it, less than three days MCR steaming for the ULCC. It seemed to me it might work, so I studied it carefully. However, the more I got into it the less support I found for the claims.

At the end of the day, I couldn't be sure if the gadget was going to save me fuel, or cost me fuel. We didn't invest in the boss fin, but it wasn't because we were stupid or lazy, or we were going to pass

the cost of the fuel on, or the ship was going to be timechartered. If the device gave us a competitive advantage, we would get the savings.

So we have a disconnect. I claim owners will jump on anything that they think will make them money. IMO and others believe the owners are "unresponsive to economics".

There are two reason for this dichotomy:

1) The potential savings are grossly exaggerated.

Much of the savings that some IMO studies point to simply don't exist, or are unproven, unsafe or not economic even at today's BFO price. Take all the propeller flow modification devices. Most of them have been around for 20 years or more.

The problem is separating vendor claims from actual performance. Model tests are indicative but not quantitively reliable for these devices both because of scale effects and the artificial conditions in the towing tank. Full scale tests are even harder.

If a device does save a percent or two, it will be almost impossible to see in any but long term, carefully monitored experiments. Speed goes as power to the 1/3 or less. So a 3% saving will show up as less than a 1% increase in speed at a given power. This is difficult to measure under the best of conditions. But to make matters much worse, we almost never have the best of conditions. The savings, if they exist, will be dominated by all sorts of other variables, including loading pattern, hull and propeller condition, and weather. To do the necessary experiments to really determine the savings would be a very expensive proposition; so they are simply not done. We are left with vendor claims and anecdotal evidence.

Despite this, in something of a leap of faith, owners are investing in some of the more promising devices. Some 80 vessels have been built with the Kawasaki rudder bulb system, a post-swirl device. Others have fitted pre-swirl devices. If these gadgets really work, the word will get out and the owners will be happy to pay for them. But if the savings were anything like what IMO studies sometimes claim, this would already be obvious.

Other technologies that are offered as evidence of owner unresponsiveness are either imprudent, or unproven. 10 Contra-rotating props fall in the imprudent category at least for single screw ships. There is little doubt that a properly designed contra-rotating propeller could save at least 8% on most ship types. For a VLCC the extra initial cost will be around $2 mill, for a payback of less than a year at full power. Unfortunately, contra-rotating props require complex epicyclic gearing and inter-shaft bearings.

They are inherently far less reliable than a standard VLCC shaft and propeller and would be a maintenance nightmare. No prudent owner could spec contra-rotating props on a single screw tanker. Yet most IMO studies blithely include contra-rotating props in their lists of potential savings, usually with a number like 12%, or 14%. Clearly, unproven technologies, such as air cavities, are also included in most lists, often with an unsubstantiated savings of 15%.10

When you take a realistic look at fuel savings measures, as owners must, the savings are far smaller than IMO thinks and more expensive. greenship.org, a group that generally takes an optimistic view of the potential for vessel emissions reductions, studied a 35,000 dwt drybulk carrier to which they fitted just about every device applicable and ended up with a 7% decrease in CO2 emissions.at an additional cost of about $5 mill, or 20% of the current newbuilding price.12

When Green Ship repeated this exercise for an 8,500-TEU containership, they came up with a savings of 11% to 14% at a cost of €10 mill (about 10% of current newbuild price).

2) The 10 to 20 year newbuilding lag.

Much of the prudent, feasible, economic savings that do exist have a 10 to 20 year lag before they are fully implemented in the fleet.

For example, advanced waste heat recovery (WHR) is now clearly economic on a large tanker. For an investment of about $1.3 mill, it is possible to extract enough energy from the cooling water and stack gas to support a 1,000 kW generator. For a VLCC the savings in fuel is four or five tonnes per day. At $500 per tonne, a pay back period of less than two years.

Systems installed

Owners are now flocking to install these systems on their newbuildings. In August, 2010, Wärtsilä counted 81 large vessels, including 33 VLCCs that have ordered Wärtsilä 's version of WHR.12.

The problem is that this sort of investment only works for newbuildings. The really big jump in BFO prices took place in 2005 through 2007, which means that the effect will not start showing up in the fleet afloat until 2007 to 2009 and will take 20 plus years before the fleet is fully made up of VLCC's with advanced WHR. To put in another way, much of the negative abatement cost reductions identified by DNV and others actually do exist; but only since the big BFO price jump starting in 2005. Owners are responding to this jump in fuel cost about as quickly as they can.

The polite bureaucratese talks about "lack of responsiveness to economic conditions" and the like. Of course, what they are really saying is charterers and owners are too stupid to run their enterprises in an intelligent manner. I ran big tankers for 25 years. I know term charterers are not stupid; they know the difference between a fuel efficient ship and one that is not. I know owners aren't stupid. I know they try to search out every fuel saving that makes sense.

Hero or villain?

As an employee, you want to be a hero to a shipowner? Save him some fuel and marry the owner's daughter. We can have a valid debate about the best way to regulate CO2 emissions from vessels. But that debate must not be based on misconceptions. The belief that owners and charterers are unresponsive to fuel cost is a misconception.

*This is an extract from a paper written by Jack Devanney of the Center for Tankship Excellence. The full paper can be found at http://www.c4tx.org/ctx/pub/

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Footnotes:

1. Need and Purpose of an MBM, GHGWG 3/2, 2010-12-22, submitted by the Bahamas, page 1
2. i bid, page 2
3. Second GHG Study 2009, MEPC 59/24/Add. 1, 2009-04-09, page 10
4. Det Norske Veritas, Pathways to Low Carbon Shipping, 2009-12-15
5. Another misconception that sometimes surfaces at the IMO is that a term chartered ship won't slow steam as much as a ship in the spot market, especially if the TC rate is high. It turns out that a term charterer faces exactly the same short-run optimization problem in minimising transport costs as a spot owner does in maximising profits. See 2. The Impact of Bunker Prices on VLCC Rates for a proof. From the point of view of the charterer's speed decision, the TC hire is a sunk cost.

6. This is the core reason competitive markets are efficient. The Bahamian statement shows little understanding of how competitive markets work. The same thing can be said of much of IMO's deliberations on CO2 reduction.
7. EEDI will effectively prohibit owners from doing this.
8. Second IMO GHG Study 2009, page 172 says 4%.
9. Stangely the most exciting and impactful recent technology is almost never mentioned, and that is the switch from camshaft to electronically controlled main engines. Not only does this result in a flatter SFC curve but more importantly allows ships to operate down to 20% power continuously. Camshaft controlled engines can only operated down to about 50% power. For tankers, this means that, when the market is in deep slump, we will have the entire fleet operating at 9 knots, rather than 75% of the fleet operating at 12 knots, and the other 25% laid up.
10. Most such lists also include "speed reduction" as a CO2 abatement measure, often with a 25% savings number. Slow-steaming is not a measure; it is a reaction. The reaction depends on the current fuel cost, spot rate and the ship's speed/fuel curve. It's happening all the time. If you want more of it, simply increase the owner's fuel cost.
11. Schack, C, Green Ship of the Future, Asia-Pacific Maritime, Singapore, March, 1010.
12. Antonopoulos, D, Ship Power Merchant, August, 2010.

March 2011 • TANKEROperator Annual Review

Inséré le 24 juin 13 Boeken Livres Enlevé le 24 juillet 13

Skipper's Mast and Rigging Guide

B O O K R E V I E W By : Frank NEYTS.

Adlard Coles Nautical issued 'Skipper's Mast and Rigging Guide', written by René Westerhuis. The 'Skipper's Mast and Rigging Guide' is a new title in a series of laminated cockpit guides that are designed for easy reference on board in all weather conditions. Of all the elements that are hard to set up on a sailboat, gauging how mast, running rigging and standing rigging should work in combination with each other is perhaps the trickiest of arts – some might call it a black art. And of course it is essential to get it right in order to stabilize the mast, reduce undue stress and consequently ensure the safety of everyone on board.

This handy cockpit guide will simplify and explain to the reader exactly how to set up their mast, rigging and running rigging for whatever size of yacht and with whatever rig combination. It will take the reader through the basics of setting up and adjusting their rig step-by-step with helpful diagrams and detailed colour photographs throughout. With this book in one hand and a spanner in the other, skippers will be able to make their own adjustments without having to call in expensive riggers. René Westerhuis has written several practical books on sailing subjects, most recently a similarly handy guide to using radar. "Skipper's Mast and Rigging Guide" (ISBN 978-1-4081-8798-2), is a softback of 25 pages and costs £12,99. The book can be ordered at any bookshop, or direct with the publisher, Adlard Coles Nautical, 38 Soho Square, London W1D 3HB,UK. www.adlardcoles.

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Inséré le 26 juin 13 NEWS NOUVELLES Enlevé le 26 juillet 13

MSC Belgium makes port of Antwerp more secure

Criminals are constantly on the lookout for new ways to steal, not least in ports. **MSC Belgium** is the first ship's agent to introduce a new container release system that enables customers to collect their containers quickly and efficiently in a secure environment. MSC Belgium sees the new system, rolled out on 8 May, as the first step towards making the port 100% secure, said in the press release. Collecting containers in the port of Antwerp is now a good deal more secure. The advanced container release system offered by MSC Belgium enables users to log in to an independent, secured portal website. Customers deal with an independent partner who is also a leading expert in data management and data security. Not until they are correctly logged in to the website are they given all the information necessary to collect their containers. The logging in process includes an additional identification step supported by Microsoft, making everything as secure as possible so that criminals have less opportunity to go about their nefarious business.

*Good old **MSC MARIA LAURA** returned to Antwerp at the end of her career. She was built as **CGM LA PEROUSE** in 1988 at the Samsung shipyard. **Photo : Adri de Schipper ©***

A further advantage of this system is that customers of MSC Belgium can see at all times which containers have been assigned to them, together with the status of the containers. Along with other functions this makes the new container release system a future-oriented tool for the day-to-day business of Belgian companies.

But MSC Belgium is fully aware that the fight against crime in the port will not be won with the introduction of this innovative system alone. This is merely the first step in a programme of ongoing investment to make the port 100% secure, according to the company. The new system is available as of 8 May. Customers of MSC will be able to carry on using the existing system until 10 June, so giving them a month in which to get used to the new system.

PSA Antwerp is fully behind this initiative and is providing all necessary technical and operational support to roll the system out more widely within the port. Security, efficiency and transparency are key for PSA Antwerp too, as the largest terminal operator in the port.

Antwerp Port Authority is very enthusiastic about such initiatives by private company, as it too has made the fight against organised crime a priority. “This is a positive development for the port community and for the reputation of the port of Antwerp,” according to a Port Authority spokesperson. Indeed the Antwerp Port Community System (a joint venture by the Port Authority and Alfaport Antwerpen) has been collaborating for several months now with the companies involved with a view to offering this technology throughout the port. The preparations for this are now nearing completion, and the technology will shortly be implemented generally in the port of Antwerp under the name of “import services release module.” Several companies have already given formal confirmation that they will join the system.

MSC Belgium NV was set up in Antwerp in 1979 and has since developed into one of the largest employers in the port. MSC Belgium is a “leading agent” for the Geneva-based Mediterranean Shipping Company (MSC). With a hinterland of 300 million consumers the port of Antwerp is of great strategic importance for MSC.

PSA International is one of the world's leading players in container handling, with terminals in Asia, Europe and America. PSA Antwerp is the group's largest investment outside Singapore. PSA Antwerp operates five container terminals in the port of Antwerp: The Deurganck, Europa and Noordzee terminals below the locks, and the MSC Home Terminal (50/50% joint venture with PSA) and the Churchill Terminal above the locks.

Inséré le 28 juin 13 OPEN FORUM Enlevé le 28juillet 13

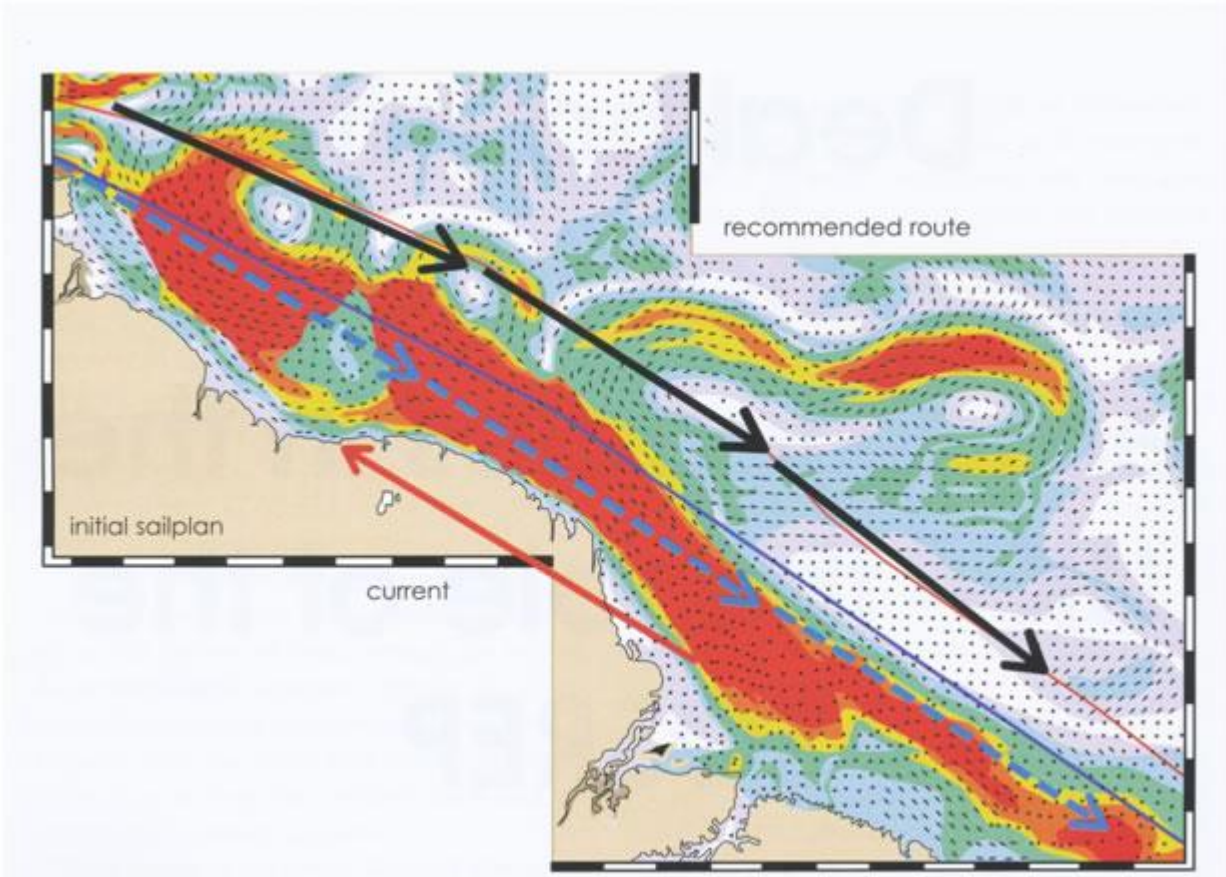
Saving fuel by surfing on real-time ocean surface currents

Using oceanographic data from satellites and recommendations from experienced ocean forecasters, shipping companies can optimise their vessels' routes by Remi Boissel Dombreval

Until now, vessel captains only had information on monthly averaged surface currents to help them choose the best current veins. These monthly charts (called pilot charts) were created more than 30 years ago based on captains' observations while navigating on maritime routes. The information is therefore very sparse and not accurate. Nowadays, through the use of data from satellite altimeters, oceanographers have the required expertise to help captains to choose their routes based on favourable real-time currents.

Surfing on surface ocean currents allows vessels to go faster while navigating at constant power (constant rpm) . It also allows a vessel to navigate at a reduced motor speed (reduced rpm) while meeting a required time of arrival. The use of real-time currents can cut times by 1-2 hours per day, leading to reductions in fuel consumption. Over the course of the year, these savings in time and energy have a significant impact on a company's bottom line and on the marine environment.

CLS (Collecte Localisation Satellites), a French Company specialising in satellite-based ocean services, is developing a new service relying on the knowledge of real-time and forecasted surface currents. Data derived from satellite observation (mainly of sea level, from Jason 1 and 2 and Envisat radar altimetry satellites) and ocean forecast modelling are used to calculate the best-current route, i.e., the quickest route to reach the arrival port. Input parameters supplied by the captain for the calculation are: departure and arrival port, planned route (way points), a given ETD (estimated time of departure) and the vessel calm-weather speed. The route takes advantage of real-time ocean currents while taking account of the extra distance associated with the route. The best-current route is therefore the best compromise between favourable currents and distance. These innovative techniques that have been successfully tested with several major maritime companies. Scientists and engineers at CLS have worked with vessel captains to study and qualify the benefits of using ocean observation products for marine transportation.



A planned route, from north to south and against the current, is shown in blue; the route

On every route monitored during this test phase, when the vessel followed the recommended route and surfed on advantageous currents, significant savings in trajectory time were established. These gains in time were also converted into significant fuel savings.

In the above image, the planned route -from north to south - (in blue) was set to go against the current. The route recommended by CLS (in black) takes advantage of the good side of two current eddies and avoids the strong current vein of the Brazilian current. By taking the recommended route, the captain saved approximately 20 hours for a voyage that lasted approximately 13 days. This gain represents 7 per cent of the duration of the voyage.

AVERAGE ANNUAL FUEL CONSUMPTION AND CO_2 EMISSIONS					
average economy per year	average consumption (tonnes/day)	average of % gain of total duration	average fuel saved (tonnes/year/vessel)	average CO_2 saved (tonnes/year/vessel)	average economy (US$/year/vessel)
low-benefit area	40	0.6	43	140	$19,350
medium-benefit area	40	1.7	124	404	$55,800
high-benefit area	40	4.0	291	930	$130,950

General figures for fuel savings

Current optimisation always produces benefits but depends on the area crossed. On a global scale, the average saving is 1.8 per cent but can be as high as 8 per cent in favourable areas. We have classified three types of route:

- low-benefit area: Europe, Mediterranean, West Africa, north India

- medium-benefit area: North Africa, south India, South Africa, north Atlantic
- high-benefit area: Gulf of Mexico, Brazil, south Atlantic, north Pacific.

For example, for a vessel navigating for 182 days in a year and with a fuel price of $450/tonne, the table below shows the benefits of various vessel routes.

Conclusion

More and more attention is being given to 'green shipping' . This new CLS service may be one of the technological responses shipping companies can take if they are concerned about economic and environmental sustainability. IFSMA

Inséré le 30 juin 13 OPEN FORUM Enlevé le 30 juillet 13

Shipping confidence reaches highest level for two and a half years

Overall confidence levels in the shipping industry rose to their highest level for two and a half years in the three months ended May 2013, according to the latest Shipping Confidence Survey from international accountant and shipping adviser Moore Stephens. The survey produced evidence of increased enthusiasm for new investment, although doubts persisted about the availability of bank finance. Fuelled by ongoing concern about a surfeit of tonnage on the market, freight rates in the dry bulk sector in particular were expected to come under more pressure over the next twelve months, although the outlook for the tanker markets looked more encouraging.

In May 2013, the average confidence level expressed by respondents in the markets in which they operate was 5.9 on a scale of 1 (low) to 10 (high), compared to the figure of 5.8 recorded in the previous survey in February 2013. This is the highest figure since the 6.0 recorded in November 2010. The survey was launched in May 2008 with a confidence rating of 6.8. The confidence rating for owners was unchanged at 5.7, while that for brokers was up from 5.6 to 5.9, the highest figure since November 2010. Confidence on the part of managers and charterers, however, was down to 6.0 and 5.5 respectively, from 6.2 and 6.0 in February 2013. Geographically, confidence in Asia was up (from 5.6 to 5.8), unchanged in Europe at 5.8, and down in North America from 6.1 to 6.0

A number of respondents felt that there were positive signs that a recovery was under way. One said, “The shipping market is dynamic in nature, and we are starting to see signs of exponential growth,” while another predicted with great confidence, “The shipping markets will continue growing over the

next fifteen years!" Elsewhere the predictions were less expansive, ranging from, "The market will recover in 2014," to, "Overall, we believe that 2013 will end up better than last year, and 2014 will show further improvement, even if some niche markets may not be able to maintain their current rate of growth." Other respondents, meanwhile, continued to express concern about a surfeit of tonnage in the market. One said, "As soon as there is any hint of a sector with positive potential, owners run to the yards and start ordering" while another noted, "New orders need to be halted for two years in order to correct the over-supply situation."

Elsewhere it was noted, "There are still too many owners ordering new vessels which will hit the water in the next two years. If we are to believe estimates that the world's shipyards turned out five times as much tonnage in 2012 as they did in 2005, it is clear that the problems are far from being solved." Another respondent commented, "Newbuildings from China are still being delivered, and that will doubtless continue because the yards are major employers of local labour and huge consumers of indigenous steel and other raw materials." And it was not just China which was referenced in this context, with one respondent pointing out, "There are competitive prices on offer for newbuilding orders, even from Japanese shipyards." Another respondent predicted a continuing over-supply of tonnage in all sectors except those below 20,000 dwt, adding, "Too many larger ships continue to be ordered and delivered due to perceived low newbuilding costs, but these deals do not come close to making sense based on current market returns." Despite significant increases in scrapping levels in the past eighteen months, a number of respondents felt that much more still needed to be done. "The level of new ordering is alarming," said one, "particularly as some reports suggest that rates of scrapping may now be slowing down again. At current levels the fleet will continue expanding into 2014 and 2015." Another respondent said, "The industry faces significant increased costs in terms of meeting new regulations over the next few years and, given the lack of available finance, this may accelerate the scrapping of older vessels, particularly those coming up for their fourth survey, but this is unlikely to be sufficient to get the industry out of the over-supply hole it finds itself in." One respondent said, "We are increasingly pessimistic about the ability of smaller, privately owned European-based shipowners to compete in the main non-niche markets due to lack of scale and financial muscle, as well as evidence of protectionist practices which render certain trades inaccessible." Elsewhere it was noted, "We have some way to go before we can expect to see any improvement in freight rates, especially if a new wave of cheap, fuel-efficient ships is ordered for 2015 onwards."

Regulatory demands featured in the responses from a number of respondents, with one commenting, "The increasing burden of regulation, and the desire on the part of Brussels to be more proactive in its control of what is a global business, is likely to lead to a large number of marginal players exiting the market completely. Whether this will be sufficient to accelerate a return to a better supply/demand balance remains to be seen." the cost and availability of bank finance was uppermost in the minds of a number of respondents. "If the banks do not improve their funding resources," said one, "shipping will remain depressed for years to come." Another commented, "The

banks are not willing to invest in older ships." This was a view echoed by the respondent who remarked, "We have looked at several secondhand ship purchase deals which appear to be good enough to replace older tonnage, but our main lending bank is still not willing to finance them, even with high un-mortgaged equity values within our business able to back the loans." Elsewhere it was noted, "The banks are behaving illogically, and their lack of support frustrates the shipping industry."

Generally speaking, respondents were more positive than for some time with regard to the state of global and national economies. One said, "The US economy is slowly starting to recover, which will impact positively on demand and on freight rates, plus the likelihood of interest rates remaining unchanged for a few more years will serve to stimulate the market." The likelihood of respondents making a major investment or significant development over the next twelve months was up marginally on the previous survey, on a scale of 1 to 10, from 5.5 to 5.6 – the highest level since the 5.7 recorded in February 2011. Owners (down two points to 5.7) were the only category of main respondent to show a fall-off in expectation in this regard. Both charterers and managers, meanwhile, recorded an increased expectation (each from 5.7 to 6.0) of making new investments over the coming year, a view shared also by brokers (up from 4.8 to 5.2). The percentage of owners who assessed the likelihood of their making an investment at 7.0 out of 10.0 or higher was up by one percentage point to 45 per cent, while the number of charterers who thought likewise was also up by the same margin, from 46 per cent to 47 per cent. Meanwhile, 45 per cent of managers rated the likelihood of their making a new investment over the next twelve months at 7.0 out of 10.0, or higher.

Geographically, expectation levels of major investments were up in all the main geographical areas covered by the survey – in Asia, from 5.4 to 5.5, in Europe from 5.5 to 5.6 (their highest level since February 2011), and in North America from 4.9 to 5.9. One respondent noted, "Regulatory demands on shipping are such that the industry cannot cope with large investments in a financially tight market. Trust in shipping in general is low, given the market sentiment.

Demand trends, competition and finance costs once again featured as the top three factors cited by respondents overall as those likely to influence performance most significantly over the coming twelve months. The overall numbers for demand trends were down one percentage point to 22 per cent, static for competition at 20 per cent, and unchanged also in the case of finance costs at 16 per cent. Tonnage supply (down one percentage point to 12 per cent) featured in fourth place, ahead of operating costs (up two percentage points to 11 per cent), and fuel costs, which were one percentage point down on last time at 10 per cent.

Demand trends remained the number one performance-affecting factor for owners, although down by one percentage point to 21 per cent. Competition featured in second place at 18 per cent (up from 15 per cent last time), followed by finance costs, up one percentage point to 17 per cent. Tonnage supply, having featured in second place in terms of owners' priorities last time, was down by two percentage points to 16 per cent. For managers, meanwhile, competition, although down from 20 per cent to 18 per cent, still featured in equal first place with demand trends (down one percentage point to 18 per cent), followed by finance costs, down from 17 per cent to 16 per cent. For charterers, demand trends, while down by five percentage points to 24 per cent, took over first place from competition, which was down from 31 per cent to 17 per cent. Finance costs featured in third place, with 16 per cent.

Geographically, demand trends were the most significant factor for respondents in both Asia and Europe (up by three percentage points in Asia to 23 per cent but down in Europe from 24 per cent to 22 per cent.) Competition and finance costs, in that order, made up the top three performance-affecting factors in both Asia and Europe. In North America, meanwhile, competition featured in first place (up eight percentage points to 28 per cent), followed by demand trends, where there was a fall from 38 per cent to 26 per cent, and operating costs, at 11 per cent. Operating costs were referenced by a number of respondents. One said, "Owners who are in a position to control fuel costs by operating very efficient vessels, with highly skilled crews, will be at a clear advantage," while another expected "further shortages of well-qualified and experienced crew, and an increase in their salary demands."

There was a three percentage-point fall (from 40 per cent to 37 per cent) in the number of respondents overall who expected finance costs to increase over the next twelve months. This is the lowest figure in the life of the survey to date. The number of respondents expecting finance costs to come down, meanwhile, reached its highest figure (11 per cent) since November 2010. Owners were the only main category to record a fall in the numbers of respondents expecting an increase in finance costs (down from 37 per cent to 32 per cent). The figure for charterers was unchanged at 50 per cent, while for managers and brokers it was up 3 and 6 percentage points respectively, to 44 per cent and 38 per cent. The number of respondents in Asia anticipating an increase in finance costs was up by 2 percentage points to 40 per cent compared to last time, but the corresponding figure for Europe was down from 39 per cent to 32 per cent. In North America, meanwhile, 52 per cent of respondents thought that finance costs were likely to rise, compared to 42 per cent previously.While the majority of respondents bemoaned the lack of available, affordable finance, one respondent noted, "Shipowners appear to be resorting more frequently to bond financing, and it seems that these investors are looking through rose-tinted spectacles when it comes to assessing the future and are prepared to support owners in this respect."

Turning to freight rates, it was the tanker markets this time which generated the most positive comments.

The number of respondents overall who expressed an increased expectation of higher rates in the tanker sector over the next twelve months was up by two percentage points to 37 per cent – just one percentage point below the figure recorded when the survey was launched in May 2008, but some way short of the survey high of 50 per cent posted in May 2010. Owners (up five percentage points to 41 per cent) led the way in terms of increased expectations of better rates, while charterers unsurprisingly set their sights much lower, at an unchanged 29 per cent. The number of managers expecting improved rates was meanwhile down by one percentage point to 31 per cent. Geographically, the prospects for increased tanker rates were deemed lower this time by respondents in Asia (down from 33 per cent to 31 per cent) and in North America (down by 23 percentage points to 24 per cent), but higher in Europe, up from 36 per cent to 40 per cent. In the dry bulk sector, meanwhile, there was a 10 percentage-point fall, from the highest figure in the life of the survey three months ago to 40 per cent this time, in the overall numbers of those anticipating rate increases. All the indicators were down – in the case of owners from 50 per cent to 43 per cent,

managers (52 per cent to 36 per cent), charterers (60 per cent to 48 per cent), and brokers (44 per cent to 32 per cent). It was the same story from a geographical perspective. In Asia, expectations of higher dry bulk rates fell from 52 per cent to 33 per cent, in Europe from 51 per cent to 44 per cent, and in North America from 65 per cent to 35 per cent. One respondent said, “The dry bulk market is in crisis and will remain so in the small-to-medium size sectors for at least two more years due to overbuilding.” Another noted, “The dry bulk market is structurally unhealthy due to the massive overbuilding of vessels.” Others were more optimistic however, with one claiming to be hopeful that dry bulk rates will soon improve due to an improved balance between supply and demand.

In the container ship market, there was an eight percentage-point fall, to 26 per cent, in the overall numbers expecting rates to go up. Indeed, expectation levels in relation to rate increases were down across all categories of respondent, most notably in the case of brokers (by 25 percentage points to 19 per cent). Meanwhile, 26 per cent of owners (compared to 36 per cent last time), 28 per cent of managers (down 5 percentage points on last time), and 38 per cent of charterers (down from 47 per cent last time) expected container ship rates to rise in the next twelve months.

Geographically, expectations of improved container ship rates were unchanged in Asia at 24 per cent, just one percentage point up on the numbers in that part of the world who are expecting container ship rates to go down over the next twelve months. The numbers anticipating higher rates were also down in Europe, from 38 per cent to 29 per cent. In North America, meanwhile, the 39 per cent of respondents expecting container ships rates to fall over the coming year was more than double the number (17 per cent) who though they would increase. One respondent said, “In the container ship sector, the long-haul market sentiment is very bleak, with continued deliveries of mega tonnage and ongoing weak demand in the main western trades.” Another claimed, “The container ship fleet will grow by eleven per cent this year. Everybody seems to think that ever bigger ships are beautiful.”

Moore Stephens shipping partner, Richard Greiner, says, “For the third successive quarter, we have seen a small increase in confidence. This encourages the belief that we are witnessing the start of a sustainable recovery, although some difficult issues remain to be resolved. “Despite increased scrapping, it is clear that there are still too many ships on the market. For as long as that situation persists, the freight markets will struggle to bounce back. Although the tanker market is looking healthier than it has for some time, the dry bulk trades in particular seem to be suffering from an over-supply of tonnage.

“Owners’ appetite for new vessels has not, it seems, been terminally affected by five very difficult years for the shipping industry. Some reports suggest that current newbuilding business is almost one thousand per cent up on last year, with Greek owners alone having reportedly ordered almost twice as many ships in the first four months of 2013 as they did in the corresponding period last year. This is not a complete surprise.

Our survey revealed evidence of an increased enthusiasm for investment, and the history of shipping confirms that it is an industry which is not reluctant to spend money. “Increased newbuilding activity is also somewhat inevitable, not least because of the strong state support which governments in the Far East are providing to their strategically important shipbuilding industries. Neither is it a bad thing. Every industry needs new investment to survive, and if that is coupled with regulatory and environmental compliance – for example, in the shape of eco-friendly ships – then so much the better.

“If pulling the plug on newbuilding activity is not the way to resolve shipping’s problems, the answer must lie with addressing the issues which seem to militate against solutions built on new investment. We need more scrapping, for example, and fewer proposals such as the one currently before the European Parliament to ban the beaching of vessels for demolition. We need a more innovative approach to securing finance, embracing everything from bond financing to leasing, as well as the ability to convince potential investors of the credibility of business plans. We need a more concerted focus on risk management, which is not as well developed in shipping as it is in many other industries. And we need early identification of the need for restructuring, and awareness of the options available in that connection. “Shipping is in reasonably good shape, given the problems it is

facing. Indeed, it is difficult to think of another industry which is so capital-intensive in nature, so reliant on skilled personnel, and so heavily impacted by competition, politics, risk, protectionism, and regulation, yet able to remain optimistic in the teeth of a global financial downturn. Three months is a long time in shipping, but it is to be hoped that our next survey will complete a full twelve months of improving confidence. Shipping is an industry in which long-term investments have tended to bring long-term rewards. As such, it is worthy of a long-term outlook."

Inséré le 02/07/13 HISTORIEK HISTORIQUE Enlevé le 02/08/13

Juni 40, een op 't nippertje ontsnapping uit Frankrijk

Door ex-Loods Scheldemonden J.C. Böting

Inleiding

Het relaas van onze loodsboot's ontsnapping uit Frankrijk waartoe ik aangespoord werd om toch maar de achtergrond van 'n triestig oorlogsfeitje bekend te maken is gesteund op mijn persoonlijke herinneringen.

Wegens het vernietigen van het scheepsjournaal van Motorloodsboot 16 heb ik mij moeten betrouwen, wat de data betreffen, op het werk « Les Ancêtres de notre Force Navale » door L. Leconte (Editions Ministère de la Défense Nationale 1952). Ik had trouwens destijds aan de Heer Leconte inlichtingen verschaft aangaande de verrichtingen van het Marinekorps.

type (genummerd 13, 14, 15 & 16) op loodspost in de Noord zee

Het zou mij ten zeerste spijten mocht de inhoud de indruk geven van enige afkamming van mijnentwege ten opzichte van het Marinekorps. Zulks is zeker niet mijn bedoeling jegens die in 1939 in aller haast uit de grond gestampte militaire marne waarvan bepaalde eenheden prachtig bijdroegen tot de inscheping van de British Expeditionary Force uit Duinkerken.

Het komt er voor mij enkel op aan de gemoederen van de bemanningsleden van loodsboot 16 aan te tonen omdat ze zich voeden meegesleept in een avontuur dat ons ging afscheiden van onze families in Engeland.

Daarom heb ik met opzet bepaalde bijzonderheden van mijn relaas vergeleken met historische feiten uit geciteerde a posteriori werken ten einde de uiteenlopende voornemens, qua gewenste bestemming, vanwege de verschillende passagiersgroepjes te belichten.

Motorloodsboot 16 behoorde tot het Loodswezen Scheldemonden, standplaats Oostende, netto 53 t., 451 t. gros, motor 1.000 Pk, gebouwd te Emden in 1930 en beschikte over 8 loodsenkajuiten elk met 4 kooien. Het schip had Oostende op 19 mei 1940 verlaten met zowat 160 vluchtelingen die de volgende avond te Folkestone ontscheept werden.

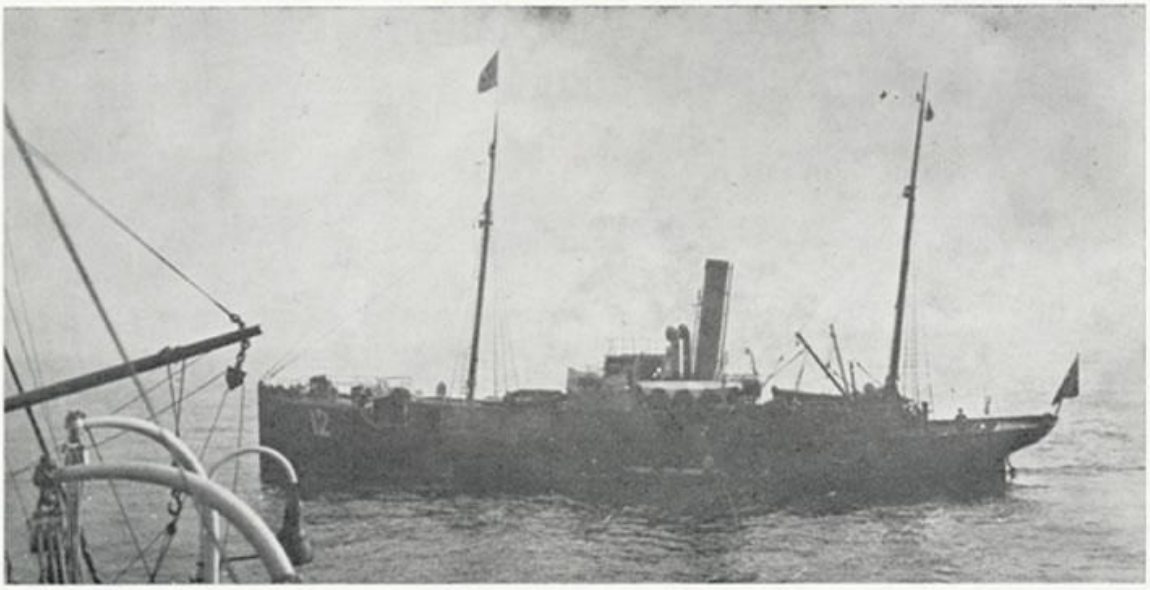
Lorient 18 juni 1940. Geluk van God zijn we buitengaats... ***1*** maar tegen wil en dank achter dat Marinekorps. Wat heeft die majoor toch ook in zijn bol gekregen om zijn stelletje in Frankrijk te willen reorganiseren wanneer het reeds voor de hand lag dat zo'n zaak spaak zou lopen ! Maar ja, hij hoort tot een van die Corps des Torpilleurs et Marins overgebleven officieren en was precies niet gesteld op de engelsen die hem trouwens met gelijke munt terugbetaalden. Dat hebben we in Dartmouth genoeg kunnen vaststellen.

Nu zijn we aan zijn lot gebonden met dat vijftigtal onderofficieren en manschappen die we willens nillens hebben moeten aan boord nemen en zulks dan nog toegestaan door onze felle bestuurslieden in Londen die ons zo maar eenvoudig ter beschikking van het Marinekorps gesteld hebben. De hele zaak kwam er tenslotte op neer ons met 'n partij mannen te belasten die men ergens uit een interneringskamp te Tenby gehaald had. Vanzelfsprekend konden en wensten de scheepscommandanten van het Korps die lui niet aan boord te krijgen. Daarom moesten we nog zes van ons eigen matrozen ontschepen om meer plaats te maken. Dat ze ons van dienst zouden zijn hebben we maar vlug vastgesteld... je kunt ze aan 't roer niet eens betrouwen ! En tot ons groot spijt hebben we daarvan niets schriftelijk. Zowel opdracht als belofte naar Dartmouth te mogen terugkeren zodra de mariniers te Lorient ontscheept zijn werden mondelings gegeven ! ***2***

Tenders (nr. 1 & 2) moterloodsboten gebruikt voor heen en terugbrengen van loodsen tussen het Belgisch Loodswezen te Vlissingen (of Oostende) naar/van de loodsboten op Noordzeeposten, ook gebruikt voor herproviaadering van loodsboten op post en lichtschepen.

Wat waren we toch belachelijk met ons drieën, schipper Nierynck, chief Verkempinck, nog naar het belgisch consulaat te gaan lopen in de hoop aldaar orders te mogen ontvangen om naar Dartmouth terug te keren. Tussen dat rommelzooi vluchtelingen hebben we er zelfs de kans niet gekregen om met iemand te spreken. We hebben het maar al te goed begrepen als die franse ruiterij in alle vaart door de straten stormde terwijl de inwoners riepen dat de duitsers op komst waren. Dan maar terug aan boord om daar bevel te krijgen onmiddellijk af te varen. Een kijk op het marinearsenaal spoort trouwens niet het minst aan om nog langer in dat valstrik te blijven... hier staan er al gebouwen in lichte laaie... elders haalt men goederen uit... dronken soldaten, het ellendig schouwspel van een land dat ten onder gaat. ***3***

Enfin, we kruipen zuid aan achter de A 4 die de admiraals' wimpel voert in top en met al de moeite van de wereld zijn 7 of 8 knopen eruit haalt terwijl wij het gemakkelijk 10, 11 en zelfs tot 12 zouden kunnen opdrijven indien nodig. Met Decrop en onze enkel overblijvende matroos Klausing lossen we ons af aan het roer. Ten anker gekomen op de buitenrede van Le Verdon op ongeveer 3 à 4 mijl ten westen van de Girondemonding ligt er veel volk met ons. Cargoschepen, kustvaarders... en tot wonder andere eenheden van het Marinekorps die sedert hun afvaart uit België hier aangekomen zijn na rond heel de franse kust gesukkeld te hebben. Daar ,komt onze tender 1 met 'n grote T 1 geschilderd op de boeg ons praaien... maar wie hebben we daar nu aan boord... mijn vroegere scheepsmaat van de tankers en collega hulploods Jan Laureys ! Hij is de stuurman van Rascar, ook een van de lange omvaart, eveneens in Frankrijk door het Marinekorps gemobiliseerd. Met z'n tweeën zijn ze glorieus tot onderofficier gebombardeerd ! Ze komen ons « au revoir » en het beste wensen alvorens verder naar Le Verdon te gaan om burgerpassagiers te ontschepen.



Stoomloodsboot (SLB) van de oudere type hier afhaalkotter voor Westgaande schepen aan de Wandelaar tevens loodspost voor schepen bestemd Zeebrugge en Oostende die overtallige loodsen laat overbrengen naar een MLB.
Het is uit dit type dat de Landsverdediging loodsboten opgevorderd heeft voor bewapening voor eenheden van het Marinekorps te dienen (1938/39).

's Namiddags van de 19e komt Luitenant Graré aan boord. Die is commandant van de eskadrilje Zeebrugse visbakken opgevorderd door het Marinekorps. Wij begrijpen algauw dat hij ons komt polsen over wat we gaan doen. Voor ons is het zo klaar als pompwater. Wij willen terug naar Engeland waar iedereen onder ons ten minste één familielid heeft moeten achterlaten. Maar met die herriemakende partij mariniers is het niet denkbaar daaraan te beginnen. Het is toch duidelijk dat er onder de omstandigheden voor ons geen sprake kan zijn om zo maar koers te zetten naar Engeland. Zij hebben wapens, wij niet. Bovendien hebben we als burgerlijke agenten geen gezag over dat stelletje. Het is trouwens daarom dat op ons aandringen wij in Dartmouth een officier van het Marinekorps, Luitenant Gonze, aan boord gekregen hebben. Graré zegt dat hij ook graag Engeland zou willen vervoegen en vraagt of wij deze avond aan boord van de P 13 (MLB 13 ook in Frankrijk opgevorderd) zouden willen komen. Commandant Van Strijdonck, aan wie wij onze wens zouden kunnen meedelen is daar in bevel. Graré is ervan overtuigd Commandant Van Strijdonck te kunnen overhalen dat het nu noodzakelijk is geworden iedereen vrij te laten.

's Avonds ga ik dank onze motorwerkboot aan boord van de P 13 met de zegen en wensen voor goede uitslag vanwege schipper Nierynck. Gesteund door Luitenant Gonze wat de uitleg over de geestestoestand van onze Marinekorpsmannen betreft, verklaar ik bevoegd te zijn om in naam van de loodsschipper en ons allen te spreken en dat wij de uitdrukkelijke belofte kregen van majoor De Carpentrie terug naar Dartmouth te mogen keren zodra de mariniers te Lorient ontscheept waren. Dat was werkelijk onze enige opdracht. Nu is dat niet meer mogelijk zolang die mannen aan boord zijn.

Bovendien geraken wij tekort aan levensmiddelen en zullen ze weldra geen eten meer kunnen geven. Dan is er één van die officieren aan boord van de P 13 die mij vroeger, jaren terug gekend heeft, komen opmerken dat het nogal eigenaardig was van mij naar Engeland te willen gaan ! Natuurlijk een amper bedekte zinspeling op mijn geboorteplaats.

Zoals naar gewoonte sta ik daar met mijn mond vol tanden als ik zo bruusk geïnterpelleerd ben en kan enkel maar antwoorden dat mijn vrouw in Engeland is en dat de engelsen toch steeds tevreden zullen zijn zeelieden te vinden die voor hen willen varen.

Graré is vanzelfsprekend, naar het schijnt met nog andere officieren van het Marinekorps, tegenwoordig tijdens dat gesprek. Hij zegt aan Commandant Van Strijdonck dat hij die bijeenkomst uitlokte omdat hij vernam dat al de mensen van de MLB 16 wenssten naar Engeland terug te keren. Hij voegt erbij dat er daarvoor tussen het Marinekorps zeker ook zouden te vinden zijn en dat het

ogenblik nu naar zijn mening gekomen is om iedereen bij zijn keuze te laten. Commandant Van Strijdonck is het eens met die gedachte en vraagt ons indien wij bereid zouden zijn degene bij ons aan boord te nemen die ons willen volgen. Namens loodsschipper Nierynck antwoord ik dat wij zulks zeker zullen doen. Daarop legt hij ons zijn plan uit. Hij zal met de P 13 naar Arcachon gaan om proviand terwijl de T 1 met opdracht naar Le Verdon is. Zodra terug zal hij De Carpentrie voor het alternatief stellen. Die zal dan wel iedereen moeten vrijaf geven. Dan zal men de marinemannen van Loodsboot 16 kunnen vervangen door diegenen die naar Engeland willen.

Een loodsschipper met zijn ploeg loodsen... en twee loodsleerlingen van zijn bemanning vóór afvaart uit Oostende naar de loodspost in 1937.

Zo maar met Luitenant Gonze terug aan boord van onze kotter waar ik aan de schipper het goede nieuws kan melden. Een paar uurtjes nadien zien we inderdaad de P 13 anker op gaan en zuidwaarts vertrekken. Nu komen er meer en meer stoomboten uit de Geronde. Grote engelse en hollandse passagiers, alle soorten cargo's. De volgende 20 en 21 juni staan we op de uitkijk van al die scheepvaartbewegingen. Wij geraken hier stilletjes aan alleen ten anker. Aan wal, in de richting van Bordeaux is daar brand. 's Morgens van de 22ste blijven maar praktisch de Marinekorpsschepen met ons over. We worden hoe langer hoe meer ongeduldig met dat naar het zuiden loeren om de P 13 te zien terugkomen. We beginnen hoop te verliezen en 's namiddags gaan we de zaak nogmaals onder ons bepraten. Wederom verlaat de schipper zich op mij om met Luitenant Gonze aan majoor De Carpentrie ons doel uit te leggen. Wij willen naar Bayonne proviand halen en er de 50 marinemannen vrij laten tenzij hij ze aan boord van zijn schepen wil overnemen.

Na het middagmaal ga ik met Luitenant Gonze aan boord van de A 4. De majoor zit daar in de schipperskajuit koffie te drinken met Luitenant Van Vaerenbergh, die commandant is van de A 4 en met aalmoezenier Leclef. Het gepraat van twee dagen tevoren herbegint aan boord van de A 4. Luitenant Gonze maakt het klaar en duidelijk dat de toestand aan boord van onze loodsboot verergert en weldra onhoudbaar zal worden met de mannen van het Marinekorps. De majoor brengt daartegen dat hij juist de T 1 met Commandant Delstanche naar Le Verdon gezonden heeft om instructies te bekomen van de belgische regering.***4***

Dat kan ik nu maar niet kroppen en kan mij niet inhouden te zeggen dat er toch nu geen sprake meer kan zijn onderrichtingen te hopen van de belgische regering die God weet waar is. Wij kunnen daarop niet meer wachten. En wij zijn toch maar burgerlijke agenten tegenover een aantal militairen aan boord waarmede wij ons niet meer veilig voelen. Ten lange laatste onder de indruk, zegt majoor De Carpentrie vermoeid dat hij ons van alle verplichtingen tegenover hem vrij stelt en dat we mogen

doen wat we willen. Nu maar terug naar de kotter met onze werkboot die, bewaakt door Klausing, langszij van de A 4 ligt. Alvorens te schepen kan ik nog de hand reiken aan Waterschoot die daar aan dek staat. Als officier werktuigkundige van de maalboten is hij ook als onderofficier in Frankrijk gemobiliseerd geweest en ik kan mij not inbeelden dat 13 jaar later hij mijn « chef mécanicien » zal zijn aan boord van de Kamina

God zij dank... we zijn vrij ! Volgens de enige grote schaalzeekaart van de Bay of Biscay die we bezitten, en 't is de laatste, zijn er nog zowat 160 mijl af te leggen tot Bayonne. Dat kunnen we dezelfde dag niet meer halen en regelen de snelheid om in de vroege ochtend dicht langs de kust de monding van de Adour te maken. Met Luitenant Gonze laten wij duidelijk verstaan aan de Marinekorpsmannen dat wij naar Bayone sturen om levensmiddelen om zodra naar Dartmouth terug te varen. In de late namiddag van de 23ste wordt de monding van de Adour gemaakt en we lopen maar binnen zonder loods te vragen. Amper binnen de hoofden wordt daar aan bakboord een steiger waargenomen waar we zouden kunnen aanleggen. Schipper Nierynck zwaait de kotter rond om met de boeg naar buiten te meren. De steiger behoort klaarblijkelijk tot een nabij gelegen fabriek maar waar er geen spoor van leven op te merken valt. We hebben het niet eens in de gaten dat het zondag is sedert we Dartmouth verlaten hebben ! Men kan Bayonne niet zien want er is een bocht onmiddellijk stroomopwaarts en volgens de kaart moet de stad een goed eind verder liggen. Na het vastmeren zegt Luitenant Gonze tijdens ons beraadslagen dat hij naar de stad gaat om van de Commandant Marine levensmiddelen te bekomen voor onze terugreis. Geen bezwaar van onzentwege en daar hij tegen de avond zeker niet meer zal terug zijn schikken we ons in 't vooruitzicht van 'n rustige nacht.

's Morgens vroeg is het zo ongewoon stil dat we er eigenlijk wakker van worden... om onmiddellijk vast te stellen dat het Marinekorps met de noorderzon verhuisd is. Twee onder hen zijn aan boord gebleven en verklaren ons lot te willen delen. Dat valt mee, matroos Haegers, gemobiliseerde Zeebrugse 'Visser zal bovendien kok kunnen spelen terwijl Viaene, assistent werktuigkundige van het Staatswezen, eveneens gemobiliseerd, in de machinekamer ten goede zal komen. Klausing, die tijdens de nacht 'n oogje in 't zeil genomen heeft brengt de humoristische nota door te vertellen dat onze deserteurs een kinderwagen gebruikt hebben cm hun plunjezak mee te sleuren. De oostendse eigenaar die zijn kinderwagen aan board in de steek gelaten heeft zal zijn spul niet nicer terug zien.

Met Decrop ga ik aan wal op zoek naar 'n café of bistrot waar we toch iets te eten zouden kunnen krijgen. Zodra klaar van de goederenwagons ligt een café op de baan waar de baas zo vriendelijk is ons een franse « casse-croûte » te bezorgen.

Er zitten daar twee matrozen van de Marine Nationale aan een tafel te redeneren met de baas. Ze kunnen maar klagen en zagen over het tekort aan munitie, aan wapens, aan schepen dat Frankrijk de oorlog heeft doen verliezen. Dat valt beslist niet in de smaak van de « patron », waarschijnlijk één 14-18 oudstrijder, die meteen repliceert : « c'est ça qui vous a manqué ? » met de hand op het hart. De casse-croûte heeft ons deugd gedaan en we danken de baas, hoe we hem betaald hebben, met engels of belgisch geld weet ik niet meer en keren terug naar onze kotter.

Rond 10 uur... daar komt Luitenant Gonze meteen voor de dag met 'n burger. Die moet de schipper spreken. Met Decrop en de chef Verkempinck zijn we natuurlijk aanwezig op die vergadering waar de meneer zich aanstelt als sekretaris van de Consul van België te Bayonne. Hij steekt zijn babbeltje af met ons te doen bekennen dat ons schip een belgisch staatsvaartuig is om daarop onmiddellijk met koelen bloede te kennen te geven dat wij bijgevolg moeten gehoorzamen aan de bevelen van de consuls wanneer in de vreemde ! Dat is al een eerste koude douche ! Er zijn op het ogenblik zowat dertig of veertig belangrijke belgische vluchtelingen in Bayonne die we moeten aan boord nemen en... naar Lissabon brengen !

Hevig protest van ons allen. Dat is nu beslist 'n zet van vader Gonze die geen kik geeft en maar zwijgend toestemt met meneer de consuls' sekretaris uitleg. Het ligt voor de hand dat hij naar het consulaat is gaan lopen waar hij van die bevoorrechte vluchtelingen heeft gevonden die tot dat laatste plekje van Frankrijk geraakt zijn. Wij verzetten ons met hand en tand. Ten eerste hebben wij geen zeekaarten meer om verder te gaan. Geen proviand meer. Maar we voelen weldra dat

daartegen niet te redeneren valt. Met de gebruikelijke patriotische stijl - we geraken dat liedje bekend -mogen die hoogaanstaande personaliteiten niet in de handen van de duitsers vallen. En de duitsers zullen hier op ieder ogenblik opdagen ! En al gaan jullie op jullie kop staan maar naar Engeland proberen te gaan, daar is geen sprake van. Het is een verplichting die passagiers naar Lissabon te brengen ***5***.

lk zie genoeg dat, op zijn zachtst gezegd, zoiets de schipper niet aanstaat, maar dat hij aan de andere kant als brave plichtvoile staatsambtenaar zeker enige weigering op een bevel wenst te vermijden. De arme Nierynck zit nu tenminste voor de derde maal in het nauw gedreven sedert onze afvaart uit Oostende. Dan stel ik hem voor dat het mij toch niet moeilijk zou zijn, eens rond Villano, laatste landmerk op onze enige Bay of Biscay -zeekaart, op de Berlingua's eilanden te sturen en van daar de monding van de Tagus te maken. Ik heb toch lange jaren langs de Portugese kust ge- varen met de tankers van de Purfina. Goed. Hij stemt toe maar nauw verbonden stellen wij onze eisen. Die mensen moeten genoeg eten meebrengen voor twee á drie dagen. Ze mogen niet meer dan veertig zijn want we willen dat gevalletje van Oostende niet herhalen wanneer we teslotte met 160 vluchtelingen te doen hadden. Daarom moeten ze een bewijs brengen van het consulaat om hun inscheping toe te laten. Akkoord ! Meneer de sekretaris waarschuwt ons evenwel dat ze tegen de avond zullen aankomen en dat we maar zodra de plaat moeten poetsen.

En zo beginnen we ons daarop te schikken door 'n eenvoudige grote kuis na het verblijf van ons vijftigtal marinemannen. Enfin, tegen de vooravond ziedaar meteen 'n stel personenwagens op de baan achter de goederenwagons. We stellen ons langszij klaar om de bewijzen van de consul af te nemen. Verdomme ! Ze hebben geen papier ! Chef Verkempinck die op het achterdek beneden bij de ingang van zijn machinekamer staat precies lijk 'n ticketcollector van de pakketboten roept me aldra dat er 'n meneer is die beweert de neef te zijn van een minister... maar hij heeft geen toelatingsbes. mag men hem aan boord laten ? Tot mijn spijt onze chefs' geliefkoosd stokpaardje... het reglement... te doen overtreden, zeg ik hem dat het maar goed is, het is bij allen hetzelfde, Intussen is het weer verslecht. De wind is fel opgestegen met nog regen erbij. De deining die nu voorzeker buiten staat laat zich reeds voelen tot op onze ligplaats. Eindelijk zijn de laatsten aan boord geraakt met hun spullen en de schipper roept...: « Stand by fore and aft ! »... los voor en achter en we zijn weg. Plots merken we franse douaniers die bovenop de duinen op de oever te voorschijn komen. Ze roepen ons te haasten want de duitsers zijn aan 't komen ! Awel, het was hoog tijd ! Er komt wel een onaangenaam gevoel bij het over de drempel van de Adours' baai te varen want het is beslist vies weer, sterke buien en zodra buiten de pierhoofden komen we dadelijk in de storm terecht. Toch voelt de ouwe zich dadelijk thuis en manoeuvreert zijn kotter zoals hij het zo dikwijls klaar gespeeld heeft op de West-Hinder en Noordsteenbank loodsposten. We zijn noordwest bij gaan liggen met machines langzaam vooruit, juist genoeg om van die gevaarlijke en ongastvrije franse kust weg te geraken. Terwijl wat van de dekstaf op de brug overblijft zorgen Klausing en Haegers dat beneden alles goed geschord en dicht is tegen het stormweer en alle passagiers beelden zich zeker in dat hun laatste uur aangekomen is op zo'n mosselschuit. Een van de dames is natuurlijk tegen de bovenrand van 'n deur gebotst. Geroep en geschrei van kinderen dat ten lange laatste toch ophoudt, ze zijn waarschijnlijk allen in de kooien van de loodsenkajuiten gaan liggen ! En zo is het probleem van de eerste maaitijd aan boord opgelost.

Dan wordt men plots gewaar dat de avond gevallen is, lage zwarte wolken, gedurige regenbuiten met de onvermijdelijk onstuimige zeeën in dat vies Golf-van-Biscaya-gat. Maar onze goede MLB 16 houdt het best in de stevige handen van de schipper en de chef weet maar al te goed hoe hij zijn molen moet regelen onder zulke omstandigheden. Tussen twee regenbuien zien we plots de schaduw van een oorlogschip... engels white ensign... op enkele kabellengtes ! We worden gepraaid met de morselamp...

« Wat ship ? »... We antwoorden : « Belgian pilot boat bound Lisbon ! »... « Begrepen ! » en hij verdwijnt. Het zal mij niet eens ingaan dat ik twee jaar later op zo'n schip zal staan en dan nog in uniform. Het blijft er nu maar over ons in wachtbeurten te organiseren. De ouwe zal vóór morgen de brug niet verlaten en om zo te zeggen bijna niet tijdens de rest van de overtocht. Met Decrop, die

sedert Oostende tweede stuurman speelt, de matrozen Klausing en Haegers lossen we mekaar af aan het roer en op de uitkijk om ons hier en daar enkele uren maar zoals het waait en draait in onze kooi te gaan liggen. De ganse nacht is het maar van stampen en rollen. 's Morgens gaat het toch wat beter, er staat nog 'n zware zee maar we zijn er toch in gelukt de snelheid op te drijven en even west-zuidwest te gaan sturen om de spaanse kust in 't zicht te houden. Zodoende hopen we Sisargas, Villano en Finisterre te omzeilen bij het einde van de volgende nacht.

Het is nu ook welletjes tijd om aan die allerheilige administratie te gaan denken en de inventaris van onze passagiers op te maken ! En daar komt nu de miserie ! Gonze, die zich met Decrop daarmee belast heeft moet nu wel bij de schipper gaan biechten dat er zich toch vier blinde passagiers tussen onze hoge gasten binnengesmokkeld hebben ! Een duitser, Hoffman... dat moest er nu nog bijkomen, één oostenrijker, zogezegd dokter Perl, de vrouw Lieblan ook oostenrijkster en ten slotte nog 'n franse jongeling.

Wat de rest betreft zijn we rijkelijk bedeeld ! De Directeur-Generaal Compagnie Maritime Belge en Mevrouw P. Cattier met twee kinderen, Ingenieur Hoofd-Directeur en Mevrouw G. Dufour en kind, Commandant J. Lejeune, Walkapitein CMB met mevrouw en kind, de ganse topleiding van onze belangrijke rederij dus, met dan nog de van Peborghs', Vereeckens' echtgenoten en kinderen l6 Bovendien komen nog de Heer en Mevrouw C. Tschoffen en vervolgens de aanzienlijke groep Van Cauwelaerts' bestaande uit twee jonge gezinnen met kinderen, één of twee zoons geestelijken, één dochter en mogelijk nog 'n gouvernante.

Om de lijst af te sluiten komt er nog 'n antwerpse opperrabijn met zijn betrekkelijk deel afstammelingen waaronder 'n zoon diamanthandelaar en tenslotte nog 'n zekere J. Dambrot, ook israëliet maar uit Brussel.***7***

De verstekelingen worden stante pede aan het werk gezet zoals hoort op de koopvaardij. Ze zullen maar steward gaan spelen aan boord van een loodskotter hetgeen wel 'n unicum zal maken in de geschiedenis van het Loodswezen ! Het zal er op aan komen dat allemaal te gaan uitleggen in Lissabon en intussen blijkt Decrop de hand te hebben gelegd op koshervoeding voor de joden - ik vraag me werkelijk af hoe hij dat geflikt heeft - in ruil voor 'n schoolatlasje van een van de jongelingen. Zo gaat de dag voorbij door de kust in 't zicht te houden, koers west, hier iets noordelijk, dan weer wat zuidelijk. Het is nu beslist verbeterd en we lopen wel 10 knopen. 's Avonds tekenen de bergen zich uit voor de boeg en we sturen noordwest waar de spaanse landeinde moet liggen rondom dewelke ik wel Sisargaseiland zal herkennen. Tijdens de nacht maakt men inderdaad het vuur van Estacada Point en we omvaren Sisargas rond 7 uur 's morgens. En nu koers zuidwest bij prachtig geworden weer, de lichte bries is noord geruimd en de schipper laat volle toeren draaien in de lange regelmatige atlantische deining.

Het mooi weer doet onze gasten uit de zeker vermufte loodsenkajuiten komen om zich maar in het warme zonnetje zo gemakkelijk mogelijk te maken op de nauwe bak, terwijl Commandant Lejeune en de Heer Dufour ons zoals gisteren gezelschap houden op de brug.

Het moet zijn dat onze personaliteiten bekomen zijn uit hun enigszins geschokte gemoederen want er wordt fel van gedachten gewisseld over de laatste gebeurtenissen en de handelingen van onze politici in Frankrijk. Nu is het wel makkelijk te gaan redeneren over wat er zou moeten gedaan geweest zijn en wat men maar beter terzijde zou gelaten hebben. Op de brug kunnen wij alles horen en meneer Dufour kon zich niet bedwingen misprijzende opmerkingen te maken op zo'n gepraat. Voor ons, die sedert Oostende zonder onderbreking aan de beurt zijn geweest is het toch maar kras die weglopers te horen discussiëren. Het enigste wat ze gedaan hebben is maar in alle haast Frankrijk door te bollen terwijl de gemobiliseerde het zo lang mogelijk moesten volhouden. Dat steekt me tegen. Laat ons maar zo vlug mogelijk in Lissabon aankomen om dat stelletje te ontschepen en dadelijk terug af te varen. Maar ja, we zijn er tot hiertoe toch goed doorgekomen en het zal nu wel goed aflopen nadat we de bevelen van het consulaat te Bayonne gevolgd hebgen.

Rond de middag omvaren we Villano en zetten nu koers vrij zuid nog voor de rest van de dag en de laatste nacht om 's anderendaags, de 27ste, de Berlingua's te maken van waar we dan op Cabo Roca sturen gedurende 'n korte namiddagwacht en vervolgens zuidoost recht naar Cabo Razo en de

monding van de Tagus. 't Is nu aan ons om de vlag te hijsen voor 'n loods te vragen. Wat 'n verandering zo onder de kust te schuiven met al dat volk op het strand en in de café's, mensen die er zich niet eens bewust van zijn dat er ergens 'n oorlog aan de gang is ! Ziedaar de loodsboot om de hoek ten anker dwars van Cascais aan de monding... men vermindert nog de snelheid... de schipper beveelt Stop machines »... we kunnen zijn werkboot zien klaar maken, de loods scheept in... de motor stuurt naar ons... komt langszij en de loods jumpt over de verschansing en nu is het zijn beurt om ons naar binnen te brengen ! Eindelijk 'n paar volle nachten zonder wachtbeurt in 't vooruitzicht om eens gezond te slapen in een rustige haven alvorens naar de onzen terug te keren.

(1) LECONTE, op. cit. p. 455 : « Lorient ayant dû être évacué par suite de la rapide avance de l'ennemi, et le port étant en flammes, nos bateaux partirent, par ordre le 18. juin pour Le Verdon, avant-port de Bordeaux ».

(2) LECONTE, op. cit. p. 459 (renvoi 30) «... Le P 16 ne servit que de transport. On comptait en faire, à Lorient le navire d'état-major, mais le temps fit défaut ; il avait cependant déjà à bord les magasins du Corps et les services de comptabilité ... »

«On a rapporté à tort qu'il avait comme commandant le Lieutenant Gonze qui était à bord, ce fut l'état-major civil qui en garda la direction» NOTA : Het is mogelijk dat de Marinkorps' staf het inzicht koesterde een commandoschip van MLB 16 te maken maar zulks dan in tegenstrijd met de uitdrukkelijke belofte van Majoor De Carpentrie, bijgestaan door Commandant Delstanche, mondelings gegeven aan Loodsschipper Nierynck in onze aanwezigheid te Dartmouth, dat het er voor ons enkel op aankwam de mannen van het Marinekorps naar Lorient te brengen vanwaar wij naar Darthmouth mochten terugkeren.

(3) AMIRAL AUPHAN et JACQUES MORDAL, « La Marine Française dans la Seconde Guerre Mondiale » Editions France-Empire 1967 « A Lorient, centre de réparations et de constructions neuves, il y avait quinze navires de guerre et 35 dragueurs et patrouilleurs. Tous appareillèrent le 18 juin à l'exception de trois qu'il fallut saborder ».

La ville fut occupée le 21, après une résistance héroique — et sans espoir -- dirigée personnellement par l'amiral ... préfet maritime de Lorient » p. 147.

(4) J. GERARD-LIBOIS et JOSE GOTOVITCH, « La Belgique occupée - L'an 40 » Editions CRISP 1971 : Le 17 juin le maréchal (Pétain) ... annonce qu'il faut chercher à mettre fin aux combats. Le gouvernement belge est prié de quitter Poitiers et on se donne rendez-vous à Bordeaux, pour le lendemain, 18 juin » p. 240 Dans l'après-midi du 18 juin, le gouvernement belge (à bord du Baudouinville réquisitionné) décide de conformer son attitude à celle de Pétain. L'idée de départ vers l'Angleterre était abandonnée, malgré l'opposition des ministres Jaspar, de Vleeschauwer et Gutt. » p. 241.

(5) cfr. verwijzing (4) supra.

(6) In werkelijkheid was aan de leden van het directiepersoneel C.M.B. opgelegd Engeland te vervoegen. Daarom waren ze tot Bayonne gekomen om vandaar in Spanje te geraken. Directeur-Généraal Cattier ontmoette toevallig Gonze 's morgens van de 24ste die hem mededeelde dat MLB 16 in het gehucht Le Boucau lag onder vaarorders voor Lissabon. Cattier heeft dan zijn staf opgetrommeld met opdracht aan boord te zijn tegen 19.00 uur dezelfde dag. (Inlichtingen vriendelijk medegedeeld door Commandant J. Lejeune tijdens onderhoud van 4 mei 1977).

J. GERARD-LIBOIS et JOSE GOTOVITCH, op cit.: « Moins désemparées, car chargées de missions précises, quelques personnalités, antennes du monde économique belge, sont déjà à pied d'oeuvre à Londres. René Boël (groupe Solvay) y dirige depuis plusieurs mois la mission économique belge. C'est le premier bureau à nos couleurs établi à Eaton Square » p. 247/248. « Cependant, avec le bourgmestre d'Anvers (C. Huysmans), c'est tout l'état-major syndical du port (d'Anvers) qui se trouve à Bayonne (vers le 20/21 juin) ... la tradition antifasciste est forte dans ce milieu et dès 1939 l'organisation syndicale internationale s'est déplacée d'Amsterdam à Londres, par précaution. Aussi pour Daems, De Witte, Chapelle et Omer Bécu, dirigeants syndicaux des gens de mer, le chemin de

Londres apparaît comme une voie naturelle et saine » p. 250. « Le 21 juin enfin, trente deux Belges quittent Bayonne (vers l'Angleterre) à bord du Léopold II (de l'armement Deppe) » p. 250.

(7) Aanvullende inlichtingen over de passagierssamenstelling medegedeeld door huidige Loodsschipper Albert Decrop. (Mei 1977.)

Neptunus Maart 1979

Inséré le 04/07/13 NEWS NOUVELLES Enlevé le 04/08/13

La partie arrière du MOL Comfort coule au fond de l'océan Indien

Après avoir résisté pendant 10 jours, la partie arrière du porte-conteneurs MOL Comfort, qui s'est brisé en deux le 17 juin, a fini par sombrer hier, en plein océan Indien. La structure, qui dérivait depuis l'accident, a coulé à 750 km au large des côtes indiennes avant d'avoir pu être prise en remorque, ce qui a en revanche été le cas pour la partie avant, tractée depuis le 25 juin par des remorqueurs vers un port du golfe Persique. Malheureusement, des deux parties, c'est l'arrière qui était la plus critique, comprenant notamment les machines et la majeure partie des soutes à combustible. Selon l'armateur japonais Mitsui OSK Lines, propriétaire du MOL Comfort, il y avait à bord de la partie arrière 1500 tonnes de fuel de propulsion, mais aussi 1700 conteneurs, dont on ignore le contenu. L'ensemble représente évidemment une sérieuse menace pour l'environnement. Sans compter que de nombreux conteneurs, qui étaient encore stockés sur le pont et en cale, sont maintenant à la dérive, constituant un danger pour la navigation.

Long de 316 mètres, le navire embarquait, au moment où il s'est brisé en deux, 4382 conteneurs, pour une équivalence de 7200 EVP (Equivalent Vingt Pieds, taille standard du conteneur). Les investigations se poursuivent pour connaître les causes de l'accident, d'autant que le MOL Comfort est un navire très récent, puisque livré en 2008 par les chantiers Mitsubishi Heavy Industries (MHI) de Nagasaki, au Japon. A titre préventif, Mitsui OSK Lines a fait alléger le plan de chargement des autres porte-conteneurs de cette série, qui compte six autres unités (MOL Creation, MOL Charisma, MOL Celebration, MOL Courage, MOL Competence, MOL Commitment), et a décidé de mener une inspection sur chacun de ces bateaux. Ce fut le cas hier, au Havre, pour le MOL Competence, qui a été inspecté par le Centre de sécurité des navires et une équipe de MHI. Aucun problème particulier n'ayant été décelé, le navire a pu reprendre sa route.

Malgré tout, Mitsui OSK Lines a annoncé hier que les sisterships du MOL Comfort allaient tous bénéficier de travaux destinés à renforcer leur structure, ce qui leur permettra, selon l'armateur, d'aller bien au-delà des normes de résistance requises.

Inséré le 04/07/13 BOEKEN LIVRES Enlevé le 04/08/13

"Zeebrugge Oostende Jaarboek 2012".

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

Bij het Antwerpse Mediabedrijf De Lloyd verscheen, na maanden van voorbereidend werk, de volledig bijgewerkte uitgave van het "Jaarboek van de havens van Zeebrugge en Oostende", dit jaar onder de titel "**Zeebrugge Oostende Jaarboek 2012**". Het boek groeide over de jaren heen uit tot een onmisbaar werkinstrument voor iedereen die in welk opzicht dan ook, te maken heeft met de werking van onze Vlaamse kusthavens Zeebrugge en Oostende. Tweetalig opgesteld (Nederlands –

Engels) biedt het jaarboek alle nuttige informatie over de havenautoriteiten, de officiële maritieme instanties en alle bedrijven die actief zijn in beide havens. Ook instanties die maar zijdelings bij de havenuitbating betrokken zijn, werden in het jaarboek opgenomen. Het werk werd gebruiksvriendelijk opgesteld zodat opzoeken in het boek kinderspel is. Bovendien wordt dit opzoeken sterk vereenvoudigd door de opname in het jaarboek van een aantal indexes. Zo is er ondermeer een personenindex die alle opgenomen namen met hun functie weergeeft.

"**Zeebrugge Oostende Jaarboek 2012"** (ISBN 978-90-817878-3-3) telt 244 pagina's. Bestellen kan bij Mediabedrijf De Lloyd, Jan van Gentstraat 1,

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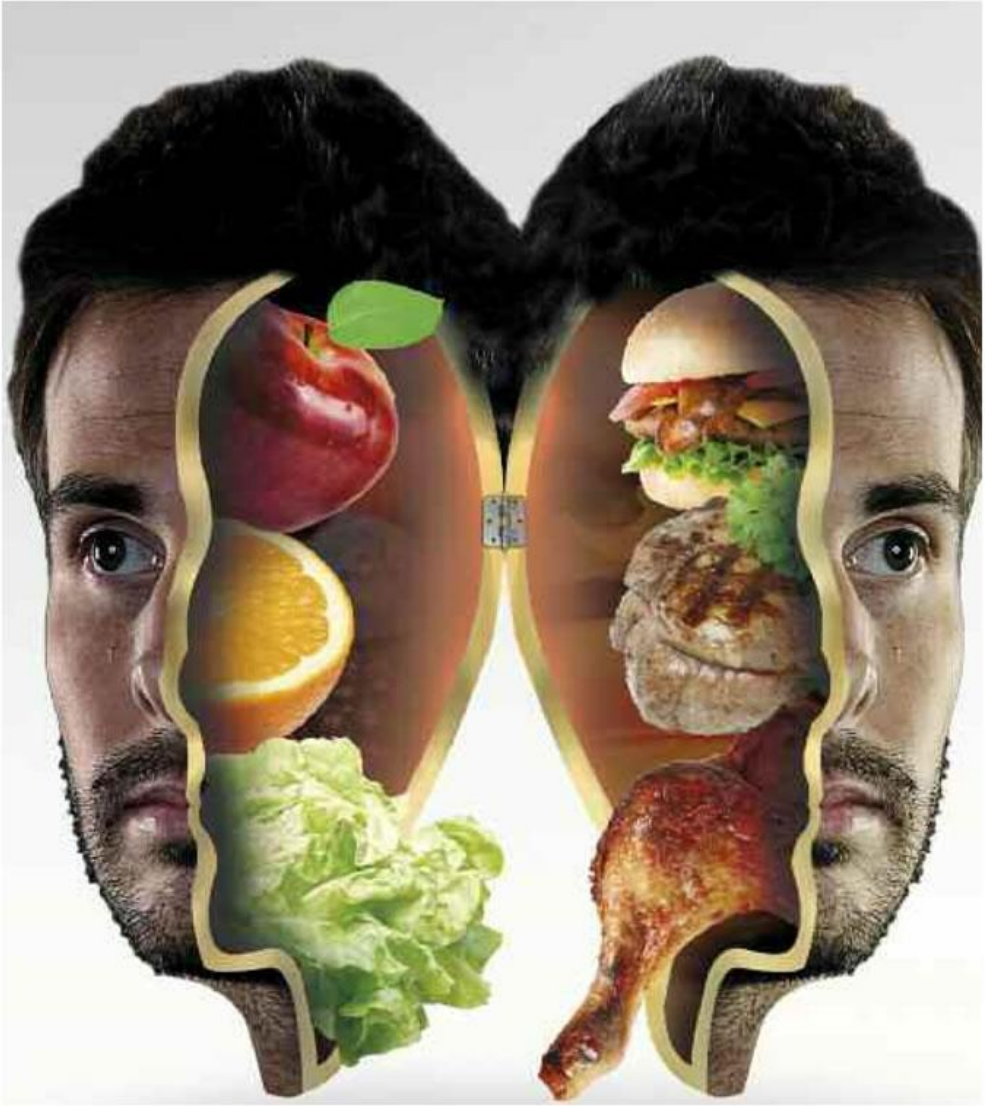
Food for thought

By Samantha Giltrow



Considering the current tough economic climate, ensuring the welfare of crew has never been so important - after all it is only with a motivated and productive crew that companies can maintain a competitive advantage and deliver to customers.

With just two more member states needed to sign up for the ratification of the Maritime Labour Convention (MLC) 2006, it will soon be compulsory for shipping companies to ensure their crews are looked after, with food and nutrition playing an important part.

The new requirements will also give consideration to the preparation of food, taking into account seafarers' religious requirements and religious practices.

Robert Steen Kledal, Managing Director at Wrist Ship Supply, said: "While initiatives such as the International Maritime Organization's Day of the Seafarer and social media are contributing to a greater awareness of seafarer conditions, for many ship owners and operators the commercial risk posed by new legislation and the challenging market conditions are increasingly ensuring that crew welfare is high on the boardroom agenda.

"Ship supply plays a crucial role in ensuring crew welfare, as well as maintaining productivity, performance and generating efficiencies."

Ship supply is just one of many links in the chain to ensuring crew welfare, with company offices and their procurement departments, cooks and masters also playing a vital role.

Indeed, Danish health and safety consulting company Seahealth, has carried out a survey into onboard catering in its Project NEPTUNE, supported by the Danish Maritime Foundation.

The 'Mapping of food and skills at sea' aims to review the whole area of diet and nutrition in preparation for helping Danish vessels to comply with the Convention.

Seahealth asked 48 cooks, masters, trainees, suppliers and company office staff about their experiences of onboard catering.

"My idea was that when the MLC comes into force, Danish ships would take the lead. The whole aim is to have better nutrition onboard and to look at the overall cost for ship owners," said Project Manager Annelise Omand, a health and nutrition consultant with Seahealth.

"On Danish ships it is not necessarily expensive to do some of these things and and it is very much about the attitude onboard and from the ships' owners."

The food mapping process looked into what owners and managers were buying, where they were buying it from, how food is cooked and the attitude towards healthy food.

"The biggest surprise from the project was that the master has a big influence in what food is served onboard," said Ms Omand. He also has a big responsibility for what is ordered and so the cook does not always have a say. We have been told that if the master has a positive attitude towards healthy food then he will influence the rest of the crew's attitude and he will be a role model for healthier food and a better lifestyle onboard."

One Danish cook commented: "It is time to focus on diet aboard. Ship owners must take responsibility ... Previously, the focus was on near misses and all sorts of other injuries and accidents and other things. They have not really focused so much on diet and I believe it can make a difference to well-being aboard."

While a staff member in Health, Safety, Environment and Quality, said: "The cook is not only responsible for the crew eating healthily; he also has an influence of efficiency. If people can eat well, it has an impact on the work done and he can boost the morale onboard. These guys cannot call for a pizza, so the food has to be varied and interesting."

A Danish master said: "When there is not so much to look forward to in a hardworking day, it is incredibly important for most seamen and, in any case, for me that what you eat is delicious and that it is healthy and good."

Results of the mapping process showed suppliers believed there was a conflict between the experiences of seamen, company offices and suppliers. Suppliers felt they were blamed for quality

issues but said they operated within the framework set out by the company and called for clear, realistic requirements and frameworks in contracts between suppliers and companies.

Another message coming out of the process was that company offices had to take the lead and set the framework for catering, using corporate policies on the quality of food to give guidelines to masters, cooks and crew.

Stewards, cooks and manning agencies called for realistic budgets and improvements in training – for instance, there are standardised courses in Manila which lead to a certificate giving the right to work as a ship's cook. The report states: 'It is important that manning agencies and companies ensure that courses comply with the quality standards set by ship owners."

The survey also concludes that the master's personal attitude, experience and skills are crucial for health onboard and masters themselves want guidelines for diet/catering , well-being and health and that companies should provide such guidelines.

With the mapping process now completed, Project NEPTUNE is now doing further work to develop a toolkit enabling Danish seafarers and office staff to give a boost to the whole area of diet and catering. It should be available online in the autumn (www.ukseahealth.dk).

Some of the things included in the toolkit include templates and guidance on drawing up health and catering/dietary policies in the company; the provision of themed days on health and safety aimed at students in maritime education or company officers; courses for cooks including inspiration courses and certificate courses in hygiene; and guidelines for how to set clear requirements in contracts between companies and suppliers.

In the meantime Ms Omand is planning a seminar to involve students. "It's all about food culture. We have to start educating the students because they are the future role models," she said. "Some of the vessels do not have an educated cook onboard and we need to train them and provide them with better skills."

Mr Kledal said: "For many seafarers, who are away from their families for lengthy periods and facing serious threats of piracy, mealtimes are a key social part of their day. Catering for a crew's nutritional needs is therefore a priority. Balancing quality food that complies with religious dietary requirements, allergies or healthy eating standards with the pressure to cut costs is difficult for many ship operators. Food prices are soaring and it is a challenge to keep a realistic budget that also maintains crew welfare."

Wrist Ship Supply, which offers a complete range of fresh, frozen and dry provisions through its branches worldwide, is already using software that provides a menu-planning tool and electronic cookbook to give ship owners inventory control, reducing waste and enabling transparency to ensure companies stay within nutritional guidelines.

"Managing the latest ship supply complexities through an intelligent software system will therefore deliver genuine value to ship owners and operators," said Mr Kledal.

"It will enable them to concentrate on core operations, reduce the risk of fines, provide a healthy diet for the crew, and provide a procurement resource that can be updated in future as further regulation governing crew welfare comes online."

Another ship supplier, Hutton's, based in Hull, UK said it had already seen a shift towards healthier products and is helping with menu-planning.

"We are stocking leaner meats, rice and pasta and there is less processed food," said General Manager David Greenwood.

"The vessels are obviously quite tight on feeding rates but we have a very open dialogue with them when catering managers are looking for their supplies. They are coming to us with a broader range of products for us to source and supply. It is incumbent on us to broaden the range that we offer and we can offer suggestions and support."

He said he had seen in the UK, and when working in his previous post in the Middle East, that less processed food was being sold as companies were looking more to encourage the chefs onboard to create healthy meals.

“What you will probably find is that instead of buying cases of frozen pies they will buy the ingredients to make them onboard themselves. They are less processed and much healthier and they can control the portion sizes and sugar content. The calorific value will also be less and they will be nicer to eat. It’s better for the staff, they can see what’s going into it and it’s better value for money.”

Mr Greenwood said Hutton’s was also involved with clients on menu planning and the days of turning leftovers into days’ worth of meals, were slowly but surely being left in the past.

“With more open dialogue allowed to come back from crew, they can’t really do that anymore because if a particular shipmanagement company does that they are not going to get people wanting to work on their vessels and they will have to pay more to get people to work.

“There are hard benefits in looking after your crew. It will be more cost-effective, they will work harder and will be more retainable.”

Shipmanagelent July

Inséré le 08/07/13 NIEUWS NEWS Enlevé le 08/08/13

Eco ships growing in numbers, could undermine value of older ships

A lot of debate has gone over the past couple of years on the economics and benefits behind the Eco ship, i.e. new design vessels that are -- allegedly -- offering huge advantages when it comes to consuming less bunker fuels. The controversy lies in the fact that claims of fuel economy made by various shipyards are proving -- so far -- difficult to prove. In any case, an Eco ship comes down to this: it's a vessel, which, through the process of hull, engine design and new technologies makes a significant saving on costs, predominantly with the main savings being on the engine consumptions. According to the latest report from London-based shipbroker Gibson, "many shipyards claim to build Eco vessels with a fuel saving of 25-30%, however finding concrete data to back this up proves challenging. Shipyards are happy to make statements claiming huge savings with their Eco ship designs, lauding higher levels of performance for current new orders, yet; they are not actually providing any comparable data. This creates a minefield of issues, with shipyards that do deliver on their promises stealing a march on yards that don’t perform, who could find themselves with legal cases and fines for not delivering on ‘Eco’ claims", Gibson said. It added that "a number of owners have vehemently contested these claims, warning that figures have been greatly exageratted. Torm CEO Jacob Meldggard commentedd “There are a lot of myths. Some have invested in these ships and are promising significant improvements in relation to the existing fleet, calling it an amazing investment. In the other camp, questions are being asked concerning the speed of the new ships, about whether they’ll be able to sail fast enough in bad weather or if the market savings turns solid again, whether the ships will be sailing with smaller cargoes, and so forth. No one really has a clear answer for these questions”.

According to Gibson, "in terms of newbuildings, the Eco discussions are centred on product tankers, but this is only because MRs and LR2s are the current focus of new investment; there are virtually no new orders for crude tankers at the moment! However, this does not mean Eco measures are not being implemented on the high consuming, large tankers. Maersk is reportedly spending up to $35m retrof fitting around 70 tankers over the next 2-3 years, piloting the Becker-Mewis ducts and boss cap fin, along with a raft of other technologies. It is claimed these measures can achieve around 7-8% cost savings. Gibson notes that "as Eco ships enter service these will be able to perform with significant cost savings compared with their less economic relatives and the owners of these new vessels will reap the benefits, at least in the early years. The maritime press is littered with news of owners and charterers taking the plunge on Eco newbuilds, and in a time of low-priced ships who can

fault them. Norden & Scorpio are some of the growing band of tanker owners going down this route and building on the products tanker orderbook. As we get more and more Eco ships, this is likely to undermine the value of the current fleet. So where do we go from here? Only time will tell. Could we be seeing the start of older, less economic tankers being scrapped, unable to compete in a more challenging market with their leaner Eco kinsman? ", wondered Gibson.

Meanwhile, in the tanker markets this week, in the Middle East, the shipbroker said that "charterers looked at regaining control back from owners this week, with only a drip feed of VLCC enquiry entering the market place. Certainly we are coming to an end of the June programe and charterers must be wondering why they rushed in for their end month positions when they see the amount of ships remaining, although delays in China and Singapore have caused a stir with replacement business, but overall charterers will feel the recent spike should be coming to an end. Last done levels to the East were at 270,000mt x ws42.5 and 280,000 x ws22.75 to the West via cape. Suezmaxes had a fairly busy week by their otherwise established lacklustre standards, however all it did was to underline the amount of tonnage at the charterers' disposal. Rates went sideways and any change envisioned is unlikely as West should see 135 x w28 and East around 130 x w55. Aframaxes were given a shot in the arm this week with the remergence of the bashayer stems with longhaul destinations to break the norm of the predictable shorthaul that has dictated for longer than owners would have liked. Rates have reacted slightly due to the high heated nature of the stems, but for the more generic stems from the AG we can't expect too many surprises as rates should remain around 80 x w77.5 for East off forward dates", Gibson noted. In the North Sea, "it was a mostly a week of failed hopes for Aframax Owners in the North Sea and Baltic. Even though tonnage got very tight for the prompt dates, only a few premiums were achieved as some charterers preferred selling the cargoes and swapping dates in order to avoid paying up. The Baltic stems are getting sold out quickly and next week Owners would have to face a fater tonnage list cramped in to third decades fixing window. Therefore, rates for Baltic-UKC rates are bound to return to its normal 100,000 at ws57.5 and stay flat in the North Sea with 80,000 at ws80. VLCC activity similarly kept flat with only one reported deal fixed for Eastern destinations with levels concluded at US$3.6 million loading Rotterdam for Singapore with port costs included. South Korean tax incentives may provide Charterers further opportunities next week which could inject some much needed interest for VLCC owners", Gibson concluded. **Source : Nikos Roussanoglou, Hellenic Shipping News Worldwide**

Inséré le 10/07/13 OPEN FORUM Enlevé le 10/08/13

Reducing underwater noise pollution from large commercial vessels (part I)

Summary

There is increasing concern about the effects of underwater noise on marine life. A major contributor to this is the noise generated by shipping.

The International Fund for Animal Welfare (IFAW) has identified that significant reductions in ambient noise can be made by reducing the noise output from the noisiest vessels. Resulting from this, IFAW commissioned Renilson Marine Consulting Pty Ltd (RMC) to undertake a brief desk top study into technologies that may be used to reduce the underwater noise output from the loudest commercial vessels.

This report is the primary output of the study, and is intended to inform discussions of technical measures and future research needs that can be implemented by governments and industry.

The report is arranged in four parts. Part I is the introduction and background, where some of the general issues are discussed. Part II covers some of the possible technologies that can be used to reduce noise for merchant ships, and Part III gives some examples for different ship types, discussing the practicalities and likely costs involved. Part IV is the recommendations and concluding comments.

It appears that there is considerable difference in the noise propagated by the noisiest and the quietest conventional merchant ships (excluding those designed specifically for low noise). Based on the current desk top study it is reasonable to develop a cautious note of optimism that the noisiest ships can be quietened using existing technology without reducing their propulsive efficiency.

There is little doubt that the dominant feature of these noisiest merchant ships is cavitation associated with the propeller. The two major aspects that influence the level of cavitation are:

1. propeller design; and
2. wake flow into the propeller.

Improvements in propeller design, either by modifying the existing propellers, or by fitting new propellers designed with noise reduction in mind, have the potential to reduce hydro-acoustic noise for the noisiest merchant ships, and increase propulsive efficiency.

In addition, there is the potential to improve the wake flow into the propeller for existing ships by fitting appropriately designed appendages such as wake equalising ducts, vortex generators or spoilers. The technology exists to do this, and although there is some understanding of the improvement that these devices will have on propulsive efficiency, there is little knowledge about how they will reduce the hydro-acoustic noise – however available data suggests that they will do so.

For new ships the wake flow can be improved by more careful design, which will require an increased design effort, including careful model testing and computational fluid dynamics analysis.

For ships which spend time in ballast this work should be extended to include optimisation of the propeller design and wake flow in that condition. This extra effort will cost more, however on the basis of the data available it is likely to result in improved propulsive efficiency as well as in reduced hydro-acoustic noise.

PART I – Introduction and Background

1. Introduction

There is increasing concern about the effects of underwater noise on marine life. A major contributor to this is the noise generated by shipping. The International Fund for Animal Welfare (IFAW) has identified that a reduction in hydro acoustic noise of 3 dB for vessels which exceed mean noise levels of 175 dB by one standard deviation (16% of vessels) would result in a reduction of 40% in the area ensonified to 120 dB (assuming a standard deviation of 5.3 dB for assemblages of vessels as found by

Scrimger and Heitmeyer (1981)). It also identified that a 6 dB reduction would reduce the corresponding area by 60%. Therefore, great gains can be made by reducing the noise output from the noisiest vessels.

Resulting from this, IFAW commissioned Renilson Marine Consulting Pty Ltd (RMC) to undertake a brief desk top study into technologies that may be used to reduce the underwater noise output from the loudest commercial vessels.

The objectives of the study were:

1. To examine the range of possible technologies that might be used to reduce underwater noise output from the loudest commercial vessels for new design and build.
2. To examine the range of possible technologies that might be used to reduce underwater noise output from the loudest commercial vessels during operation of current vessels.
3. To consider design or operational factors that might lead to particularly high noise output.
4. To review the likely implication in terms of initial cost, operating costs, effect on vessel handling and fuel efficiency for each identified technology.
5. To identify the most promising options for commercial vessels in terms of trade off between achieved noise reduction and overall costs.

This report is the primary output of the study, and is intended to inform discussions of technical measures and future research needs that can be implemented by governments and industry. The report is arranged in four parts. Part I is the introduction and background, where some of the general issues are discussed. Part II covers some of the possible technologies that can be used to reduce noise for merchant ships, and Part III gives some examples for different ship types, discussing the practicalities and likely costs involved. Part IV is the discussion, concluding comments and recommendations for future research needs.

2. Background

2.1 Principal cause of shipping related hydro-acoustic noise

There are a number of different causes of noise from shipping. These can be subdivided into those caused by the propeller, those caused by machinery, and those caused by the movement of the hull through the water. The relative importance of these three different categories will depend, amongst other things, on the ship type.

It should be noted that there is no standard way of measuring and assessing hydro-acoustic noise propagated into the water. Measurements are made by different organisations using different techniques, and different methods of extrapolation to determine the source level 1 m from the hull. See for example: Leaper and Scheidat (1998), McCauley et al (1996), and Wittekind (2008).

It is therefore recommended that a standard method of conducting and analysing full scale noise measurements be developed. This should take into account new technologies for recording hydro-acoustic noise, and the need for the measurement equipment to be portable. It should also make use of input from those experienced in conducting noise ranging for the military.

The noise from the propeller will depend on whether it is cavitating1, or not. Cavitation noise dominates other propeller noise, other than singing (see below), and in fact all other hydro-acoustic noise from a ship when it is occurring (Ligtelijn, 2007).

Generally at low speeds it is possible to avoid cavitation, however at high speeds this is not possible. Surface warships, particularly those used for Anti-Submarine Warfare, are designed to operate as fast as possible without cavitation occurring, however inevitably the propellers will cavitate above a certain speed, no matter how well the ship and propellers are designed. Considerable research has gone into making such vessels, which are already very quiet, even quieter – however this technology is unlikely to make any significant difference to the noise generated by the noisier merchant ships.

The lowest speed at which cavitation occurs is known as the Cavitation Inception Speed (CIS). The CIS value for any particular warship is classified, however it will typically occur below 15 knots. There are

published examples of research vessels using advanced propeller technology to improve CIS where the CIS is about 10 knots (Atlar, *et al*¸ 2001, ter Riet et al, 2003, van Terwisga et al, 2004).

Warship designers go to great care to ensure that cavitation does not occur at low operating speeds and hence the other sources of noise become important. The same applies for specialised quiet vessels such as research vessels. (Ojak, 1988, and Brännström, 1995).

However, this is not the case for normal merchant ships (Ring-Nielsen, undated). Thus, there is no doubt that the noisiest merchant ships, which have not been designed to reduce cavitation, will experience cavitation. If the noise from one component of noise is 10 dB above other components of noise, then the other components are irrelevant (McCauley, et al, 1996). Cavitation certainly has the potential to generate noise that is greater than 10 dB above machinery and other noises (Witterkind, 2008).

As shown in figure 2. 1, taken from Carlton and Dabbs (2009) existing merchant ships exhibit noise ranges which differ by as much as 40 dB from the upper bound of ships to the lower bound. This implies that there is at least the potential to reduce the noise level of the noisiest ships substantially.

Wittekind (2008) has also recently conducted a number of noise measurements on merchant ships, and showed a similar range to that given in figure 2.1. His work also demonstrated that the noisiest ships show signs of cavitation noise, and he too concluded that reducing this component of noise has the potential benefits in terms of reducing the noise generated by the noisiest ships, noting that it ought to be possible to reduce cavitation levels by about 10 dB, with greater improvements being possible with further research.

Thus, it is almost certain that cavitation noise will dominate the underwater noise signature of large commercial vessels, and for this reason the rest of this report will focus on ways to reduce cavitation on these ships.

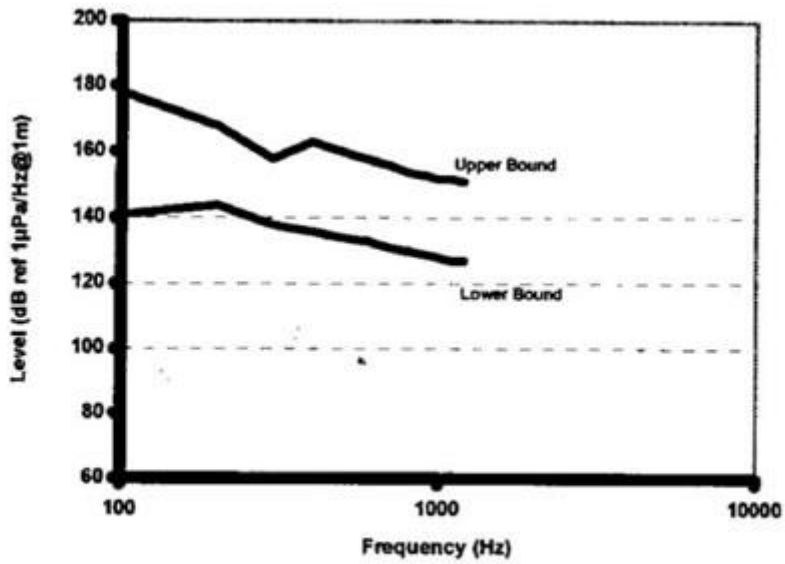


Figure 2.1 Bounds of noise spectra (15 ships)
(Taken from Carlton and Dabbs, 2009, with permission)

Unfortunately it is not possible at this stage to determine in advance which ships are most likely to be the noisiest ones without making hydro-acoustic measurements. It is therefore recommended that a study into the noise of various large commercial ships be undertaken in order to develop guidelines to help to identify the potential noisiest ones.

At this stage, in the absence of detailed information, it is generally assumed that a ship which experiences excessive internal noise and vibration is more likely to generate greater hydro-acoustic noise than one which does not. Although this is probably a reasonable working assumption, it is important to determine whether there is such a link. It is therefore recommended that a study into

the relationship between internal noise and the level of noise propagated into the water be undertaken.

2.2 Factors affecting cavitation performance

As cavitation occurs when the pressure is reduced below vapour pressure, for a given propeller blade design, and a given thrust, the extent of cavitation is roughly related to the blade area, with an increased area resulting in reduced cavitation. This is because a greater blade area can produce the required thrust without the need for an extreme difference in pressure between the face (pressure side) and the back (suction side) of the blade.

Unfortunately, increasing blade area increases the torque required to rotate the propeller. Hence, for merchant ships greater efficiency is possible with lower blade area, and so a small amount of cavitation is associated with the optimum propeller design. This must not be excessive, however, as when the level of cavitation is increased it can reduce the thrust, and can also cause erosion, both on the propeller, and in some cases, on the rudder. Standard empirical methods are available, such as the Burrill Chart (Burrill and Emerson, 1978, reproduced in Carlton, 2007) which can be used to estimate the required blade area as a function of thrust (or power) for a given area of cavitation.

The other major contributor to the cavitation performance of a propeller is the flow into it. As the propeller rotates at the stern of the ship it will experience vastly varying inflow, known as wake, caused by the hull ahead of it. Typically, for a single screw propeller the axial velocity into the propeller at the top of the circle is much lower than the axial velocity at the bottom. In addition, there will be a tangential component of the flow into the propeller, which will be quite different at the top of the propeller disk compared to the bottom. This means that the angle of attack of the propeller blade will be constantly varying through the cycle and will not be at the optimum value. Although it is well known that non-uniform wake can have a major influence on the operation of the propeller, and on propulsive efficiency, the effect of this on hydro-acoustic noise generated by a cavitating propeller is not fully understood. It is therefore recommended that this be investigated.

A typical example of an axial wake diagram for a single screw ship is given in figure 2.2, courtesy of Stone Marine Propulsion Ltd. The lines of contours represent the ratio between the ship speed, and the flow velocity at the propeller disk (without a propeller present). As can be seen the axial flow velocity reduces to as little as 20% of the ship speed. More importantly, the flow velocity is reduced to 30 – 40% of the ship speed over a large range of the top of the propeller disk, but is about 80 – 90% of the ship speed for a corresponding radius over the bottom of the disk.

This flow of water into the propeller, combined with the lower static pressure (due to hydrostatic head) for a blade at the top of the cycle can often result in fluctuating cavitation, with cavitation occurring at the top, but not at the bottom of the cycle. In any case, the cavitation extent for each blade will vary throughout the cycle. This will affect the noise by providing a component corresponding to the blade rate (and harmonics).

Thus, ships designed to reduce cavitation occurring will have well designed after bodies, with as uniform a flow into the propeller as possible. This is very important, and cannot be overstressed as a major factor influencing propeller cavitation performance.

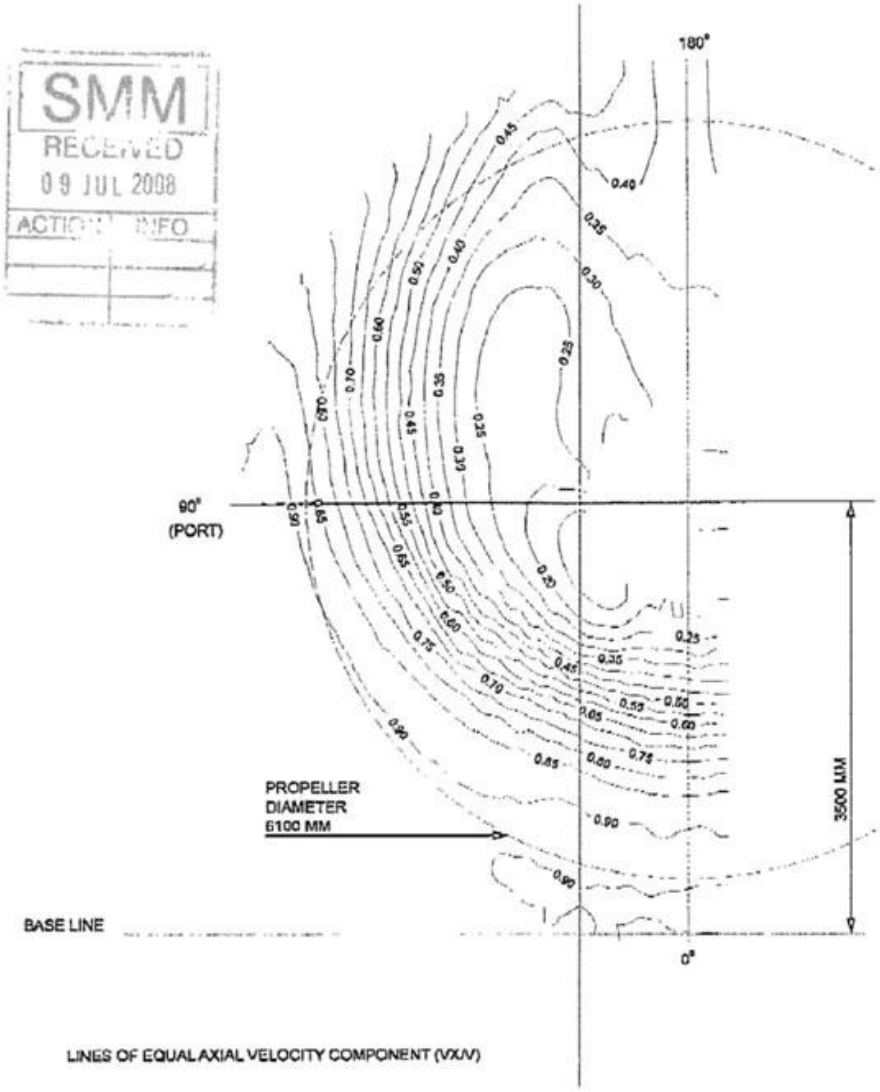


Figure 2.2 Typical wake diagram for single screw merchant ship (Courtesy of Stone Marine Propulsion Ltd)

2.3 Cavitation assessment

The cavitation performance of a propeller cannot be assessed at model scale in a conventional towing tank because cavitation occurs when the local pressure has been reduced to the vapour pressure of water. Scaling this properly means that the atmospheric pressure above the water surface would need to be reduced at model scale. Although there is one such facility in the world, at MARIN, in the Netherlands, this is clearly very expensive, and not a common approach. Instead, most of the propeller testing that is conducted makes use of a cavitation tunnel, where the water is circulated in the vertical plane, with the test section at the top of the loop. The pressure in the tunnel can be reduced to enable the correct scaled cavitation number.

The larger cavitation tunnels are big enough to fit a truncated hull model in front of the propeller to correctly simulate the wake flow, which as discussed in Section 2.2 is of critical importance to the propeller performance. The wake is obtained using a grid arrangement in the smaller cavitation tunnels.

There are many such facilities around the world, however the majority of them are not ideal for measuring hydro-acoustic noise. Most military hydrodynamic establishments have specialised cavitation tunnels designed with as small a background noise as possible, with the express purpose of measuring noise. However, as the noise generated by merchant ships is much greater than that generated by warships it is possible in some cases to use a conventional tunnel to make useful measurements. See, for example, Atlar et al (2001). It is recommended that more noise measurements on commercial propeller designs be made in cavitation tunnels and correlated with full scale measurements.

When propellers are tested for cavitation performance in a cavitation tunnel the usual procedure is to observe the extent of the cavitation on both faces of the propeller blade, and record these by using either sketches or photographs. These records will typically be made for a range of propeller positions around the propeller disk. As noted above, the cavitation extent varies, with cavitation generally being greatest when the blade is at the top of the disk.

It is important to recognise that there are different forms of cavitation on a propeller blade, with different characteristics: sheet cavitation; bubble cavitation; cloud cavitation; tip vortex cavitation; and hub vortex cavitation. The first three of these cavitation types can occur on the back (suction side) or the face (pressure side). These are described well in many text books on the subject – see for example Carlton (2007), or Breslin and Anderson (1994).

As the main reason to avoid cavitation on large merchant ships is to prevent cavitation erosion on the propeller or rudder, it is this aspect of cavitation that designers tend to focus on. Currently a lot of research is being conducted in this field, however to date it is not possible to categorically state whether a particular form of cavitation will cause erosion, or not (Bark et al, 2004, and Carlton, 2009).

Until the recent past, it was generally thought that face cavitation was more erosive than back cavitation, and hence propellers tended to be designed with a large margin against face cavitation. Recent improvements in understanding have suggested that this may not be the case, leaving room to improve propeller blade design. Research is ongoing, as there is a considerable lack of understanding of the different types of cavitation and the effect of these on erosion and noise. It is recommended that this be pursued further, particularly for large merchant ships.

It is also worth noting that according to Carton (2009) only '..some 5% or so of newbuild projects have the benefit of resistance and propulsion and propeller cavitation model testing during their design and construction phases.' Thus, it is hardly surprising that many merchant ships end up with far greater noise levels (as well as possibly greater vibrations and lower efficiency) than would be possible with an optimised design.

2.4 Propeller singing

In some cases propellers can generate very high pitched notes, known as propeller singing. This is caused by the shedding frequency of the trailing edge vortices coinciding with the structural natural frequency of the trailing edge of the propeller (Carlton 2007). Audible singing can occur from approximately 10 – 1,200 Hz, although it has been suggested that this could be as high as 12 kHz (HyroComp, 2005).

Generally when singing occurs it does so over a limited range of propeller rpm. However, it can be so severe that it propagates into the vessel, and can cause annoyance to those on board the vessel.

Propeller singing has no known adverse effect, other than the noise generated, and as such it is possible that some owners may not even be aware that it is occurring. As any effects on propeller efficiency are negligible, there are no incentives for owners to fix a singing propeller, unless the noise transmitted into the ship is unacceptable to the crew.

Prediction of whether singing will occur, or not, is very difficult at the design stage, and there is at least one (classified) case of a warship propeller which exhibited singing.

Fortunately, however, singing is usually very easy to cure. The normal procedure is to cut a very small section obliquely from the trailing edge of the propeller blade, leaving the trailing edge flat, with

sharp corners on both the face (pressure side) and the back (suction side). The resulting shape is often referred to as an anti-singing trailing edge.

Clearly, care needs to be taken to ensure that the resulting trailing edge is not too thin, however this procedure will normally cure the problem, and can easily be undertaken during a routine dry dock (Carlton 2007).

2. 5 Manoeuvring and harbour performance

When ships are manoeuvring their propellers will be operating well away from the design condition, and it is possible that the noise generated due to cavitation will be excessive. However, this is not in the scope of the present study, and is therefore not considered further here.

2. 6 Vessel load condition

Propellers are generally designed for the full load condition. However, few ships spend all their time at the full load condition.

Bulk carriers and tankers typically travel from the loading port to the destination port in full load, and then back again empty. As most of the mass of a loaded ship is the cargo, or deadweight, when a ship is empty it can be floating very high in the water, with minimal draught. This would cause problems with steering, propulsion, and slamming in a seaway. As a consequence ships are provided with the ability to take on sea water as ballast, to partly compensate for this.

However, for a range of practical reasons the ship is never really loaded close to its full load condition when in ballast. Consequently, the propeller is much closer to the surface, and in fact the tip of the propeller will often be above the waterline. As cavitation is dependent on the actual pressure on the blade, and as this will be lower due to the smaller hydrostatic head, cavitation is likely to be significantly worse for a vessel in ballast than in full load.

In addition, when a ship is in ballast it is usually trimmed by the stern. This generally has a significant detrimental effect on the wake field to the propeller, further worsening its cavitation performance.

The combination of being closer to the surface, and the poor wake field, both tend to counteract any possible advantages of the propeller being lighter loaded due to the ship being in ballast. This is not particularly well understood at present, and it is recommended that this be investigated further.

If the tip of the propeller is above the water surface the propeller will behave somewhat like a surface piercing propeller. This will generate ventilation2, and increased noise. There is little data available regarding the noise generated from a surface piercing propeller, however it is known anecdotally to be noisy (although this is probably more to do with airborne noise than waterborne noise). It is recommended that this is investigated further.

Hence it is likely that a tanker or bulk carrier in ballast will generate more hydro-acoustic noise than one in full load. This has been shown to be the case in the limited data available at model scale (Mutton et al, 2006) and at full scale (Wittekind, 2008).

Unfortunately, the ability to install additional ballast is limited. As oil and most dry bulk cargoes have densities close to seawater they occupy most of the space within a large tanker or bulk carrier when loaded. This leaves little additional space for ballast when the ship is unloaded. The alternative of making use of cargo space for ballast when it is empty is difficult, and has been banned for tankers due to the problems associated with mixing of residual cargo oil with ballast water.

Further constraints are the need to achieve adequate draught at the bow to prevent slamming in a seaway, and the need to distribute the ballast over the ship length to prevent excess loading on the hull girder. Poor loading has been known to cause at least one bulk carrier to break in half!

In addition to the two extremes of full load and ballast, many ships operate at part load. For many ships, including bulk carriers, this could be due to the need to restrict the draught to use a particular port, and for others, such as containerships, this may simply be because the ship has been filled with cargo of lower density, and hence it is not down to its marks. It is unknown what effect these smaller changes in draught have on the hydro-acoustic noise generated.

Notes

1 Cavitation occurs when the local pressure is lowered to the vapour pressure of the water

2 Ventilation is caused when air is drawn into the water from the free surface, whereas cavitation is caused by the pressure being lowered to vapour pressure locally.

To be followed in the next days

Inséré le 12/07/13 OPEN FORUM Enlevé le 12/08/13

Les négriers du Havre-de-Grâce

par Jacqueline et Claude Briot membres du Centre Havrais de Recherche Historique

Quelle fut au juste la part du Havre dans la déportation de plusieurs millions d'esclaves Noirs de leur savane africaine vers les plantations et les gisements du nouveau monde ?

En-tête du rôle d'équipage du navire **Les Amis de la Constitution,** *construit au Havre en 1787 pour la Compagnie du Sénégal « filiale » de la Compagnie des Indes.*
En haut, à gauche de la photo : mention des nègres traités. Doc. ADSM.

Il est possible aujourd'hui, grâce au Répertoire des expéditions négrières françaises au XVIII de Jean Mettas, de mieux cerner cette question, ce qui n'était pas évident avant la publication de ce monument de recherches.

S'il est indéniable que Nantes se tailla la part du lion, on peut dire que Le Havre-de-Grâce disputa à Bordeaux et à La Rochelle le rang de second port négrier de France . Le Mettas recense : 1 427 voyages triangulaires au départ de Nantes, 427 de La Rochelle, 399 de Bordeaux, 392 du Havre, 216 de Saint- Malo, 149 de Lorient, 125 d' Honfleur, 82 de Marseille, 44 de Dunkerque...

En groupant Le Havre et Honfleur, ce sont donc plus d'un demi-millier de voyages au départ de l'estuaire de la Seine pour les colonies françaises d'Amérique qui ne s'effectuèrent pas en droiture. Jean Mettas mentionne 95 230 nègres traités par les navires du Havre-de-Grâce entre 1713 et 1792, au cours de 306 expéditions maritimes représentant 58 997 tonneaux de jauge, soit la moyenne de 1,6 nègre au tonneau, laissant à chaque esclave un volume de 1,77 m3. Ce qui n'était pas toujours le cas : la Seine de chez Foache, 260 tonneaux, traita 736 nègres en 1778, ce qui leur laissait moins d'un mètre cube, en comptant l'équipage.

Les 86 voyages du Mettas pour lesquels ne figure pas le nombre de Noirs traités, ni au départ de la Côte d'Afrique, ni à l'arrivée aux colonies d'Amérique, correspondent à une capacité de transport de 13 433 tonneaux, ce qui permet d'avancer l'hypothèse qu'en réalité le nombre total d'esclaves traités par les navires du Havre dépasse largement les cent mille selon le calcul suivant : 13 433 tonneaux x 1,6 nègre /tonneau + 95 230 nègres = 116 723.

Toujours selon le Mettas, 89 981 nègres sur les 95 230 recensés survécurent à l'épreuve, soit une perte d'environ 6 % . Il est intéressant aussi d'examiner le nombre moyen de nègres par voyage. Pour les navires du Havre il serait donc de : 116 723 nègres : 392 voyages = 298.

Si on applique ce résultat aux navires de Nantes, pour la même période, le premier port négrier de France aurait traité : 298 nègres x 1 42 7 voyages = 425 246 nègres, ce qui est une moyenne entre le demi-million des Derniers Négriers de Louis Lacroix et les chiffres cités par ailleurs.

Les armements havrais

Au cours du xviiie siècle, quelque 68 honorables maisons du Havre-deGrâce armèrent au moins 230 navires pour la Côte d'Afrique et les colonies d'Amérique. Quand on sait que pour un navire employé à la traite, il fallait parfois en envoyer un ou deux supplémentaires, en droiture pour ramener au Havre les denrées coloniales troquées contre les esclaves par le navire de traite... c'est dire combien ce commerce de bois d'ébène, têtes d'Inde ou acquis de Guinée, était juteux.

La moitié de ces armateurs du Havre le firent cependant de façon artisanale avec un seul navire . La maison Bégouen-Demeaux qui affecta à ce traffic 15 navires jaugeant en tout 2 995 tonneaux est souvent citée comme ayant été le plus grand armateur négrier du Havre. Il y eut cependant plus grande qu'elle. David Chauvel et fils armèrent 28 navires à la traite représentant près de 5 000 tonneaux de jauge, Feray et consorts : 19 navires pour plus de 4 000 tonneaux, Foache : 18 navires pour environ 3 500 tonneaux.

Puis venaient après BégouenDemeaux : la Compagnie du Sénégal avec 14 navires pour 2 870 tonneaux, Louis Legrand et Cie : 13 navires pour environ 2 000 tonneaux.

Ces six principaux armateurs possédaient 107 navires pour 20 640 tonneaux, soit pratiquement la moitié de la flotte négrière havraise dont on trouvera les détails en encadré.

ARMATEURS	NAVIRES	NBRE	TONNAGES
DELAHAYE ET CONSORTS	*Le Prince Glace, le Prince d'Angole, l'Aimable Sophie, le Jason*	4	705 tx
CHARLES POULLET FILS	*L'Homme Instruit, le Héros, le Mentor, le Comte de Bercy*	4	680 tx
BASSAC ET CONSORTS	*La Marthe, la Rosalie, l'Augustine*	3	657 tx
DELONGUEMARRE, DELESALLE FRÈRES	*La Médée, l'Ultor*	2	650 tx
GRÉGOIRE	*le Romieux, la Nérée, la Belle Arsène*	3	620 tx
DORANGE	*La Jeune Émilie, le Prince Passadore, l'Ami de la Loi*	3	600 tx
MARTEL PÈRE	*Le Patriote, le Furet, l'Écureuil, le Saint Cyprien*	4	500 tx
DELANNOY ET DONOVAN	*Les Amis, l'Aimable Louise, le Héros*	3	480 tx
COMPAGNIE DES INDES	*Le Courrier de Bourbon, la Bonnaventure, l'Expédition, la Sérieuse, le Maréchal d'Estrées*	5	440 tx
BEAUFILS PÈRE ET FILS	*Les Trois Frères, le Jeune Frédéric*	2	422 tx
BÉZIERS, CARMICHAEL ET DONOVAN	*Le Lion, le Maréchal de Castries*	2	420 tx
PAVILLON IMPÉRIAL (État)	*Le Piano Forte, le Néréide, le Frédérik*	3	381 tx
RENAULT ET DUBOIS	*La Princesse d'Angole, l'Infant d'Angole*	2	380 tx
LIMOUSIN	*La Marie Élizabeth, la Baronne d'Hyandevanne*	2	360 tx
BEAUFILS ET POUCHET	*Le Jeune Frédéric, l'Apollon*	2	352 tx
EYRIES LECOUVREUR	*L'Anonyme, le Juste, la Belle Bérénice*	3	340 tx
DERREY	*La Marie Victoire, le Superbe*	2	336 tx
DELABRE ET CIE	*L'Aimable Victoire,les Deux Cousins*	2	240 tx
A. COLLEVILLE FILS ET CIE	*L'Arada, la Rose*	2	220 tx
BACHELIER ET FAUBISSON	*L'Elizabeth, le Prince Noir, la Jeune Agathe*	3	216 tx
P. DUMESNIL ET FILS	*Le Dauphin, la Résolution*	2	100 tx
JOSEPH ISABELLE	*Les Deux Cousins*		130 tx
ISABELLE ET COSTE	*Le Moine Ponaty (ex-Prince Noir)*		90 tx
HAVELAND, LEMEZURIER ET CIE	*Le Bosquet d'Or*		224 tx
JEAN BONNEAU	*Le Fidèle*		30 tx
DE BOISSEL ET MOPELLET	*Le Cupidon*		500 tx
J.B. PARAIRE ET CIE	*L'Aigle*		?
GEORGES TANQUEREY	*La Marie-de-Grâce*		250 tx
JEAN-BAPTISTE BONNET	*Le Saint-Philippe*		350 tx
ÉTIENNE LE GUÉROULE DE LA PLACE	*L'Espérance*		105 tx
FAMIN	*Le Laverdy (devenu Princesse d'Angole)*		150 tx
CUISSO	*Le Franc Maçon*		135 tx
LE MESLE	*Les Deux Négrillons*		180 tx
LAMAIGNÈRE	*Le Prince Thom*		85 tx
LECOUVREUR ET GUÉRARD	*La Concorde*		300 tx
JACOB PAPILLON FILS ET LARTOIS	*Le Jeune Jacob*		150 tx
CELLERY ET LEMIRE	*La Belle Provençale*		130 tx
LESEIGNEUR ET ALEXANDRE	*L'Abracadabra (ex-Aimable-Françoise)*		180 tx
BLANCHE ET FILS	*Le Flesselles (devenu les Bons Amis)*		116 tx
LACOUDRAIS, BAUDRY ET LEPREVOST	*Le Stanislas*		218 tx
MESNAGER, DOULLE ET LECOUVREUR	*La Danaé*		120 tx
CARMICHAEL	*La Bassa*		55 tx

ARMATEURS	NAVIRES	NBRE	TONNAGES
FAUCAUNIER BEAUVOISIN ET CIE	*Le Ducrest*		135 tx
A. PIGEON FILS AINÉ	*Le Jeune Mercure*		170 tx
LAENT AINÉ	*Le Hazard*		220 tx
COLOMBEL AINÉ, BARABE ET BESONGUET	*L'Alligator*		260 tx
BRUNAUD FRÈRES ET CIE	*Les Jeunes Virginies*		133 tx
MASSIEU DE CLERVAL	*La Jeune Caroline*		142 tx
LARTOIS ET VIEILLOT	*Le Désir*		183 tx
DECAEN ET MORCHOINE	*Le Neptune*		242 tx
LE PRÊTRE	*L'Américain du Havre*		?
J.-F. DESCHAMPS ET CIE	*Le Français*		161 tx
X (non identifié)	*La Comtesse d'Emery, le Saint-Marin, la Côte d'Angole, la Gracieuse*		?
	Au total : environ 230 navires pour approximativement 38 500 tx		

Sont par ailleurs suspectés d'avoir effectué des voyages triangulaires : *Le Solide* armé par Gauvain et Fils, *La Jeune Agathe* armée par Eustache Frères et *La Victoire* par Étienne et Bonnaventure Lemoine.

Cette liste de navires du Havre-deGrâce couvre la période de 1713 à 1792, aussi est-il normal de voir apparaître plusieurs fois le même nom. Les armateurs donnaient facilement à leurs navires neufs le nom d'un bâtiment pris par les Anglais ou perdu par événement de mer.

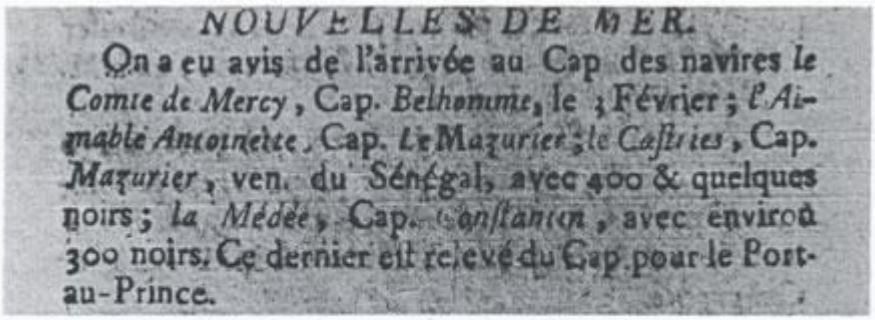
Selon Louis Brindeau : « Le Havrede-Grâce et ses navires », les armateurs du Havre auraient traité 2 912 nègres en 1767 produisant 3 137 000 livres. La livre avait, à cette époque, une valeur inférieure à celle du franc . Ces chiffres sont extraits des almanachs de la Marine pour le Havre-de-Grâce, on peut donc les tenir pour fiables.

Partant d'un prix moyen de 1430 F par esclave vendu, les négriers du Havrede-Grâce réalisèrent un chiffre d'affaire d'environ 170 millions de francs. Pour fixer les idées, il faut savoir qu'à la veille de la Révolution un capitaine de navire était payé 200 livres par mois, soit 264 F selon le taux de correspondance précédent.

Il n'est pas étonnant, dans ces conditions, que certaines maisons de commerce qui vivotaient avant l'institution de la traite, autorisée en France par Louis XIII et encouragée par ses successeurs, purent accéder à l'opulence.

Le Roy d'Angole

Certains navires négriers du Havred de-Grâce affichaient carrément leur destination par le nom même qu'ils portaient. Ainsi quand La Négresse, Les Deux Négrillons, La Côte d'Angole, Le Roi d'Akim, Le Gorée ou le Prince Passadore, par exemple, partaient du Havre pour la côte d'Afrique et ne rentraient qu'un an ou plus après avec du sucre, du café, de l'indigo, du morfil et de la poudre d'or, on était assuré de se trouver en présence d'un navire de traite.


NOUVELLES DE MER.
On a eu avis de l'arrivée au Cap des navires le Comte de Mercy, Cap. Belhomme, le 3 Février; l'Aimable Antoinette, Cap. Le Mazurier; le Castries, Cap. Mazurier, ven. du Sénégal, avec 400 & quelques noirs; la Médée, Cap. Constantin, avec environ 300 noirs. Ce dernier est relevé du Cap pour le Port-au-Prince.

Annonce de l'arrivée à Saint-Domingue de navire négriers du Havre-de-Grâce, dont le Castries, capitaine Mazurier, avec environ 400 noirs.
D'après Le Havre-de-Grâce : Commerce maritime 1789 — BMH.

La durée du voyage n'est pas toujours le critère déterminant pour lever le doute sur la nature du trafic d'un navire suspect. Les rôles d'équipage permettent, pour un certain nombre d'entre eux, du moins après 1764, de lever ce doute. En effet sur ces rôles est apostillé le nombre de nègres traités et le nom de leur réceptionnaire aux colonies françaises d'Amérique.

C'est ainsi que grâce au rôle d'équipage et au registre d'immatriculation des navires conservés aux Archives Départementales de la Seine-Maritime (6P6-18 et 6P5-51) ainsi qu'au journal de navigation tenu par Augustin David Osmond, second capitaine à bord du Roy d'Angole, il est possible de reconstituer la carrière négrière de ce navire.

Construit à Bayonne en 1784, le Roy d'Angole était un trois-mâts barque à deux ponts et quatorze canons, d'un port de 356 tonneaux, acheté par MM. Mangon et Laforest du Havre-deGrâce. Armé pour la première fois en ce port et pour la côte d'Angole le 14 février 1789, son équipage était composé de 60 hommes répartis ainsi :

ÉQUIPAGE DU *ROY D'ANGOLE*

8 OFFICIERS MAJORS	
Un capitaine à	200 livres/mois
Un 2e capitaine à	120 livres/mois
Un lieutenant à	80 livres/mois
Un lieutenant à	60 livres/mois
Un lieutenant à	50 livres/mois
Un enseigne à	45 livres/mois
Un chirurgien à	80 livres/mois
Un 2e chirurgien à ...	60 livres/mois

7 OFFICIERS MARINIERS	
Un maître charpentier à	90 livres/mois
Un charpentier à	90 livres/mois
Un calfat à	90 livres/mois
Un 2e maître à	70 livres/mois
Un patron de chaloupe à	60 livres/mois
Un canonnier à	60 livres/mois
Un 2e chapentier à ...	55 livres/mois

3 OFFICIERS NON MARINIERS	
Un tonnelier à	80 livres/mois
Un cuisinier à	60 livres/mois
Un armurier à	45 livres/mois

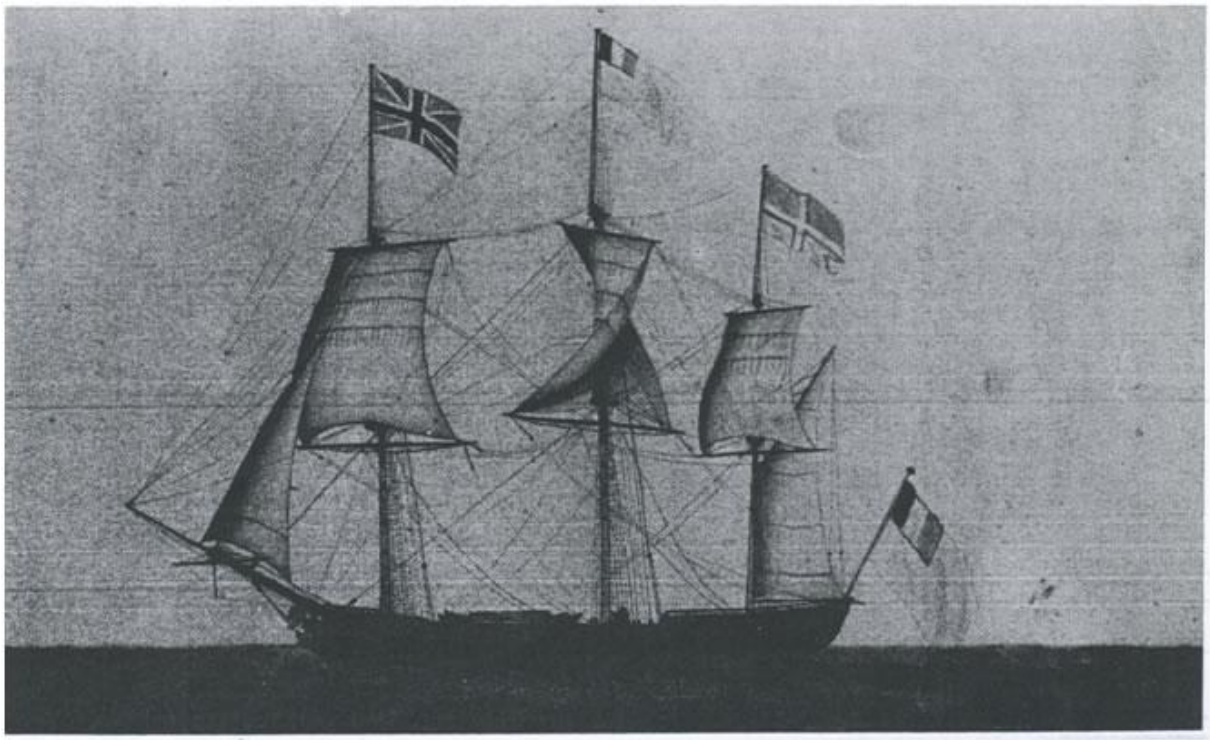
34 MATELOTS	
Un matelot à	45 livres/mois
Deux matelots à	42 livres/mois
Seize matelots à	40 livres/mois
Deux matelots à	38 livres/mois
Deux matelots à	36 livres/mois
Un matelot à	35 livres/mois
Un matelot à	34 livres/mois
Trois matelots à	33 livres/mois
Quatre matelots à	30 livres/mois
Deux matelots à	24 livres/mois

6 MOUSSES	
Deux mousses à	14 livres/mois
Quatre mousses à	12 livres/mois

2 VOLONTAIRES	
Un volontaire à	30 livres/mois
Un volontaire à	24 livres/mois

Le Roy d'Angole quitta Le Havrede-Grâce le ter mars 1789 et arriva à la côte d'Afrique le 9 mai. Il mit longtemps pour effectuer sa traite puisqu'il n'en repartit que le 26 novembre avec 500 nègres .A l'adresse de M. Pavillais à Port-au-Prince, qu'il atteignit le 15 janvier 1790.

A son retour au Havre, le 28 juin de cette même année, il n'y avait plus à bord que 43 membres d'équipage. Pourtant 8 hommes avaient été recrutés pendant le voyage, mais 6 étaient morts, 5 avaient déserté et 14 avaient été congédiés. La division, savamment entretenue à dose homéopathique au niveau de la solde, parmi l'équipage, n'était pas un élément de cohésion.



Le **Roy d'Angole** *de Mangon Laforest, sortant du Havre-de-Grâce le 9 mai 1792 pour un voyage triangulaire. D'après le journal de bord de David Osmont, second capitaine — BMH.*

Réarmé le 8 mai 1792 pour un second voyage de traite, Le Roy d'Angole, capitaine Lamoisse, sous-lieutenant de vaisseau et chevalier de Saint-Louis, appareilla du Havre le 9 mai pour la côte d' Angole avec cette fois 52 hommes d'équipage. Les 68 jours de traversée jusqu'à Malembé s'effectuèrent sans incident majeur, si ce n'est que le 49e jour, par vent variable du sud-sud-ouest, le grand mât de perroquet se rompit sous le chouque et que le mât de misaine cassa le 56ème jour. Mais cela faisait partie des aléas du métier.

Malheureusement, le journal de navigation du Roy d'Angole conservé à la bibliothèque municipale du Havre (MS 517) a été amputé de ses feuillets les plus intéressants. Deux pages du manuscrit concernant la traite à Malembé et trois pages sur la vente des nègres à Antigue (îles au vent) ont été arrachées.

Le navire quitta Malembé (Malimbé) le 27 novembre 1792. Sa traite avait duré plus de quatre mois, laissant sur rade L'Actif du Havre, capitaine Fleury, Le Bon Ménage, capitaine Bazin, La Bonne Henriette, capitaine Laperche et un bâtiment anglais L'Etiot.

Quatre matelots, un novice et deux nègres moururent pendant la traite.

Il n'a pas été possible de retrouver le rôle d'équipage de ce second voyage, mais si on en croit Augustin David Osmond qui écrivait dans son journal, le 7ème jour après le départ de Malembé : « Il se consomme journellement pour les nègres, 4 baquets et demi d'eau, 500 livres de fèves, 90 de riz et 20 de suif » on peut estimer à plus de 500, cette fois, le nombre d'esclaves traités.

Le 9ème jour de la traversée océane, le novice perruquier, un dénommé Haubert, décéda de fièvre maligne. Deux jours plus tard, le novice Deparquet, du Havre, mourut dans les mêmes conditions.

Le 17ème jour, soit le 14 décembre 1792, Le Roy d'Angole prit connaissance de l'île de l'Ascension . Le capitaine Lamoisse décida d'y relâcher pour y capturer des tortues afin d' améliorer l'ordinaire. Il se rendit à terre, en reconnaissance, dans le petit canot, accompagné de quatre hommes et dans le plus grand silence. Ils virent au bord de la mer une grande quantité de tortues accouplées. Le capitaine Lamoisse se rendit alors à la caverne faisant office de boîte aux lettres pour les navires de passage . Il y trouva une missive dans une bouteille qu'il remit au capitaine de L'Illustre Président, venant de l'Ile-deFrance, à destination de Dunkerque.

De retour à bord, il expédia six escouades de quatre hommes chacun avec un chalut pour surprendre les tortues dans leurs fonctions amoureuses. Mais la nuit était tombée, belle et fraîche, et les tortues s'étaient retirées au large.

Bredouille, le capitaine Lamoisse poursuivit sa route et le 41ème jour de la traversée, soit le 7 janvier 1793, la Désirade était en vue. Le mercredi 9 janvier, à 3 heures du matin, Le Roy d'Angole mouilla sur la rade d'Antigue (Antigua) par 10 brasses d'eau, fond de sable et morceaux de coquilles. Le correspondant vint le vendredi effectuer l'inspection des nègres. Ce même jour le second capitaine se rendit à terre avec quelques blancs scorbutiques. On reçut des provisions que l'on distribua aux .Blancs et aux Noirs. Le samedi 12 janvier 1793, Augustin David Osmond écrivait dans son journal : « Vu un navire anglais qui louvoyait pour la rade, le vent alors au nord-est. 0 A cet endroit s'intercalaient les trois pages arrachées, trois pages qui devaient décrire la vente des nègres et la prise du Roy d'Angole par les Anglais, le 20 août 1793.
Le journal reprend à la date du 3 juin 1794 et relate brièvement le rapatriement, à Saint-Malo, de l'équipage du négrier havrais qui foula les pavés de la cité des corsaires le 21 juillet 1794 dans une joie indescriptible provoquée par le soulagement d'avoir échappée aux sinistres pontons de la perfide Albion.

Traite au Bénin

Si le journal de navigation du Roy d'Angole n'a pas laissé de détails sur ses opérations de traite, en revanche, les mémoires du capitaine Landolphe (BMH 35 727), commandant La Négresse, construit à Saint-Malo en 1776 pour le compte de la Compagnie de Guyane et armé au Havre par David Chauvel, sont prolixes en la matière.

Mise à l'eau en septembre 1777, bénie le 4 octobre, La Négresse, 500 tonneaux et 20 canons, appareilla de Saint-Malo le 7 octobre pour Le Havre-deGrâce en vue d'y prendre un supplément de cargaison expédiée de Paris et de Rouen ainsi qu'une provision de biscuits d' Honfleur, alors fort estimés.

Au début de novembre La Négresse était finie de chargée et armée en lettres de marque. Appareillée du Havre le 7 novembre pour la côte d'Afrique, elle fit escale à Lisbonne pour y acheter 800 rôles de tabac de 90 livres chacun.


DEPARTEMENT DE NORMANDIE
QUARTIER DU HAVRE
Le Roy d'Angole allant a la Côte d'Angole
N°. 20. ARMEMENT au Mois 1789
RÔLE de l'équipage du Navire Le Roy d'Angole du Havre construit en 1786 a Bayonne du port de 956 tonneaux, armé de 18 canons, tirant d'eau chargé 16 pieds, & non chargé 9 pieds, 2 ponts, gaillard, appartenant aux S. Mangon la fourth & Cie armé au Havre par lesdits Sieurs sous le commandement du S. Lamoisse pour aller à la Cote d'Angole avec 9 mois d'avances, qui doivent courir du jour de la sortie dudit Bâtiment.

Extraits du rôle d'équipage du **Roy d'Angole**, *parti du Havre le 1er mars 1789 avec 60 hommes à bord. De retour le 28 juin 1790 (désarmé le 8 juillet), il n'y en avait plus que 43.*
Ce voyage-là, 500 nègres, comme on peut le constater par la mention se trouvant au-dessus du numéro de registre des Bâtiments, furent traités. Document ADSM.

En février 1778, après quatre mois de traversée La Négresse entra dans la rivière Bénin.

Descendu à terre au village de Gathon, le capitaine Landolphe y prit une maison à loyer afin de fonder une factorerie à l'embouchure de la rivière Bénin pour le compte de la Compagnie de la Guyane. Il prévint le premier des phidors Danikan, qu'il souhaitait créer en ce lieu un vaste établissement propice aux Français avec la protection du roi du Bénin.

Trois jours plus tard, deux passadors (ambassadeurs royaux) vinrent le complimenter pour son voyage et lui demandèrent quel moyen de transport ils devaient mettre à sa disposition pour se rendre à Bénin, le cheval ou le hamac. Le capitaine Landolphe après avoir choisi ce dernier mode de locomotion remit ses cadeaux aux phidors : chapeaux bordés d'or, pièces de mouchoir de Cholet, pièce de Perse, trois brasses de tabac à fumer, une douzaine de pipes de Hollande.

On lui fournit une escorte de trente hommes armés. Des haltes étaient prévues à l'ombre des grands arbres pendant lesquelles il put se restaurer d'ignames cuites, de figues, bananes, de coco et de vin de palme, le tout offert par le roi.

Après cinq heures de chemin, le convoi arrivé à la ville fut reçu par le capitaine général des Guerres, nommé Jabou, dans une grande salle aux murs incrustés de cauris, petits coquillages des Indes qui servaient de monnaie au Bengale et dans le centre Afrique. Mais avant son entrevue avec le capitaine Jabou, le commandant de La Négresse dut se laisser laver les pieds par des esclaves dans de grands bassins de cuivre jaune. On lui servit ensuite un repas abondant en volaille cuite, mouton rôti, ragoûts assaisonnés d'huile de palme et de beaucoup de piment. Jabou possédait plus de dix mille esclaves mais n'en vendait pas. Il commandait une troupe de cinquante à soixante mille hommes. Il reçut en présent du Français un manteau d'écarlate galonné, un chapeau bordé d'or, un collier de corail d'une valeur de cinq cents francs . Le capitaine général des Guerres se déclara très content et promit de protéger les Français dans l'État du Bénin.

Le roi fit apporter au capitaine Landolphe des vivres de toutes espèces dans de grands plats d'étain très propres et couverts d'un linge excessivement blanc, quelques volailles, du mouton cuit, une centaine d'excellents ignames de trois livres chacun, douze poules et douze moutons vivants, quatre gros régimes de figues bananes d'un goût fin et sucré.

A l'heure convenue, deux passadors vinrent chercher le capitaine du négrier pour l'introduire auprès du roi. Vingt cinq nègres armés de sagaies l'accompagnaient. Arrivés à l'enceinte du palais, ils traversèrent plusieurs cours spacieuses dont une renfermait les tombes des rois du Bénin. Un jeune nègre nommé Cupidon servait d'interprète. Le roi apparut au bout d'une demi-heure accompagné de deux jeunes Noirs entièrement nus et armés d'un damas. Ils firent signe aux passadors de se retirer. Le roi était enveloppé de riches mousselines blanches des Indes. Contrairement au Sénégal et sur les rivages de Juda où se portaient les guinées bleues, au Bénin, la mode était au blanc. On s'y défaisait donc avec avantage des bafetas, calicots, toiles de Bretagne étroites, toiles de Rouen et de Cholet. On y vendait aussi avec le même profit le fer en barre, les fusils, pistolets, poudres à feu, pierres à fusils, eaux de vie, tabac à fumer, quincaillerie, couteaux flamands, ciseaux, rasoirs, miroirs et chapeaux bordés d'or.

Le roi fit dire par Cupidon qu'il était satisfait de voir les Français dans ses États, qu'il avait l'intention, non seulement de les protéger, mais encore de leur donner la préférence sur les autres nations. Le capitaine Landolphe fit part au roi de son intention d'élever un fort à l'entrée de la rivière pour protéger un établissement qui serait également profitable à la France et au Bénin qui ne serait jamais, ainsi, privé de marchandises de toutes qualités. Le souverain nègre, frappé par cette détermination, décida d'assembler son conseil composé de soixante vieillards appelés « hommes grands ».

Le capitaine Landolphe lui offrit quatre pièces de Perse et quatre de mouchoirs des Indes, deux colliers de corail, une robe de satin blanc à fleurs d'or et d'argent et une paire de sandales de même étoffe, ces deux objets provenant de la garde-robe de Louis XV, et le tout évalué à cent louis. Le roi du Bénin tomba en extase devant la robe.

Une fête fut organisée suite à la décision du conseil d'accéder à la demande du capitaine français à qui il était accordé autant de terrain que nécessaire pour élever un fort au bord de la rivière dans le village de Gathon, mais que cette concession ne pouvait s'étendre à l'entrée du fleuve Formose, les terres situées sur ces deux rives appartenaient au souverain d'Owhère, indépendant de celui du Bénin.

Après la fête, au cours de laquelle le capitaine Landolphe tenta en vain d'empêcher un sacrifice humain, le roi emmena son invité dans une salle où étaient entassées plus de trois mille dents d'éléphants et lui dit de choisir celle qui lui ferait plaisir.

Le lendemain de son retour à Gathon, le commandant de La Négresse reçut la visite de deux passadors qui lui annoncèrent qu'il devait faire une déclaration de toutes les marchandises embarquées à bord de son navire, et que quarante phidors viendraient de Bénin dans deux jours pour évaluer chaque article et qu'une fois le prix fixé par eux, lui capitaine français n'avait plus la possibilité de l'augmenter. Cette évaluation servait de base aux droits d'entrée exigés par la coutume qui se prélevaient en faveur du roi et des grands de son royaume. Ces droits étaient élevés : un navire à trois mâts payait en pagnes, monnaie de deux francs.

Pour le roi, neuf cents pagnes . . 1 800 F
Pour le capitaine général des guerres, trois cents pagnes . . 600 F
Pour vingt hommes grands, chacun cent pagnes 4 000 F
Pour quarante phidors,chacun vingt pagnes 1 600 F
Pour six saladors (interprètes) chacun vingt pagnes 240 F
Pour quarante carcadors (porteurs) chacun dix pagnes 800 F
Pour trois phidors de Gathon, chacun vingt pagnes 120 F
Plus les divers présents qui s'élevaient à près de 6 000 F
Soit au total : 15 160 F

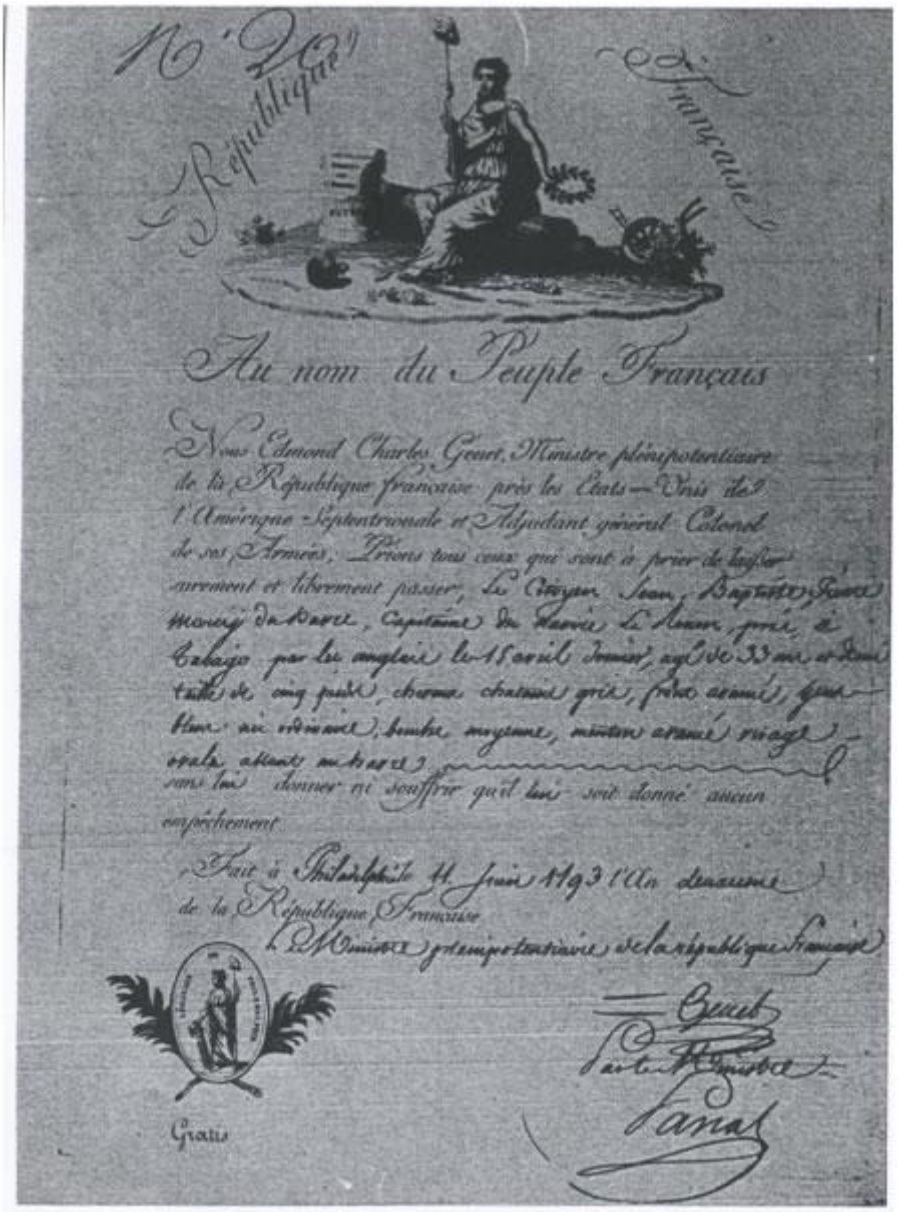
Les quarante phidors de Bénin se réunirent dans le comptoir du capitaine Landolphe et lui réclamèrent chacun un verre d'eau de vie, une pipe et une brasse de tabac. Et tandis qu'ils fumaient, le capitaine de La Négresse fit disposer dans de grands bassins toutes les marchandises apportées afin qu'ils puissent établir le compte en traite.
Il y avait des pièces de mouchoirs de Cholet, d'indiennes, de toiles de Bretagne, de cotonnades de Rouen, de bafetas blanc, de Cholet à robe, de soie satin galet (moitié soie, moitié fil) de Nîmes, de perses des Indes, des rôles de tabac à fumer, des bassins de cuivre, des armes et des munitions, de l'eau de vie, des colliers...

Les estimations terminées, plusieurs coups de fusil furent tirés en l'air pour annoncer l'ouverture de la traite . Les phidors fixèrent à 120 pagnes le prix du nègre sans défaut et à 100 pagnes celui de la négresse bien faite . Après d' interminables palabres, le capitaine Landolphe parvint à ramener ces prix respectifs à 100 et 95 pagnes. La traite fut abondante : 15 à 18 nègres embarquèrent journellement à bord de La négresse, de telle sorte qu'en trois mois la cargaison de 410 Noirs des deux sexes était complète. Le navire pouvait en contenir cinq à six cents, mais le capitaine Landolphe appréhendait les maladies causées par un entassement trop grand.
Il acheta par ailleurs soixante mille dents d'ivoire de diverses grandeurs et grosseurs qu'il paya 15 sous la livre en moyenne, puis prépara son départ avant le retour de la mauvaise saison.
C'est à son retour au Bénin à bord de la Charmante Louise, en 1783, que le capitaine Landolphe établit son fort dans l'île de Borodo sur la rive gauche de l'embouchure de la rivière Formose, dans le royaume d'Owhère. Puis, s'associant avec le négociant Marion Brillantais, il créa avec lui la compagnie d'Owhère et de Bénin à laquelle Louis XVI accorda le privilège exclusif du commerce sur les rivières Forcados et Bénin et dans les terres adjacentes. Le roi mit alors à leur disposition le vaisseau de 400 tonneaux, le Pérou et deux corvettes, L'Afrique et la Jeune Charlotte destinées à remonter les rivières et à commercer à l'intérieur du pays. Le comptoir de cette compagnie prospéra en achetant les cargaisons des vaisseaux portugais, anglais et danois qui fréquentaient les parages, en échange d'esclaves, d'huile de palme et d'approvisionnement en eau, bois et vivres frais.
Mais la petite colonie ne survécut pas aux guerres de la Révolution et les Anglais s'emparèrent du fort Borodo en 1792. Blessé à la jambe, Jean-François Landolphe fut d'abord recueilli par le roi d' Owhère jusqu'à l'arrivée d'une goélette française de commerce, L'Amitié, à bord de laquelle il rentra en France.

Instructions au capitaine négrier

Si pour les petits artisans de la traite, le voyage triangulaire représentait une véritable expédition maritime avec des aléas nombreux : malhonnêteté des rois nègres, maladies, naufrages... les compagnies organisées prévenaient, dans la mesure du possible, ces déconvenues en remettant à leurs capitaines, au départ de France, un mémoire détaillé de toutes les instructions utiles à suivre pendant le voyage.

Les archives municipales du Havre conservent « le Mémoire de la Compagnie des Indes pour servir d'Instruction au Sieur Prudhomme, Commandant la frégate Le Maréchal d'Estrées destinée pour le Sénégal et Saint-Domingue si Monsieur de Saint-Robert, Directeur et Commandant Général au Sénégal, le juge à propos » (AMH EE 73).


Au nom du Peuple Français

Nous Edmond Charles Genet, Ministre plénipotentiaire de la République française près les Etats-Unis de l'Amérique Septentrionale et Adjudant général Colonel de ses Armées, Prions tous ceux qui sont à prier de laisser librement et librement passer, Le Citoyen Jean Baptiste Jacques Marcy du Havre, Capitaine du navire Le Rouen, pris à Tabago par les anglais le 15 avril dernier, agé de 33 ans et demi taille de cinq pieds, cheveux châtains gris, front ouvert, yeux bleus, nez ordinaire, bouche moyenne, menton arrondi visage ovale, allant au Havre sans lui donner ni souffrir qu'il lui soit donné aucun empêchement.

Fait à Philadelphie 11 Juin 1793 l'An deuxième de la République Française

Le Ministre plénipotentiaire de la république française

Genet

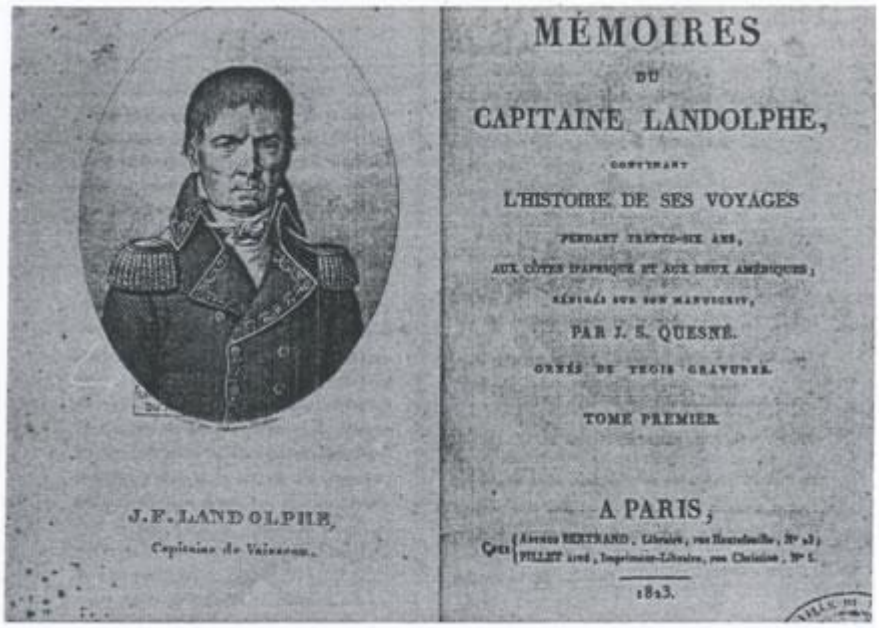
Gratis

Laisser-passer délivré au capitaine Marcy, du navire négrier* Rouen *de chez Collow Frères, Carmichael, pris par les Anglais à Tabago le 15 avril 1793. Doc. ADSM.

Ce navire est parti du Havre-deGrâce le 15 décembre 1720 pour le Sénégal en droiture, conformément aux instructions qui prescrivent au Sieur Prudhomme de ne s'approcher d'un autre bâtiment de la Compagnie sans avoir fait les signaux de reconnaissance suivant le code joint. Arrivé au mouillage dans la rivière du Sénégal, la consigne lui est donnée de remettre le paquet de la Compagnie à la première barque de barre venue ainsi que son rapport de mer, le tout à l'intention de Monsieur de Saint Robert qui devait décider si Le Maréchal d'Estrées irait au cabotage interlope sur la côte d'Afrique, en dehors des concessions de la Compagnie ou effectuerait un voyage de traite pour le Cap Français ou la Louisiane. (Jean Mettas nous indique qu'il embarqua ce voyage-là, 200 nègres à Gorée).

Les instructions donnent la possibilité à certains hommes d'équipage, matelots, calfats, charpentiers, voiliers... de débarquer au Sénégal pour être employés à terre au service de la Compagnie. Ces hommes pouvant être facilement remplacés à Saint-Domingue. Pendant la traversée aux îles d'Amérique le mémoire ordonne au capitaine Prudhomme d'apporter un soin particulier aux nègres et de leur donner deux repas par jour, un de fèves, l'autre de gru, pour les tenir en bon état et veiller

aux maladies. Tous les matins, leur donner un petit coup d'eau de vie et les faire réjouir par quelqu'instrument comme le tambour de basque.

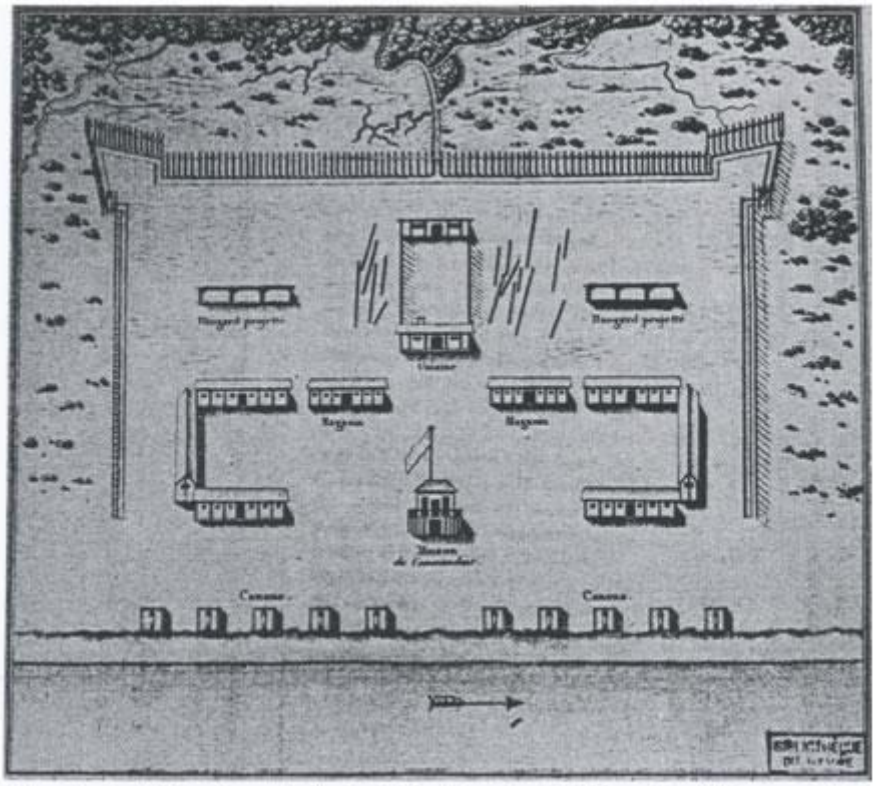


Fac-similé des pages de garde des Mémoires du Capitaine Landolphe — BMH.

Arrivé à destination, le capitaine Prudhomme est tenu de communiquer les instructions aux directeurs porteurs des ordres de la Compagnie française des Indes, soit pour vendre les nègres à Saint-Domingue ou pour les envoyer en tout ou partie à la Louisiane. Si tous ne peuvent être payés comptant, c' està-dire en échange de produits coloniaux, il doit faire établir des billets d'achat à terme à l'ordre de la compagnie. De plus il doit se procurer obligatoirement des certificats en double, triple ou quadruple exemplaires du nombre de nègres transportés aux îles ou à la Louisiane ainsi que de la marchandise provenant de la vente des esclaves, et les faire parvenir par le premier navire de la compagnie en partance pour la France.

Cette dernière instruction est capitale car Au vu de ces certificats, la Compagnie française des Indes ne payait que la moitié des droits des marchandises qu'elle importait en France et percevait une gratification de 13 livres par tête de nègre vendu, que le roi lui accordait.

Sur cette prime royale destinée à encourager ce commerce fort lucratif, trois livres par esclave rendu vivant à destination étaient reversées par la compagnie au capitaine Prudhomme qui empocha, ce voyage-là, 588 livres de gratification.


Plan de Fort Borodo, extrait des Mémoires du Capitaine Landolphe — BMH.

En effet, le 11 août 1721, nous indique Jean Mettas, Le Maréchal d'Estrées débarqua 196 Noirs à la Louisiane . Le pourcentage de perte n' avait été que de deux pour cent, ce qui tend à démontrer que le Sieur Prudhomme, en serviteur zélé de la

compagnie suivit les instructions à la lettre.

Comme on l'a vu précédemment, la Compagnie française des Indes, bien organisée, fut loin d'atteindre au Havre la taille de sa devancière, la Compagnie du Sénégal, ni celle des riches armements privés qui constituèrent la flotte négrière du Havre-de-Grâce.

Inséré le 14/07/13 BOEKEN LIVRES Enlevé le 14/08/13

"The International Maritime Dictionary. Part 2"

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

Bij De Alk & Heijnen verscheen onlangs het tweede deel van"**The International Maritime Dictionary**" samengesteld door P.C. van Kluyven. "**The International Maritime Dictionary**" is een Engelstalig maritiem woordenboek over navigatie, engineering, veiligheid, communicatie, binnenvaart, chartering, verzekering en logistiek. Het boek biedt een vertaling van Engelstalige, maritiem gebonden idiomen en uitdrukkingen naar de meest gebruikte talen in de maritieme wereld, met name het Duits, Frans, Pools, Roemeens en het Kroatisch. Het boek is een werkinstrument ter bevordering van de communicatie in het internationale logistieke gebeuren en zal de veiligheid bevorderen in de maritieme industrie, inzonderheid aan boord van schepen met meertalige bemanningsleden aan boord. Het boek biedt tevens een overzicht met foto's van de meest gebruikte handwerktuigen aan boord met de Engelstalige benaming en biedt bovendien een afzonderlijke lijst met afkortingen. Heel wat gerenomeerde maritieme instellingen werkten mee aan de samenstelling van het woordenboek. Dit boek zou op geen enkel schip mogen ontbreken !

"**The International Maritime Dictionary. Part 2**" (ISBN 978-90-5961-100-9) werd als softback uitgegeven en telt 518 pagina's. Het boek kost 39.90 euro. Aankopen kan via de boekhandel of rechtstreeks bij de uitgeverij De Alk, Postbus 9006, 1800 GA Alkmaar, Nederland. Tel +31.(0)72.511.39.65. internet: www.alk.nl. 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 **....**

Inséré le 14/07/13 OPEN FORUM Enlevé le 14/08/13

Reducing underwater noise pollution from large commercial vessels (part II)

2. 7 Propulsion configuration

There are a range of different propulsion options for large conventional merchant ships.

Propeller types

Two different types of propeller are used: a fixed pitch (FP) or a controllable pitch (CP). Fixed pitch is more common on large merchant ships, and is generally considered to be the more efficient option. With a fixed pitch propeller (FPP) the ship speed is varied by varying the propeller rpm, and reverse is obtained by reversing the direction of rotation of the propeller. With a direct drive to a slow speed diesel engine this means that reverse is only obtained by reversing the direction of the engine. Also, the engine must be stopped to give zero thrust. This takes time, and can make manoeuvring at low speed difficult.

With a controllable pitch propeller (CPP) the ship speed is varied by a combination of varying propeller rpm and varying pitch. This combination is preset as part of the control mechanism. Usually, what this means is that for higher speeds the speed control is achieved by varying pitch, however for the lower speeds the rpm is reduced also. For reverse the engine direction remains the same, and the pitch is put into reverse. This is a lot quicker than stopping the engine, and restarting

in reverse, as required by a FPP, and hence low speed manoeuvring and berthing is a lot easier. For this reason, ferries and other vessels that berth a lot often use CPP.

As the CPP system means that the shaft is always turning it is easier to use this to take power for auxiliaries and hotel loads 3, which is another advantage of the CPP. However, the CPP requires a larger hub diameter, and this can have noise implications with regard to hub vortex cavitation.

One very important aspect to realise is that the CPP changes the angle of the blades, and hence for pitch values other than the design pitch only the position at one radius will actually have the 'correct' pitch. This means that when slow steaming the pitch will not be correct for most of the blade (too high in the outer radii and too low in the inner radii). The result will be poor efficiency, and excessive cavitation, with the resulting increased noise. Berghult (2000) gives some experimental results which demonstrate this very well, with the tip vortex cavitation noise reducing by 15 dB for the 50% load condition compared to the 100% condition when the pitch was kept constant and the rpm reduced, but the noise increasing for the 50% case when the rpm was kept constant and the pitch changed. He demonstrates clearly that: '...when the speed (under the constant rpm mode) is reduced the noise increases!'

Anecdotal evidence suggests that CPP ships may generate more hydro-acoustic noise than FPP ones, however, there are many CPP warships. This shows that a well designed CPP can generate low noise, albeit that this is probably more relevant to the cavitation inception speed than to noise generated during cavitation at high speed operations. There is little data in the public domain about warship noise above CIS, however it is likely that they are still quieter than a noisy merchant ship at the same speed.

Getting the correct control algorithm to give the right balance between varying pitch and varying rpm is considered vital for warship applications. (See, for example van Terwisga et al 2004.) It may be that this aspect could be improved for CPP merchant ships too, and it is recommended that this be investigated.

It should be noted that it is not feasible to retrofit a ship designed for a CPP with a FPP.

Propulsion system

Although most large conventional merchant ships are propelled by direct drive low speed diesel engines, there are some ships, notably cruise ships, that use diesel-electric or gas turbine-electric drive systems. These have the advantages of being able to change rpm on the propeller quickly, including reverse thrust, and of being able to use the same engines to develop power for auxiliaries and hotel loads as propulsion. Many such vessels use podded drives, where the electric motor is housed in an azimuthing pod, and the propeller is mounted in tractor configuration 4. This also gives very good low speed control as the thrust can be vectored as required. Combined with bow thrusters this permits excellent low speed manoeuvring, often doing away with the need for tugs when berthing.

Podded propulsion also provides the benefits of being able to align the pods with the inflow, which is usually upwards at the stern of a vessel (and inwards for twin screws). Together with the tractor configuration this can result in much better flow into the propeller(s). Podded propulsion has been proposed for warships too as the better inflow will reduce the noise and vibration from the propeller (Ball, 2001).

Ships using diesel-electric configuration usually use medium speed, rather than low speed diesels. There is more freedom regarding where the engines are located, and combined with the ability to mount them on isolation systems means that the potential to reduce noise (both internal and external) is increased. This is another reason for using such systems on cruise ships.

Hence, diesel-electric ships have the potential to be far quieter than direct drive diesel ones. However, it is unlikely that such a configuration will be adopted by the majority of the large merchant ship fleet as it is generally more costly, and less efficient for most applications.

Number of propellers

Although by far the majority of merchant ships are propelled by a single propeller, there are a some, including cruise ships and ferries, that have twin screws. It is normal for twin screw vessels to have their propellers rotating in opposite directions. The propeller on the starboard side will rotate in the opposite direction to the one on the port side. The propellers can be turning with the propeller tips moving towards the vessel centreline at the top (inward turning propellers) or with the propeller tips moving away from the vessel centreline at the top (outward turning).

Usually the choice of either outward turning, or inward turning is dependent on efficiency at the design speed range, although sometimes the difference in low speed manoeuvring characteristics will have an influence on the choice.

It is interesting to note that a recent investigation into the rotation direction on an existing twin screw vessel found that by changing the direction of rotation from outward to inward resulted in the broadband energy in the 5 to 100 Hz range being reduced by almost 90% (Kinns and Bloor, 2000). This is not to suggest that inward turning propellers will always give such an improvement over outward turning ones, simply to illustrate the difference obtainable from careful analysis.

2.8 Effect of speed

As noted above, most merchant ships will suffer from cavitation as they will be operating above the cavitation inception speed. If these ships were all to operate below this speed then the hydro-acoustic noise levels would be reduced considerably. However, as cavitation inception speed is likely to be around 10 knots, or lower, for many merchant ships, this is clearly impractical. Therefore, merchant ships will be exhibiting some level of cavitation, and so the effect of speed over the cavitating range only will be considered.

Although there is only very limited detailed information about the effect of speed on the hydro-acoustic noise generated by merchant ships, it is clear that in general for a ship fitted with a fixed pitch propeller, reducing the speed reduces the noise. It is recommended that further full scale trials be conducted to investigate the effect of speed on hydro-acoustic noise across a range of vessel types.

Comprehensive experiments were conducted on a military coal carrier fitted with a fixed pitch propeller which showed that for speeds higher than the cavitation inception speed: 'the overall level (in dB) of the noise spectrum increases smoothly with speed according to 104 log (rpm), or about 31 dB per double speed.' (Arveson and Vendittis, 2000). Earlier measurements made on small craft also showed a linear relationship between the noise level in dB and the log of the speed (McCauley et al, 1996). Note that over the speed range being considered the ship speed is roughly proportional to rpm.

More recent work has also shown that increasing speed results in increased hydro-acoustic noise (Wittekind, 2008).

This implies that, in the absence of other data, the relationship between speed and power can provide an indication of how noise output may be affected by changes that result in small increases in efficiency due to cavitation reduction. It is recommended that the relationship between power required for a given speed to the hydro-acoustic noise at that speed be investigated. This could be done in a cavitation tunnel where the delivered power to the propeller could be varied whilst the speed, and cavitation number based on speed, are fixed.

The situation is not so clear for ships fitted with controllable pitch propellers. Whilst results from tests on a cruise ship fitted with controllable pitch propellers generally shows an increase in noise with increasing speed (Kipple and Kollars, 2004), this is not always the case. The reason is that when a ship is fitted with a controllable pitch propeller it reduces its speed not by reducing the shaft revolutions, but by reducing pitch. The problem with this, as explained above, is that the pitch will not be correct over the whole radius of the blade, resulting in inefficiency, and possibly excess cavitation.

As noted above, this can potentially be solved by modifying the combinator algorithm which governs the relationship between pitch and rpm for a given speed. This procedure is adopted by warships, and could potentially be implemented by merchant ships (van Terwisga et al 2004).

Thus, with a few possible exceptions, it is clear that reducing speed will reduce noise for the vast majority of large merchant ships.

PART II – Practical Technologies for Reducing Noise on Merchant Ships

There are a range of technologies that can be used to reduce the hydro-acoustic noise generated by ships. For example, warships and research vessels make use of specialised propellers which are designed to increase the cavitation inception speed. These specialised propellers typically cost about 15 – 20% more than conventional ones due to additional design effort, additional model testing, and better casting and machining.

Unfortunately, many of these noise reducing technologies result in propellers which are less efficient than the existing conventional propellers normally used in merchant ships. These noise reducing technologies will not be dealt with here, as their use would increase the carbon footprint of the vessel, increase the operating costs, and are unlikely to be embraced by commercial ship designers and owners.

Instead, the noise reducing technologies discussed are those which claim to increase the efficiency, and thereby reduce the running costs.

3. Standard propeller technology

3.1 Existing propeller blades

Propeller blades are subject to impact damage, and other defects during their lifetime. Small imperfections, particularly in the leading edge, can reduce the efficiency of a propeller by the order of 2% - obviously depending on the damage (Townsin et al, 1985). Such damage should be repaired during routine dry dockings. In addition, a certain amount of polishing can also be conducted afloat between dockings, which will ensure the propeller remains as efficient as possible.

Further, such imperfections can have a significant effect on the local cavitation, and hence result in an increased level of hydro-acoustic noise. To date this has not been quantified. It is therefore recommended that controlled tests in cavitation tunnels on undamaged and damaged propellers be conducted to determine the effect that various levels of damage will have on the hydro-acoustic noise generated by the propeller.

Repairing propeller blades, whilst in dry dock, is not a particularly difficult task. Although the exact cost will depend on the size of the propeller, and the level of damage, this is likely to be in the order of US$20,000, or thereabouts. It is therefore recommended that this be considered for all vessels as part of their normal dry dock. It has also been suggested that an inspection be conducted every six months (Patience, 2000).

In addition, it has been shown that improving the general surface of a propeller from that typically specified for normal merchant ship use by applying a modern non-toxic antifouling system referred to as a Foul Release system can increase the efficiency for a medium sized tanker (100,000 dwt) by up to 6% (Mutton et al 2006, 2005, Atlar et al, 2002). Such coatings can be effective for in excess of 36 months.

There have been some reports that these coatings can also reduce the noise. Recent measurements in a cavitation tunnel have been inconclusive (Mutton et al, 2006). Whilst there are noticeable noise reductions at some loading conditions for some frequencies this is not always the case. Also, it was noted that when cavitation was more severe (ie in ballast) the effect was less noticeable. Therefore, because it does not appear to reduce the noise in the more extreme cavitation situations, is it is not so likely that this will make a big difference to the noisiest of merchant ships. However, it is recommended that this be investigated further.

It should be noted that if the hydro-acoustic noise were to be continually monitored it may be possible to use this to determine how much deterioration is occurring on a propeller over a period of time. This could then possibly also be used to determine when it would be cost effective to clean and/or repair a propeller to improve its efficiency. This will not be easy to achieve, however it is recommended that it be considered further.

3.2 New propeller design

Propellers are designed for predicted operating conditions, which rarely occur in practice.

Firstly, the design is often optimised for the full power condition, whereas it is likely in practice that the machinery will be operated at a percentage of the maximum continuous rating (MCR), typically 80 – 90% MCR. Secondly, the propeller is designed for a predicted ship speed, and wake distribution. Although these may have been obtained from model experiments, there will always be some uncertainty in model to full scale correlation, and so the actual operating condition will be different to that assumed in the design.

In addition, most propellers are designed for full load condition, in calm seas, whereas many ships operate at lighter draughts in a seaway.

Finally, many owners are adopting 'slow steaming' philosophies, to reduce fuel consumption. This will also mean that the propeller has not been designed for the correct conditions.

Once a ship has been operating for a number of years, if careful records have been taken it will be possible to better understand the actual operating conditions for the propeller, and a redesign undertaken, if appropriate. It may then be possible to modify the existing propeller, or it may be desirable to manufacture a new one.

This may result in better efficiency, and improved cavitation characteristics. Clearly, the level of improvement will depend on how far the actual operating conditions are from those used for the original design.

Depending on the changes that are required, it may be possible to modify the existing propeller.

If it is not possible to make the changes with the existing propeller, then a new one could be manufactured. The cost of a new propeller will depend on the size of the vessel. Whilst it is difficult to get generic estimates, approximate cost for a conventional fixed pitch propeller are given in tables 3.1 and 3.2. These are certainly not claimed to be accurate figures, as the cost will depend on a wide range of design factors, shipping costs, costs of material, and finish required.

Table 3.1 Approximate propeller costs for tankers and bulk carriers

Deadweight (tonnes)	Approx cost (US$k)
30,000	300
70,000	400
110,000	650
200,000	1,300
300,000	1,600

Table 3.2 Approximate propeller costs for containerships

TEU[5]	Approx cost (US$k)
2,000	600
5,000	1,300
8,000	2,000
11,000	2,400

If fitted during a standard dry dock this could take as little as one day, whereas if the ship was to be docked especially for this purpose it would take about seven days (docking, fitting the new propeller, and undocking).

3.3 Dry docking costs

Dry docking costs are very difficult to estimate, as this will depend very much on the size of the vessel, the location, and exactly how long the operation will take.

As a guide, it is anticipated that if a ship needs to be docked to change a propeller then this will take about seven days. The cost for this is will vary between about US$60k and US$200k for a small 20,000 dwt ship to up to US$250k for a 200,000 dwt6 vessel. Dry docking facilities prefer not to tie up their docks for a simply operation like changing a propeller, where they can't make use of much of their labour and hence may well charge a premium.

Changing a propeller during a routine dry dock will cost substantially less than this, but the amount will depend on a number of factors, so it has not been possible to obtain an estimate.

It should be noted that it may be possible to change a propeller without docking the ship, at least for the smaller sized vessels, by trimming it by the bow. This could reduce the cost substantially if it is possible. Again, detailed costs are not available, however one estimate is that it would take about the same length of time, and cost about half the cost associated with docking the vessel.

4. Special merchant ship propellers

4.1. Introduction

As discussed above, cavitation from the propeller is without doubt the most serious generation of hydro-acoustic noise from large merchant ships. Therefore, the best way to reduce this is to make use of a propeller specially designed to minimise cavitation.

Many surface warship and research vessel propellers are designed to avoid cavitation altogether below a given speed, known as the cavitation inception speed (CIS). This results in a propeller which is a few percent less efficient than a conventional merchant ship propeller, and hence is probably not likely to be applied routinely on commercial vessels.

There are, however, some basic principles that can be applied to reducing the propeller noise without decreasing efficiency. Some of these are well summarised by Ligtelijn (2007).

There are also a number of propriety propeller design concepts that claim increased efficiency and a reduction in cavitation/vibration. The cost of these is likely to vary between being the same as a conventional propeller (see tables 3.1 & 3.2), to perhaps 10 – 20% higher.

It is important to recognise that the claims reported by the proponents of these concepts have not been independently verified for this project. Also, although claims of reducing cavitation are made, it is not clear exactly how much these will reduce the external hydro-acoustic noise generated that propagates into the water. Most of the emphasis of the concepts is to increase efficiency, and to reduce noise and vibration propagating into the ship.

However, as noted in Section 2.8 noise levels in dB appear to be roughly linearly proportional to the log of the speed. As power is roughly proportional to the cube of the speed, there is some tentative evidence to suggest that noise levels may be reduced by the cube root of power required for a given speed. It is recommended that this be investigated further.

It is also strongly recommended that dedicated acoustic trials be conducted to confirm the designers' claims.

A selection of well known alternative propeller designs are discussed, however it is important to recognise that there are many others, and that different approaches may suit different vessels.

4.2. High skew propellers

One generally accepted way of reducing the vibration and fluctuating noise from a propeller is to increase its skew. A photograph of a highly skewed propeller is given in figure 4. 1, courtesy of MAN Diesel A/S Denmark. This has the combined effect of causing the blade to pass through the varying wake field (particularly near the top of the cycle) in a more gradual manner, and in improving the

cavitation pattern on the blades. Together with reduced tip loading, very highly skewed propellers can have a significant influence on reducing propeller induced vibration (Breslin and Anderson, 1994). Highly skewed propellers are commonly used in warships to reduce noise and vibration. Skewed propellers are also used in many high powered merchant ships where propeller induced vibration may pose a problem.

Notes:

3 Hotel load is the load required to run the ancillary services.

4 Tractor configuration is where the propeller is ahead of the pod, and pulling, rather than pushing. This means that the presence of the pod has minimal influence on the wake into the propeller.

5 Twenty foot equivalent units.

6 Deadweight (tonnes).

To be followed in the next days

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Reducing underwater noise pollution from large commercial vessels (part III)

Whilst high skew can reduce blade rate excitation, it is noted that it may have a counterproductive effect on the formation of vortex types of cavitation, and hence too much skew may cause broadband excitation (Ligtelijn, 2007). It is recommended that the effect of skew on a propeller noise for a typical merchant ship under normal cavitating operations be investigated.

The cost for a typical skewed propeller will be similar to that of a conventional propeller, although the costs for a very highly skewed propeller may be 10 – 15% greater.

Figure 4.1 Highly skewed propeller
(Photography courtesy of MAN Diesel A/S Denmark)

4.3. Contracted and loaded tip propellers

The Contracted and Loaded Tip (CLT) propeller is offered by the Spanish designer, SISTEMAR. These propellers are designed with an end plate which reduces the tip vortices, thereby enabling the radial

load distribution to be more heavily loaded at the tip than with conventional propellers. In turn, this means that the optimum propeller diameter is smaller, and there is the possibility of reducing cavitation. However, the propeller needs to be designed very carefully.

Figure 4.2 Typical CLT propeller (Courtesy of SISTEMAR)

A photograph of a typical CLT propeller is given in figure 4.2.

Although there has been some academic work done on the optimisation of propellers with end plates (de Jong 1991) the information on the performance of CLT propellers is based on that provided by SISTEMAR (SISTEMAR, 2005).

SISTEMAR (2005) refers to comparative trials on two sister ships (164,000 dwt bulk carriers) where the ship fitted with the CLT propeller required 12% less power for the same speed.

This same article also refers to a retrofit of CLT propellers to a Fortuny, a twin screw fast ferry built in 2001 with a length between perpendiculars of 157m, and a displacement of 15,327 tonnes. This vessel had been suffering from vibration problems. After fitting the CLT propeller reductions in power required from 11% at 21 – 241/2 knots to 30% at 15 knots, together with considerable reductions in the pressure spectrum from the propeller are claimed.

According to SISTEMAR the cost of a typical CLT propeller is likely to be about 20% more than a conventional propeller. The cost of eight blades for Fortuny was about US$325k (in 2005). Conventional blades for a similar sized ferry would probably cost about the same today.

Figure 4.3 Kappel Propeller (Courtesy of MAN Diesel A/S, Denmark)

4.4. Kappel propellers

Kappel Propellers are another approach to modification of the propeller tip to reduce tip vortices. In this case the tips are smoothly curved towards the suction side of the blades and increases in efficiency of approximately 4% are claimed (Anderson, et al, 2000). A photograph of a Kappel propeller is given in figure 4.3, courtesy of MAN Diesel A/S, Denmark.

Although it is reported by Andersen et al (2000) that a Kappel propeller can be used to reduce cavitation, and increase efficiency, recent correspondence with MAN Diesel A/S Denmark has suggested that this may not be the best approach to reducing hydro-acoustic noise. It is considered that this concept ought to be studied further.

4.5. New blade section propellers

The New Blade Section (NBS) propeller is referred to as a high efficient propeller which the designers claim can provide higher efficiency and superior cavitation performance when compared to a

conventional propeller due to an improved blade cross section. It also has a smaller diameter, permitting a lower ballast draught to satisfy propeller tip immersion (Sasaki and Patience, 2005).

There is no reason why such a propeller would be more expensive initially than a conventional propeller, and it is claimed that as it produces less vibrations the overall capital cost of the propulsion system is less.

5. Propeller hub caps

5.1. Introduction

A propeller generates vortices from its hub, which reduce its efficiency, and are prone to cavitate. The magnitude of these vortices will depend on the blade radial loading distribution, and on the size and design of the hub. Vortices from the hub tend to be more steady than those generated from the propeller tips, and consequently have an influence at the higher frequency range, rather than direct harmonics of the blade rate frequency.

A recent investigation has shown how properly designed hub caps can reduce the hub vortex cavitation, and consequently the hydro-acoustic noise, as well as improving propeller efficiency, particularly for controllable pitch propellers (Abdel-Maksoud et al, 2004).

It is not expected that the cost of a well designed hub cap would be much greater than one that has not been so well designed.

5.2. Propeller Boss Cap Fins

Propeller Boss Cap Fins (PBCF) are small fins attached to the propeller hub which are designed to reduce the magnitude of the hub vortices, thereby recovering the lost rotational energy, and reducing the cavitation. This concept has been developed by Mitsui OSK Lines Ltd. A photograph of a PBCF fitted to a propeller is given in figure 5.1.

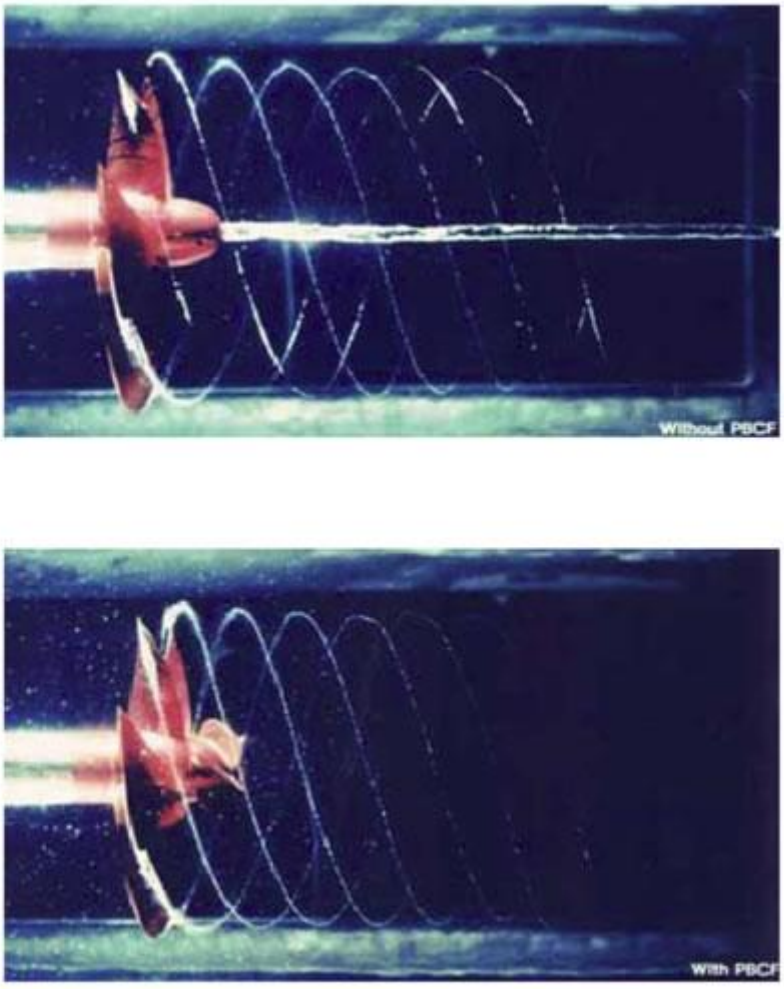

Figure 5.2 Effect of Propeller Boss Cap Fins on cavitation (Courtesy of Mitsui O.S.K.Techno-Trade)

There are a number of publications, largely by the proponents, discussing the benefits of the PBCF, however these are also well summarised by the

International Towing Tank's specialist committee on unconventional propulsors (ITTC, 1999). Gains in efficiency of up to 7% have been reported, although gains of the order of 3-5% appear to be more common. An independent assessment has suggested gains of up to 3% (Mewis and Hollenbach, 2006).

Typical examples of costs for various ship types are given in table 5. 1, taken from information provided by Mitsui OSK Techno-Trade Ltd. The fuel oil price used for this information was US$350/ton.

According to information provided by Mitsui OSK Techno-Trade Ltd experiments were conducted in a cavitation tunnel which showed that the PCBF caused a reduction in sound pressure level of 3 – 6 dB for frequencies exceeding 1,000 Hz. It is also claimed that the PBCF can be installed afloat in some cases, meaning that it is not necessary to dry dock the vessel. However, it would be reasonably simple to install this during a routine dry dock, and it is claimed that this could take less than five hours.

It is recommended that the claims made by Mitsui OSK Techno-Trade Ltd be verified. This could be done by testing in a cavitation tunnel capable of making appropriate noise measurements, and/or by full scale trials with sister ships where one is fitted with the PBCF and one is not.

Table 5.1 PBCF costs (provided by Mitsui OSK Techno-Trade Ltd)

Ship type	Utilisation (%)	FOC[7] (t/d)	PBCF price (US$k)	Pay back period (months)
Containership	75	210	185	2.2
VLCC	85	100	165	3.6
Capesize Bulk Carrier	75	60	105	4.4
Handy Bulk Carrier	70	30	65	5.8
General Cargo ship	55	10	40	13.7

5.3. Propeller Cap Turbine

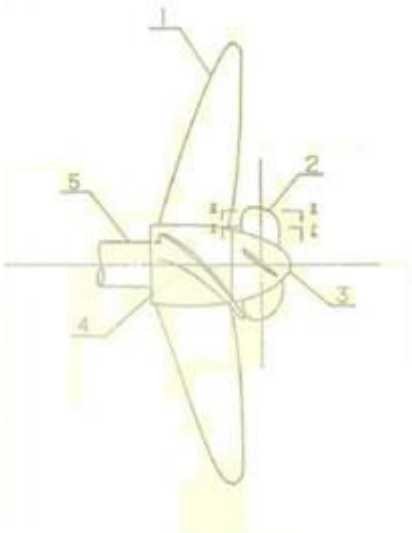

Figure 5.3 Sketch of Propeller Cap Turbine (Courtesy of Ship Propulsion Solutions, LLC)

An alternative approach to reducing the hub vortices is a Propeller Cap Turbine (PCT). This comprises a number of hydrofoil shaped blades integrally cast into the hub cap. As with the PBCF, energy from the rotating fluid coming from the propeller hub is recovered, resulting in energy savings. It is recommended that an independent study be conducted into the effect of PCT on hydro-acoustic noise.

The time to manufacture the PCT is about five months, and the weight of the unit is

about 1 – 2% of the propeller weight. (www.shippropulsionsolutions.com).
A sketch of a PCT is given in figure 5.3, courtesy of Ship Propulsion Solutions, LLC.

6. Wake inflow devices

6.1. Introduction

As noted above, the propeller operates in a non-uniform flow behind the ship. Although in general designers attempt to provide as good a flow to the propeller as possible, this is clearly limited by the desire to have as full a hull form as possible, to increase the carrying capacity of the vessel.

Improving the wake into the propeller will reduce cavitation, and probably also increase efficiency. This will depend on how bad the wake is in the first place – clearly if it is already very good then such flow modification devices will not improve the situation. However, if the wake is already good then the ship is not likely to be amongst the noisiest, and hence doesn't require to be addressed at this stage.

There are a number of devices that can be fitted to the hull of a ship to improve the flow into the propeller. These are discussed in various references including: ITTC (1999); Carlton (2007); Schneekluth (1987); and Breslin & Andersen (1994).

Johnannsen reported on the benefits of vortex generators in reducing propeller induced hull pressure pulses by improving the wake flow into the propeller. He demonstrated greater than 50% reductions in all the first four harmonics, both at model scale and full scale (Johnannsen, 2006). More recently, Carlton (2009) also gave a good example of how the flow around the afterbody of a container ship can be modified to resolve propeller cavitation induced vibrations using a system of vortex generators.

These devices can generally be retrofitted, either during a special docking, or during a routine docking, or can be included in the initial design.

It should be noted that the claims for improvements given below are taken from information supplied by the proponents, and that independent checks have not been conducted for this

report. It is strongly recommended that dedicated acoustic trials be conducted to confirm the designers' claims.

A selection of well known alternative wake equalisation ducts are discussed, however it is important to recognise that there are many others, and that different approaches may suit different vessels.

6.2. Schneekluth duct

The Schneekluth duct is designed to improve the flow to the upper part of the propeller, and as such causes the formation of cavitation at the blade tips to be less pronounced, resulting in lower pressure pulse levels. (Kessler, undated). Although there is not actually data available, it is very likely that this will also reduce the cavitation noise generated by such vessels.

Fuel savings of up to 12% together with reductions in vibration of up to 50% are claimed (www.schneekluth.com). There are a number of examples where this has been successfully fitted to existing ships, although as noted above, the benefit is only going to be apparent if the wake is not very uniform in the first place.

According to the proponent, fitting the duct to a ship in dock takes only a few days, and can be done during a routine dry docking period. The total cost of the duct and associated spoilers for a 22 – 23 knot 2,500 TEU container ship is approximately US$120k, with the installation cost (during a scheduled dry dock) being about US$20k. According to information on the website an annual fuel saving of 1,200 tons of fuel is possible, giving a saving of about US$500k pa (assuming a fuel cost of US$410/ton). This results in a payback period of about four months.

It is claimed that there are more than 1,500 successful applications of this duct design, and that in many cases they have first been fitted to one ship of a class, and then fitted to the rest of the class

(Kessler, undated). Independent claims of improvements in propulsive efficiency of up to 4% have been made for this design (Mewis and Hollenbach, 2006).

Hence, such a technology is not only likely to be very beneficial in terms of reducing hydro-acoustic noise for the noisiest ships (ie those with very non-uniform wake fields) but can also be financially advantageous by increasing the efficiency of the propulsion system.

6.3. Mewis duct

The Mewis duct is designed by Becker Marine Systems. Again, the objective of this system is to improve the flow into the propeller.

This has apparently been used successfully for a VLCC (L = 318 m, B = 60 m, T = 20 m, speed = 16 knots, power = 22,000 kW) where a 5% fuel saving was achieved, resulting in an annual fuel saving of US$700k (Becker Marine Systems, Mewis Duct, undated brochure).

Again, this demonstrates the possibility of retrofitting a wake modification system to improve the wake, increase the propeller efficiency, and reduce cavitation/vibration.

Figure 6.1 Simple Compensative Nozzle (Courtesy of Ship Propulsion Solutions LLC)

6.4. Simplified compensative nozzle

The Simplified Compensative Nozzle (SCN) is another method of improving the flow into the propeller. The improved efficiency is achieved by re-shaping the nozzle to improve uniformity of wake flow into the propeller. This is accomplished by having a more vertical or cylindrical shape, rather than remaining circular. Also, it is claimed that the forming of the nozzle only requires rolling steel plates in a single direction, which reduces the cost of fabrication. (www.shippropulsionsolutions.com)

A photograph of a SCN is given in figure 6. 1, courtesy of Ship Propulsion Solutions, LLC.

6.5. Grothues spoilers

Grothues spoilers consist of a small series of curved fins attached to the hull just ahead of the propeller. They straighten the flow into the propeller, thereby improving the propeller efficiency. Claims of efficiency improvements of up to 6% for tankers and fully laden bulk carriers, and up to 9% for tankers and bulk carriers in ballast have been made (Schneekluth, 1987). More recently, independent claims of up to 3% have been reported (Mewis, and Hollenbach, 2006).

Although there is no information currently available on the reduction in cavitation, and hence noise, caused by these spoilers this is clearly possible, particularly for cases where the flow into the propeller is extremely non-uniform.

It should be noted, however, that if the wake is already good, then these spoilers will have minimal effect, and may even increase the drag on the ship.

7. Propeller/Rudder Interaction

The interaction between the propeller and the rudder has a significant impact on propulsive efficiency. Various concepts such as a twisted rudder (better designed to account for the swirling flow from the propeller) and rudder fins (designed to recover some of the rotational energy) have been developed to increase efficiency (Molland and Turnock, 2007).

In addition, the Costa Propulsion Bulb (CPB) is a concept where the propeller is integrated hydrodynamically with the rudder by fitting a bulb to the rudder in line with the propeller shaft, as shown in figure 7. 1, courtesy of Ship Propulsion Solutions, LLC. It is claimed that this can reduce the hydro-acoustic radiated noise levels in practice by 5 dB(A) (Ligtelijn, 2007). It is recommended that this be independently verified.

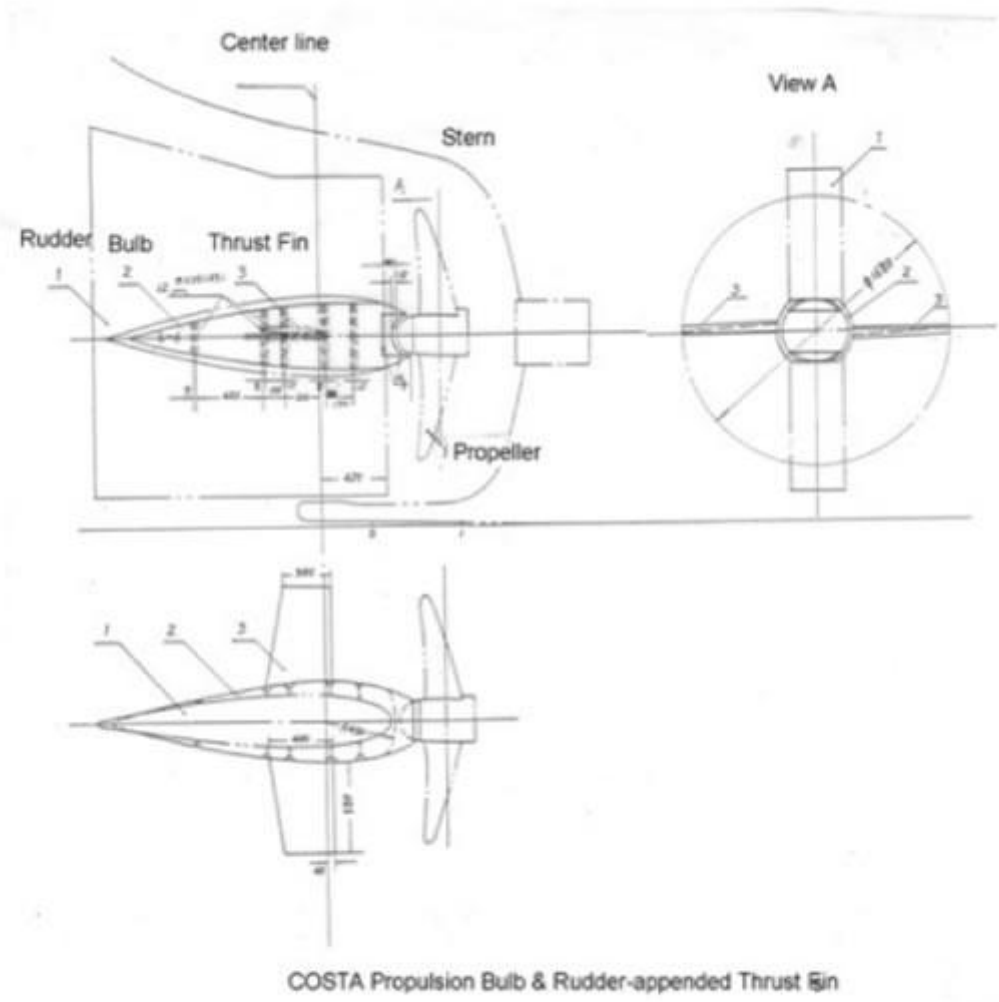

Figure 7.1 Costa Propulsive Bulb
(Courtesy of Ship Propulsive Systems, LLC)

8 Changes to the hull form

8.1. Introduction

The hull form will have a considerable influence not only on the power required to propel the vessel, but also on the hydro-acoustic noise propagating from its propeller. A well designed hull form will require less power for a given speed, which is likely to result in less noise being transmitted into the water.

In addition, a well designed hull form will provide a more uniform inflow to the propeller, thereby increasing the propeller's efficiency, and reducing noise and vibration caused by the uneven wake flow. This will further reduce the noise being transmitted into the water.

Bearing in mind the importance of fuel efficiency it is very surprising that only about 5% of new build projects have the benefit of resistance and propulsion and propeller cavitation model testing during their design (Carlton, 2009).

It is well known that organisations specialising in hydrodynamic consultancies, such as the major hydrodynamics testing organisations, can often recommend substantial improvements to hull forms as a consequence of their extensive experience. Two good examples of such improvements by HSVA (formerly the Hamburg Model Test Basin) are given in Mewis, and Hollenbach, (2006). In one case (a Ro-Pax vessel) it was shown that lengthening the vessel by 3.5% reduced the power requirement by 15%, and in the other case (a product carrier) increasing the curvature of the turn of the bilge in the fore body resulted in a power saving of 8%.

Clearly, every effort should be taken with new builds to improve the hull form, where possible. Suitable tank testing and advice can be obtained from experienced hydrodynamics consulting organisations for in the region of US$100k – US$500k. Depending on their advice, a modified hull is likely to cost more than the initial design, but the trade off in performance may well pay for itself in a matter of a few years.

8.2 Asymmetrical afterbodies

One special technique for improving the flow into the propeller of a single screw merchant ship is to adopt an asymmetrical afterbody. The reason for this approach is that the flow around single screw ships is not symmetrical about the centreline, since the propeller is rotating one way at the top of the propeller disk, and the other way at the bottom. The principal aim of the asymmetrical afterbody is to take this into account, and reduce the power required by improving the flow into the propeller. Claims of reduction in power of up to 9% have been made (Schneekluth, 1987, Breslin and Andersen, 1994).

9 Changes to operating procedure

As noted in Part I of this report, reducing speed will reduce the hydro-acoustic noise measured in dB generated by most merchant ships roughly proportionally to the log of the speed. Therefore, slow steaming could certainly be considered as a viable approach to reducing the total noise level, even although such slow steaming will require more ships to be operated to carry the same quantities of cargo.

In addition, slow steaming will reduce the propulsion power requirements. Roughly, the power required increases with the cube of the speed. However, as the time taken to cover a given distance will be linearly proportional to the speed, the saving in fuel for the propulsion for the voyage will be about proportional to the square of the speed. Against this, the voyage will take longer, requiring increased fuel for the hotel load, increased capital requirements, and increased crew costs to transport the same quantity of goods.

Where slow steaming is used, as noted above, it is particularly important to consider a redesign of the propeller(s), particularly for ships fitted with controllable pitch propellers.

Notes

7 Fuel Oil Consumption.
