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Non-lethal protection for ships against pirates.

Piracy is a serious problem in the Indian Ocean and off the Somali coast. The problem has been with us in that area for several years now, and it was a far back as 2005 when Lodewijk Westerbeek van Eerten of the Netherlands had an idea for combating it.

Having tried several methods, including a lubricant applied to the ship side, he came up with a simple solution, known as P-Trap. The system is designed to create a safety zone around the ship where it is vulnerable and to keep approaching vessels at a safe distance. The system comprises a boom that is extended from the bow of a vessel on both sides. Lines are installed on a conductor which is lowered from the boom. The conductor holds 20 P-Trap lines and can create a safe zone several metres in width along the sides of the vessel. The conductor is positioned just above the waterline in order to bring the lines directly into the water next to the ship's hull. The lengths of the P-Trap lines can be adjusted, but will normally end just forward of the ship's propeller. The lines are designed to float just below the surface of the water and disable the engine of a pirates' small boarding vessel by trapping the propeller. The system is designed to be non-lethal using a breakaway connection. When a propeller is trapped, the line will break and the pirate vessel will be left floating with an inoperable propulsion system.

P-Trap uses a standard swivel boom design, which can be applied to most ship types. When sailing in safe waters it is stowed similarly to a gangway, alternatively it can ve stowed in a vertical position. The system can be delivered on a pre-installed foundation, which can be welded to the deck. A similar foundation can be welded to other ships in any fleet so the P-Trap equipment can be simply transferred to other vessels as they enter the danger area.

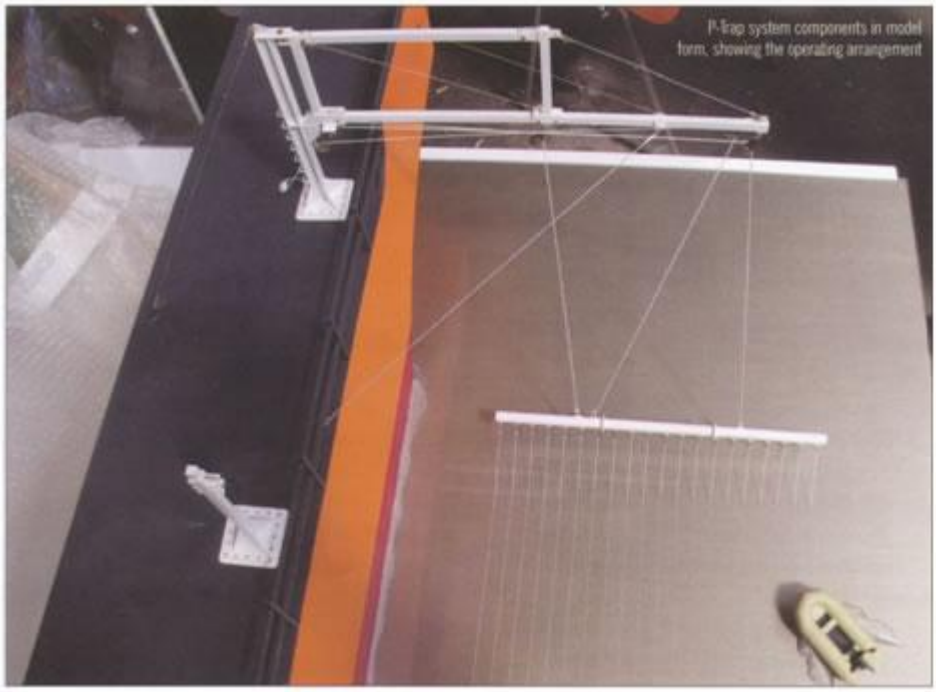
The P-Trap system being tested by the Royal Dutch Coast Guard in conjunction with the Royal Netherlands Rescue Institute and the Royal Dutch Navy

The main purpose of the P-Trap is to disable boarding craft without endangering the ship's crew in any way. The system is claimed to be effective, easy to install and simple to deploy. Once in operation the system safeguards the vessel, day and night, with no need for attention.

The P-Trap has been tested by the Royal Dutch Coast Guard in conjunction with the Royal Netherlands Rescue Institute and the Royal Dutch Navy. In a test carried out in February 2010, a RIB with naval personnel onboard simulated four attacks and at each attempt, the attacking craft's propeller was disabled. During these four attacks, ten lines broke away and one of the navy personnel suffered minor injuries.

Further tests were carried out by heavy-lift operator Dockwise, which has now ordered systems for its whole fleet. The cost per vessel of fitting a complete P-Trap system is €35,000, but with ransom demands of up to $5 million the economics look promising. The system has been nominated for a number of awards, and won the UK Safety at Sea Award 2011.

One-time investment



Claimed advantages of the P-Trap are its simplicity, its ability to be used on all types of ship, and its continuous protection without monitoring or crew involvement. The makers say that it is a one-time investment that can withstand multiple simultaneous pirate attacks.

"The best thing would be for a pirate to actually get caught in our trap," says Westerbeek. "That would be the best publicity for our product. We hope, of course, that insurers will put us on their wish list."

The entire Indian Ocean is now plagued by pirates who can, at any time, have more than 20 hijacked ships and hold more than 500 crew members hostage. It is a serious problem, and Westerbeek recognises that there is not a single solution. P-Trap may be effective in keeping pirates at a distance and preventing boarding, but they could still fire grenades. However, Westerbeek believes that fitting a system like P-Trap provides a deterrent - pirates are most likely to seek easier prey than ships equipped with his system.

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Canal Istanbul - pie in the sky, or a possibility?

News that the Turkish Government is planning to construct a huge canal connecting the Black Sea with the Sea of Marmara comes at a time when the city elders are becoming increasingly nervous about the amount of oil and gas being transported by ship through the Bosporus.

Around 150 vessels transit the Bosporus daily, of which around 15 are large tankers. The numbers have risen in the past decade, due to the Black Sea countries' economies picking up and the increase in Russian oil exports.

A Suezmax makes its way through Istanbul towards the Black Sea.

Your Editor recently transited both Turkish Straits – Dardanelles and Bosporus – by cruise ship and saw for himself the amount of large vessels using both narrow channels.

Taking the Bosporus as an example, a few years ago, the Turkish authorities banned two-way traffic passing through Istanbul. This created a one-way convoy system with vessels of all

types following stem to stern for up to eight hours.

This, and weather restrictions, such as strong currents, fog and high winds, does sometimes create a backlog of large vessels waiting to transit, as anything from around Panamax size (over 200 m in length) and drawing 15 m or more has to pass through in daylight.

At the end of April, the waiting time for Aframaxes and Suezmaxes, plus Capesize drybulk carriers, was said to be between one and two days. This can make a difference to the charter markets, especially at a time when Libyan oil exports by Suezmax and Aframax size vessels have all but ceased.

Many years ago, the Turkish authorities banned VLCCs altogether. Although vessels of over 300 m in length drawing more than 15 m are allowed to transit, they have to get special dispensation from the authorities before transiting.

There was a case a few years ago of a 210,000 dwt bulk carrier of over 300 m in length being held off the Dardanelles with a cargo bound for the Turkish Black Sea power plant at Eregli, while the charterers, owner and authorities argued the toss.

No doubt a lot of money changed hands before she was finally allowed to pass through the Straits under escort. There are oil pipeline projects on the drawing board, which would also bypass the Straits, linking the Black Sea with Greece. The question is – which is more expensive to build and easier to secure in these troubled times?

Turkey's Prime Minister Recep Tayyip Erdogan called it a "crazy and magnificent" plan when announcing it on 27th April. This just about sums it up.

Basically, his plan calls for the construction of the 'Canal Istanbul.'

It would be built to the west of the city and would be between 40 km and 45 km long, some 25 m deep and around 150 m wide, Erdogan said. This would mean access for laden vessels of up to 300,000 dwt, but at only 150 m in width, this would seem to rule out two-way traffic. At its narrowest, the Bosporus is around 700 m wide.

The Bosporus is currently governed by the Montreux Convention of 1936, which called for the waterway to be essentially free of any political hindrances.

It has seen numerous serious accidents down the years, but more recently traffic has been better controlled through a recently installed VTMIS.

Local sources thought that fees would have to be charged to transit the new canal to cover its vast construction cost- up to $10 bill – according to one estimate seen. Under the Montreux Convention, commercial vessels transit the Bosporus for free.

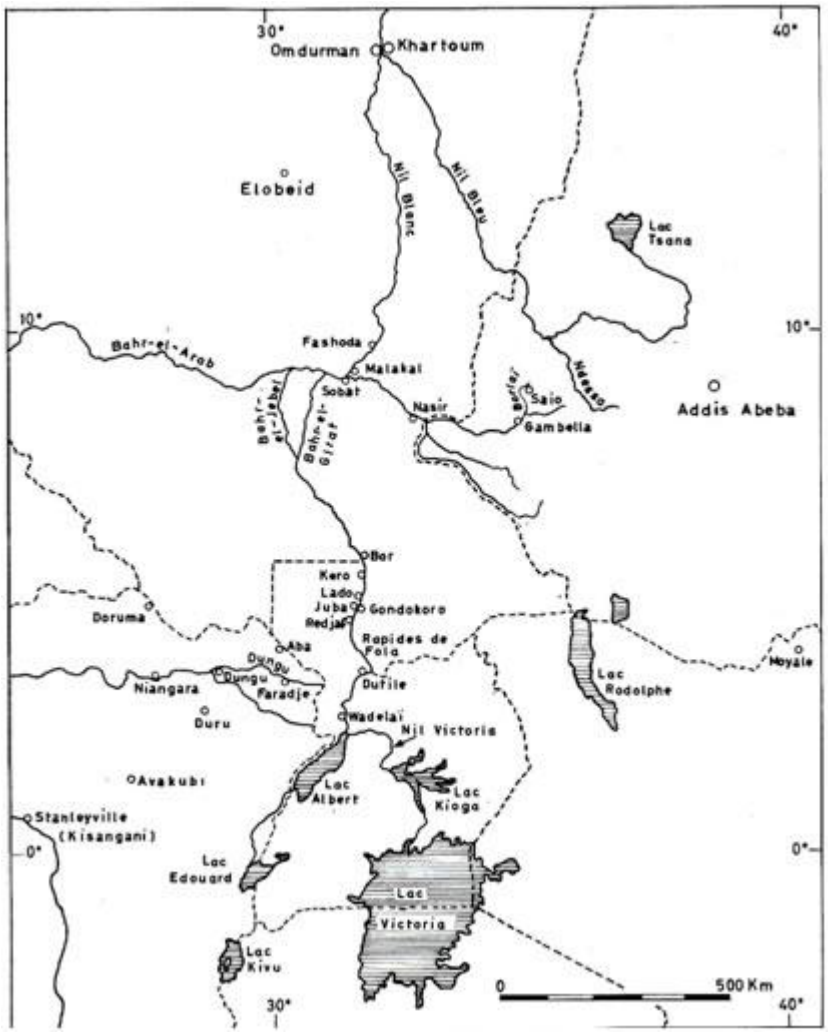
Although Erdogan said that he has no intention of closing the Bosporus, his plan has already got the lawyers arguing about flying in the face of the Convention.

Erdogan's opponents claim that this is just a publicity stunt ahead of elections due to be held on 12th June 2011. TANKEROperator tends to agree.

TO

Inséré le 22/07/13 HISTORIEK HISTORIQUE Enlevé le 22/08/13

Les bateaux belges sur le Nil au Soudan (parie I)



par A. LEDERER

En deux occasions, des unités battant pavillon belge ont navigué sur le Haut-Nil. A vrai dire, le premier bateau mis en exploitation par les Belges sur le Nil Blanc avait arboré le pavillon de l'État Indépendant du Congo qui fut remplacé par celui de la Belgique lorsque le Congo devint colonie belge. Les deux fois où nos compatriotes organisèrent une ligne de navigation sur le bassin hydrographique nilotique, c'était pour parer à une menace pointant du nord-est en direction du Congo.

I . — LA PERIODE MAHDISTE

1. L'expédition Vankerckhoven et ses prémices

La première fois, ce fut à la suite de la révolte du Mandi contre le gouvernement anglo-égyptien au Soudan. Se posant en prophète, à partir du mois de mai 1881, il prêchait la guerre sainte afin de conquérir le Soudan, l'Égypte et tout le monde arabe en chassant les infidèles. Progressant avec son armée le long des rives du Nil, il s'était établi à Omdurman, face à la capitale du Soudan. Finalement, il fit le siège de Khartoum défendue par Gordon. Pacha. La chute de la ville au confluent des deux Nils et la mort du valeureux Gordon dans son palais, le 25 janvier 1885, livraient un pays immense aux trafiquants d'esclaves dirigés par le prophète fanatique.

Au Mandi, mort le 22 juin 1885 à Omdurman à la suite d'excès de tous genres, succéda Abdullah, autre chef religieux, qui exploita habilement le culte voué à son prédécesseur afin d'établir son autorité personnelle.

Au nord, les Anglais s'étaient retirés en Egypte ; au sud, Abdullah avait submergé le Bahr-el-Ghazal. Le dernier gouverneur de province nommé par Gordon, Emin Pacha, s'était retiré de Lado, d'abord à Gondokoro, puis dans la région du lac Albert, à Wadelaï, sur le Nil Blanc. En juin 1888, le chef des Mandistes décida d'écraser ce dernier représentant de la domination égyptienne au Soudan ; il envoya trois vapeurs et une force de 4 000 Arabes avec l'ordre de franchir les rapides de Pola, près de Dufile, et de pénétrer en Uganda. Dès lors, les conquêtes de l'Islam menaçaient de s'étendre jusqu'à l'État Indépendant du Congo.

Léopold II, qui n'avait cessé de lutter contre le trafic honteux des esclavagistes, ne pouvait rester indifférent à la marche des évènements dans le bassin du Nil Blanc. En 1889, la situation d'Emin Pacha, dernier rempart de la civilisation entre les Mandistes et l'État Indépendant du. Congo, était devenue précaire.

Pour arrêter la progression des esclavagistes, à Zanzibar, d'ordre de Léopold II, Stanley offrit en février 1887 à Tippo-Tip, le plus notoire traitant d'esclaves, le poste de vali (gouverneur) des Stanley-Falls, un résident étant placé auprès de lui ; en échange de cet honneur, le chef arabisé s'engageait à empêcher le commerce des esclaves dans la région et devait fournir 600 porteurs à l'expédition dirigée par Stanley au secours d'Emin Pacha. Ce dernier engagement fut si médiocrement tenu qu'il coûta le désastre de l'arrière garde de Stanley et l'assassinat de son chef, le major Barttelot.

D'autre part, pour former une barrière contre les Mandistes, Léopold II chargea le commandant Roget de créer le poste de Basoko, au confluent de l'Aruwimi et du Congo, et de sceller une alliance avec Djabir, le puissant chef des Azandes. Grâce à sa fermeté et à son habileté diplomatique, les deux missions furent accomplies par Roget en peu de temps, l'une et l'autre ayant exercé une influence importante sur les évènements qui suivront. Au cours des années 1889 et 1890, Roget put ainsi disperser plusieurs convois d'esclaves.

Pour mieux protéger le Congo contre les incursions des Arabisés, Léopold II décida d'envoyer une expédition puissante qui, partant des bases établies, remonterait la vallée de l'Uele et continuerait jusqu'au Nil, afin d'établir une station à Wadelaï, abandonnée par Emin Pacha. De là, il serait possible de tenir plus efficacement en respect les belliqueux derviches. L'expédition commandée par Vankerckhoven quitta Djabir le 8 juillet 1891 et progressa lentement, car elle avançait dans un pays peu connu et parce qu'il fallait, en même temps, chasser les envahisseurs arabisés. Les habitants, méfiants à la suite des razzias dont la région avait été l'objet, craignaient que ceux venus les délivrer ne fussent également des chasseurs d'esclaves. Le 10 août 1892, alors qu'on était proche du but, le chef de l'expédition fut tué d'un coup de feu tiré accidentellement par son domestique au cours d'une petite escarmouche avec des attaquants. Milz prit alors le commandement de l'expédition qui arriva à Wadelaï le 15 septembre 1892 ; ce dernier poste était encore toujours occupé par quelques officiers et soldats égyptiens d'Emin Pacha restés en place après le départ de leur chef.

Les attaques des esclavagistes venant de l'est furent repoussées par Dhanis et Ponthier qui remportèrent, en 1893 et en 1894, diverses victoires dans la région comprise entre le Lomami, le Lualaba et le lac Tanganika.

Le 12 mai 1894, l'enclave de Lado, sur le Nil, avait été concédée à bail à Léopold II ; le Souverain entendait occuper ce territoire et en refouler les Mandistes. Deux colonnes étaient chargées de cette mission ; la première, commandée par Dhanis, se mit en marche des Stanley-Falls le 30 septembre 1896. La seconde, commandée par Chaltin, quitta Dungu dans l'Uele, le 14 décembre 1896. La première colonne n'arriva jamais à destination à la suite de la révolte de l'avant garde à Mongwa, le 14 février 1897.

2. L'avance vers le Nil

En 1893, les nouvelles en provenance du Nil étaient mauvaises ; les Mandistes qui occupaient Lado et Redjaf devenaient une menace pour la frontière de l'État Indépendant. En mars 1894, ils s'étaient emparés de Ganda et y avaient massacré les Turcs et les Egyptiens autrefois au service d'Emin Pacha et demeurés dans ce poste.

Les officiers de Léopold II, abandonnant la rive gauche du Nil, avaient dû se replier à Dungu. Aussi, pour écarter le danger, il fallait occuper effectivement l'enclave de Lado et cela, le plus rapidement possible. Le roi chargea Dhanis de refouler les esclavagistes venant du nord, comme il l'avait si bien fait en 1894 avec ceux qui sévissaient dans l'est du Congo.

Pressé de partir, et peut-être trop confiant dans sa bonne étoile, Dhanis quitta Stanley-Falls le 30 septembre 1896 avec une force de 3000 hommes mal préparés pour une expédition aussi ardue. Au cours de l'avance dans la forêt de l'Ituri, la troupe trouvait peu de vivres, car les populations, razziées autrefois par les derviches, étaient méfiantes, ignorant le but humanitaire poursuivi.

Minés par les privations et énervés par les embuscades qu'ils devaient déjouer sans cesse, les hommes de l'avant garde se révoltèrent et, le 14 février 1897, Mongwa, assassinèrent les sergents Tagon et Andrianne.

La révolte s'alluma comme une traînée de poudre à travers la troupe ; Dhanis, prévenu du désastre, tenta en vain de protéger Irumu où se trouvait un important dépôt de munitions. Miné par la fatigue et la maladie, Dhanis atteignit Avakubi le 1er avril 1897, où il trouva le commandant Henry qui venait d'arriver avec une poignée d'hommes. Faisant face aux révoltés, Henry et ses hommes remportèrent une victoire à la Lindi qui permit de protéger le poste des Stanley-Falls.

31 mars 1942 : Retour au Congo

Pendant que se consommait le désastre, l'expédition Chaltin connaissait un meilleur sort. A la tête du district de l'Aruwimi, Chaltin disposait de toute les ressources de l'expédition Vankerckoven ; il avait reçu du vice-gouverneur général Fuchs la mission d'activer l'organisation du territoire et de se rendre dans l'Uele afin de conduire, dès que possible, une expédition dont le but était de rétablir des postes sur le Haut-Nil.

Chaltin s'assura d'abord de la solidité de la défense du poste de Dungu et il s'enquit de la valeur des différentes routes qui menaient au Nil. Le 14 février 1896, à Dungu il eut à ce sujet une conversation avec le chef Bafuka et son frère Renzi. Bafuka connaissait bien la région car, autrefois, il avait accompagné des Nubiens jusqu'au Nil.

De retour à Niangara, Chaltin devait parer au danger que constituaient les chefs insoumis M'Bili et Doruma. Le chef Bokoyo se mit à la disposition de Chaltin pour l'aider dans ces opérations.

Au cours de celles-ci, Chaltin fut étonné d'apprendre par un courrier du gouverneur général que les troupes de l'Uele feraient partie intégrante de l'expédition Dhanis vers le Nil.

A la fin d'un engagement, Chaltin eut la main gauche fracassée par une balle. L'expédition revint vers Niangara ; comme dans ce poste il n'y avait pas de médecin, Chaltin dut redescendre jusqu'à Ibembo, sur l'Itimbiri, où il rencontra un jeune médecin, le docteur Rossignon, qui venait d'arriver en Afrique et qui réussit à guérir la blessure en évitant l'amputation de la main blessée.

La convalescence du chef ne ralentit pas la poursuite de la préparation de l'expédition vers le Nil. De retour à Niangara le 18 octobre 1896, il compléta ses informations sur les itinéraires à suivre, leurs ressources et leurs populations. Il envoya le capitaine Leclercq et le lieutenant Gehot, en reconnaissance.

Ce dernier avait réuni de précieux renseignements et apprit que les Mandistes faisaient encore régulièrement des incursions chez les Kakwas, au départ de Redjaf. Chaltin recevait le 31 octobre 1896 une lettre du gouverneur général Wahis datée de la fin septembre et expédiée des Stanley Falls, lui donnant ordre de mener l'expédition au Nil sans plus attendre.

Il réussit à force de diplomatie à associer à l'expédition les Azandes qui étaient, en fin de compte, les victimes des Mandistes. Les chefs Renzi et Bafuka décidèrent d'accompagner Chaltin avec leurs guerriers.
Les Azandes ne devaient pas être mêlés aux pelotons disciplinés de la Force Publique, composés d'Haoussas et de Congolais. Les hommes de Renzi et de Bafuka étaient destinés à constituer une masse de manoeuvre à lancer au moment opportun dans le combat.

Le 9 novembre 1896, Chaltin arrivait à Dungu où étaient réunies les forces venues des autres postes de l'Uele. Après un mois d'entraînement, les 700 hommes furent répartis en huit pelotons commandés par Kops, Gehot, Goebel, De Backer, Saroléa, Cajot, Dupont et Laplume qui s'étaient tous portés comme volontaires. Cajot s'occupait en outre des artilleurs, car l'expédition emportait un canon pour soutenir l'action des fantassins.

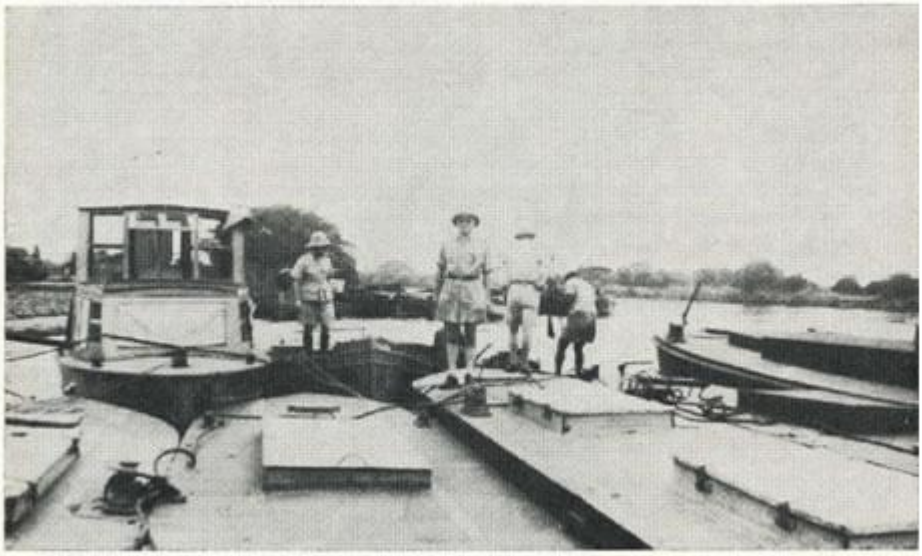
Le 13 décembre 1896, la colonne partit de Dungu, après avoir mis le feu au campement provisoire ; jusqu'à Surur, le portage des charges était assuré par les hommes de Bokoyo. A partir de là, le relais du portage était repris par les hommes de Renzi qui fut fidèle au rendez-vous et qui apportait le soutien de 590 lanciers et tireurs et de 200 porteurs de bagages. Chaltin attendit à Surur jusqu'au 30 décembre 1896, afin d'y recevoir le courrier de Bora ou des Stanley Falls ; une lettre de Dhanis annonçait les déceptions rencontrées par l'avant-garde commandée par Leroi, alors qu'il se trouvait encore toujours dans la région de l'Aruwimi. Aussi Chaltin décida de ne plus attendre et de progresser vers le Nil.

Le 15 janvier 1897, arrivé à Ndirfi, Chaltin ne trouva pas Dhanis au rendez-vous fixé et se soumit aux ordres formels qui étaient d'avancer rapidement.

A l'approche du Nil, les populations se montraient coopérantes et fournissaient de nombreux renseignements à Chaltin. C'est ainsi qu'il apprit que les Mandistes étaient nombreux à Redjaf, qu'ils possédaient trois canons et un steamer qui circulait entre Redjaf et Bor. Moloni, le chef de la région, s'offrit comme guide et conduisit la colonne jusqu'au Nil qui fut atteint à Bedden, le 14 février 1897. Les Azandes de Renzi et de Bafuka dansèrent de joie toute la nuit. Et pourtant, il n'y avait pas de quoi se réjouir car, ce même jour, la révolte venait d'éclater dans l'avant-garde de la colonne commandée par Dhanis.

3. La victoire de Redjaf

Le 7 février, Chaltin avait renvoyé Goebel vers Surur, à la rencontre d'un convoi d'approvisionnement et pour recevoir du courrier. Mais Goebel ne revenait pas, ce qui laissait Chaltin dans l'incertitude au sujet de l'avance de la colonne Dhanis. Le 15 février, les patrouilles de Chaltin qui opéraient dans toutes les directions, rentrèrent sans avoir rencontré de Mandistes. Le 16 février, une patrouille retrouva Goebel qui arrivait avec l'approvisionnement, mais sans nouvelles de Dhanis.



La flotille du Nil pendant la campagne de 1941-1942.

Pendant que Chaltin et ses officiers célébraient le retour de Goebel, les sentinelles placées au nord de la plaine signalèrent que les Mandistes descendaient les collines ; ils étaient encore à deux mille mètres et avançaient sur Bedden.

En cinq minutes, les troupes étaient placées en position de combat. Cajot qui commandait sa pièce d'artillerie tira un obus, ce qui eut pour effet de disperser l'ennemi et de lui faire regagner son point de départ. Les patrouilles envoyées à leur poursuite n'ayant rencontré aucun Mandiste, Chaltin les fit rentrer au bivouac dans l'attente du lendemain.

Le 17 février à 6 h. du matin, la colonne de Chaltin se mit en marche vers le nord, son aile droite longeant le Nil, tous les lanciers de Renzi avançant sur sa gauche. Vers 7 heures, Cajot aperçut les Mandistes sur une crête rocheuse, quatre cents mètres en avant. Ils étaient déployés sur trois kilomètres de front ; la position était à cheval sur la route de Bedden à Redjaf, en passant par un défilé entre deux côtes solidement occupées.

Vers huit heures, les Mandistes tentèrent de déborder l'aile gauche de la Force Publique. Les pelotons de De Backer et de Goebel, jusque là tenus en réserve, puis les lanciers de Renzi et de Bafuka enveloppèrent l'aile droite des esclavagistes. Pour exécuter leur manoeuvre, les Mandistes avaient dégarni leur centre, ce qui n'avait pas échappé à l'attention de Chaltin. C'est seulement alors qu'il fit ouvrir le feu par ses hommes sur le point faible du dispositif ennemi. A ce moment, l'infortuné Saroléa fut tué par une balle perdue.

Les Mandistes, imprudemment sortis de leur retranchement, reculèrent d'abord lentement, puis précipitamment et finalement, s'enfuirent en déroute vers leur zériba de Redjaf. Sidi-Arabi, qui y attendait un message de victoire, vit refluer ses hommes en désordre qui ramenaient leur chef Adi-Badi, blessé lors de l'action. Chaltin, après avoir fait regrouper les troupes de la Force Publique et les Azandes, reprit la poursuite vers 9 heures du matin. Les Mandistes, qui disposaient de troupes fraîches et de deux canons, avaient mis leur dispositif de défense en place vers 13h30, lorsque Laplume arrivait en avant-garde. Ayant fait placer ses hommes à l'abri de rochers, il attendit l'arrivée du canon que Cajot eut bien du mal à amener jusqu'à la position de tir décidée par Chaltin.

Pendant ces préparatifs, les pelotons de De Backer, de Laplume et de Kops réussirent à rejeter l'aile gauche des Mandistes vers le Nil. Deux boîtes à balles tirées par Cajot désorientèrent l'ennemi ; cependant, l'emplacement de la pièce ayant été découvert, Cajot fut mortellement blessé par le feu de l'ennemi.

Pendant ce temps, Gehot enfonçait la droite et le centre du dispositif mandiste. A ce moment les lanciers Azandes, qui avaient contourné le mont Redjaf, prirent l'ennemi à revers et empêchèrent leur fuite vers le nord. Les Mandistes espéraient trouver le salut en s'enfermant dans leur zériba. Mais les Congolais pénétrèrent de toute part dans cette ville de 10 C00 habitants, dont 4 000 combattants. A la nuit tombante, seul un réduit le long du Nil était encore occupé par les Mandistes. Le 18 février à l'aube, on constata que ses occupants s'étaient enfuis par le Nil. Comme les

embarcations étaient trop peu nombreuses, ils s'étaient battus entre eux, ce qui avait fait de nombreuses victimes. Au cours du combat, presque tous les chefs des esclavagistes avaient été tués, dont Adi-Badi, déjà blessé à Bedden, et Omar Saleh qui, en 1888, s'était emparé de Redjaf.

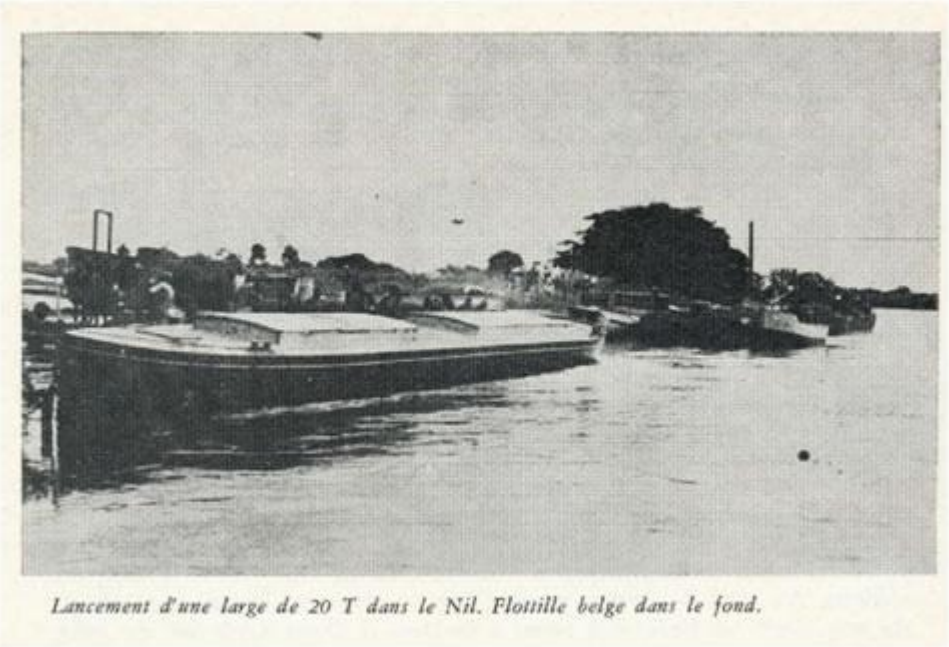
L'occupation de ce poste mettait un terme aux raids des esclavagistes en direction du nord-est du Congo. Redjaf était, en effet, le point où le Nil cessait d'être navigable ; c'est la raison pour laquelle les Mandistes s'y étaient installés en force car, de là, leurs bateaux emportaient ivoire volé et esclaves vers le nord. Cette grande victoire remportée par Chaltin prend ainsi toute sa signification à la lumière de la portée humanitaire qu'elle représentait pour l'Afrique centrale.

Les semaines qui suivirent la victoire de Redjaf furent pénibles pour les vainqueurs. A la douleur de la mort de Saroléa et de Cajot, s'ajoutait l'incertitude au sujet de la colonne Dhanis dont on était toujours sans nouvelles. Le ravitaillement dans cette région, qui avait souffert de l'occupation mandiste, était difficile, car les indigènes étaient devenus méfiants.

Le 16 mars, un pli urgent arrivé de Surur annonçait laconiquement le désastre de toute la colonne Dhanis, mais sans aucune précision sur son étendue. Le 8 mai, enfin, Chaltin reçut des informations complémentaires qui anéantissaient tout espoir d'être ravitaillé par le sud. Devant la menace de disette, le 6 avril, il avait renvoyé le peloton de Gehot et, le 23 mai 1897, Bafuka et ses hommes. A la fin du mois de mai, Kops, fin de terme, retournait en Belgique. Ainsi, la garnison de Redjaf s'affaiblissait, alors que les 3000 Mandistes stationnés à Bor, 30 km plus au nord sur la rive droite, auraient pu la surprendre.

A Redjaf, on vivait perpétuellement sur le qui-vive ; cependant, des renforts commençaient à arriver. D'autre part, grâce à la sagesse de la politique menée par Chaltin, il réussit à se rallier les populations qui se sentaient désormais protégées contre les entreprises des derviches.

Le 1er janvier 1898, Chaltin quittait Redjaf pour retourner en Belgique où il reçut un accueil triomphal. Hanolet, son remplaçant, arrivait avec de sérieux renforts et c'était bien nécessaire, car les Mandistes, qui avaient été chassés le 2 septembre 1897 d'Omdurman par Kitchener, devenaient de plus en plus menaçants ; ils espéraient s'emparer du poste tenu par les Belges et s'y approvisionner en armes et en munitions dont ils avaient le plus grand besoin.


Lancement d'une large de 20 T dans le Nil. Flottille belge dans le fond.

Différentes actions des Mandistes avaient fait des victimes parmi les officiers et les troupes de l'État Indépendant.

A Redjaf, on continuait à vivre dans l'inquiétude à cause de la supériorité numérique écrasante des Mandistes ; de Bor, ils pouvaient à tout moment lancer une attaque. Pour réduire le danger, Hanolet décida d'occuper Lado et d'y créer un poste fortifié avancé. Le 1e1' juillet 1898, le lieutenant Henry était arrivé avec une troupe de 700 hommes aguerris et bien disciplinés ; elle comprenait les soldats qui avaient infligé une lourde défaite, le 15 juillet 1897, à la Lindi aux révoltés de la colonne Dhanis.

C'est à Henry que fut confiée la tâche de créer à Lado une place forte. Il s'y rendit le 15 juillet 1898 avec Nagels et, en quelques mois, réussit à faire de Lado une place offrant encore une meilleure valeur défensive que Redjaf.

En novembre 1898, Hanolet se trouvait en inspection à Lado chez Henry, lorsque les deux officiers belges reçurent la visite du colonel anglais Martyr avec une troupe de soldats soudanais. L'officier britanique avait reçu pour mission de reprendre aux Mandistes Gondokoro, poste situé sur la rive droite du Nil, en face de Redjaf.

Le 2 janvier 1899, Hanolet remettait le commandement de l'enclave de Lado à Henry.

Léopold II, qui nourrissait de grands projets dans la région du Nil, fit envoyer des renforts en hommes et en matériel. Henry créa encore un poste au nord de Lado, à Kéro ; cette place comptait plus de 1000 soldats et sa défense était forte de plusieurs canons.

Devant le renfort des positions belges, les derviches devinrent inquiets et quittèrent précipitamment Bor, pour s'enfuir vers le Darfour et le Kordofan, plus au nord.

4. Le pavillon belge sur le Haut-Nil

L'occupation effective de l'enclave de Lado et sa protection contre les incursions des derviches, exigeaient un moyen de déplacement rapide sur le Nil. En conséquence, Léopold II fit commander en 1897, au chantier de Cockerill, un petit side-wheeler baptisé „Vankerckhoven" en souvenir de l'énergique chef de la première expédition du Nil. Cependant, afin de masquer sa destination réelle, ce bateau avait été commandé officiellement pour faire du service sur le lac Albert. Le „Vankerckhoven" fut expédié d'Anvers pour le Congo à la fin de l'année 1897. Toutes les pièces, constituant 1600 charges, quittèrent Matadi le 15 janvier 1898 et furent expédiées, via le Congo, l'Itimbiri et le Rubi, pour arriver à Faradje le 7 novembre 1898. A partir de ce moment, commença la partie la plus dure de ce portage.

Deux hommes se dévouèrent particulièrement à cette tâche : c'étaient les mécaniciens Mulders et Horbach. Mulders, qui dirigeait les opérations, avait déjà une longue carrière en Afrique. En effet, en 1879, alors qu'il était âgé de 19 ans, il se trouvait à Banana au service de la maison hollandaise, „Afrikaansche Handelsvereeniging" (A.H.V.), lorsque le s/s „Barga" déchargea le matériel de l'expédition Stanley pour le compte de Léopold II. Pendant le montage des bateaux dans la crique de Banana, les mécaniciens de Cockerill furent atteints de dysenterie. Mulders prêta son concours aux pionniers de l'entreprise léopoldienne et sa collaboration avait été hautement appréciée.

Entre le Rubi et Kéro sur le Nil, il y avait de nombreux points difficiles à franchir ; l'avance était rendue pénible, car il fallait transporter de lourdes charges, dont certaines pesaient plus de 100 kg, à travers les hautes herbes et sous un soleil de plomb. Lors du franchissement des rapides de Dungu, les porteurs laissèrent choir plusieurs colis dans la rivière. C'est à Kéro, sur le Nil, qu'on procédait au remontage du side-wheeler „Vankerckhoven" ; l'arrivée des charges s'y échelonna jusque dans les premiers jours d'avril 1899. Le montage de la coque était déjà en cours, si bien que le lancement put avoir lieu le 9 avril 1899. Mais une surprise désagréable attendait les mécaniciens lors du montage de la partie mécanique ; un demi-cylindre de la machine principale n'était pas arrivé à destination. Cet incident était dû à la légèreté d'un convoyeur et d'un réceptionnaire qui avaient mal effectué leurs contrôles. Le temps pressait, car les officiers belges avaient hâte de faire naviguer le s/w „Vankerckhoven" ; Horbach retourna à marche forcée aux rapides de Dungu, pour tenter de retrouver la pièce manquante. Il explora tous les recoins des rives rocheuses et finit par retrouver le demi-cylindre tombé dans les eaux tumultueuses de la rivière. Au retour, Horbach accéléra encore l'allure car, bien que son terme de séjour fur écoulé, il avait juré à ses chefs de ne pas retourner en congé en Belgique avant que le demi-cylindre ne fût rendu à destination. Il arriva à Kéro le 30 juin, de telle sorte que, le let' juillet 1899, la petite colonie belge put y célébrer à la fois le quatorzième anniversaire de la proclamation de l'État Indépendant et la mise en service sur le Nil du premier bateau naviguant sous pavillon de l'État Indépendant du Congo.

Henry fit un premier voyage à bord du s/w „Vankerckhoven". Le bateau sous les ordres de Mulders, emportait soixante cinq soldats à bord de deux allèges. Arrivés à Bor, ils trouvèrent le poste détruit et abandonné par les Mandistes qui s'étaient retirés au Darfour. En un point siué à 5°45' de latitude nord, Henry se heurta aux barrages de papyrus du Sudd qui se révélèrent infranchissables, malgré toutes les tentatives ; à regret, il dut retourner à Kéro.

De son côté, Horbach, épuisé par l'effort qu'il venait d'accomplir, regagnait l'embouchure du Congo par petites étapes. Mais il avait abusé de ses forces et il arriva à Borna en décembre 1899 en si mauvaise santé, qu'il dut être hospitalisé. Miné par la dysenterie, il y expira le 14 janvier 1900.

De son côté, Henry voulait tenter de descendre le Nil jusqu'à Khartoum, car il eut été bien plus facile d'amener l'approvisionnement de l'enclave de Lado par cette voie, plutôt qu'au travers du Congo. Cependant, les autorités anglaises voyaient d'un mauvais oeil l'activité déployée par les Belges, sous l'impulsion de Léopold II, dans les régions du Nil et du Bahr-el-Ghazal.

Déjà, les Anglais avaient obligé le commandant français, Marchand, à quiter Fachoda ; maintenant, c'étaient les Belges qui apparaissaient dans cette région de l'Afrique considérée par l'Angleterre comme devant faire partie de la zone d'influence britannique.

Henry contacta le commandant anglais Gage, de Fort Berkeley, et, à deux, ils firent une nouvelle tentative de percée des papyrus du Sudd. Gage sur le „Kenia" et Henry sur le „Vankerckhoven" quittèrent Kéro le 14 septembre 1899. Cependant, les obstructions du Bahr-el-Jebel étaient telles, qu'il fallut renvoyer le „Kenia" à Kéro et stopper le „Vankerckhoven" qui fut confié à une garde.

Les officiers et une partie de leurs hommes, poursuivirent la route en canot ; arrivés près du lac No, ils rencontrèrent, le 19 janvier 1900, le major Peake à la tête d'une expédition chargée de débloquer le Nil. C'était la première fois qu'un bateau anglais remontait le Nil si haut vers le sud depuis la chute de Khartoum en 1885 et sa reprise par les Anglais en 1897. Henry poursuivit sa route vers le nord avec ses compagnons de voyage et parvint dans la capitale du Soudan, le 7 février 1900.

Cette expédition de l'officier belge n'eut pas l'heur de plaire aux Anglais qui le reçurent néanmoins correctement. Vers la mi-février, Henry quitta Omdurman pour retourner à Lado via le Bahr-el-Giraf ; il retrouva le s/w „Vankerckhoven" vers la mi-mars et fut de retour à Kéro le ler mai 1900, après avoir traversé les barrages du Sudd en sens inverse.

Ainsi, le s/w „Vankerckhoven" contribua à protéger l'enclave de Lado contre un retour offensif des derviches et à assurer la liaison et l'approvisionnement des postes créés par les Belges sur la rive gauche du Nil. Il y fit son service pendant toute la période où les Belges occupèrent ce territoire, c'est à dire, jusqu'à la mort de Léopold II en décembre 1909.

Ce petit side-wheeler remorquait des barges d'une capacité de 20 t au maximum et arborait à l'arrière le pavillon bleu à l'étoile solitaire d'or de l'État Indépendant du Congo, du moins avant qu'il ne fut remplacé par le drapeau tricolore au mât arrière, lorsque le Congo devint colonie belge. Le calme règna désormais dans cette partie de l'Afrique. En vertu d'un arrangement de 1906, l'enclave de Lado devait être transférée au Soudan AngloEgyptien après la mort de Léopold II.

Les belges quittèrent Kéro le 30 avril 1910, Lado le 11 mai, Redjaf le 24 mai, Loka le 5 juin et Yei le 16 juin. Le gouvernement du Soudan paya 4631,57 livres égyptiennes pour toutes les propriétés belges de l'enclave, y compris le s/w „Vankerckhoven". Ainsi prenait fin l'occupation belge de l'enclave de Lado, cette portion de terre où tant d'efforts avaient été déployés pour barrer la route aux Mandistes qui, pendant près de quinze années, avaient jeté le trouble dans cette région de l'Afrique.

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Les bateaux belges sur le Nil au Soudan (partie II)

par A. LEDERER

II. — LA DEUXIEME GUERRE MONDIALE

1. La guerre en Afrique

En une deuxième occasion, les Belges organisèrent une ligne de navigation sur le Nil Blanc ; ce fut en 1941, lors de la deuxième guerre mondiale.

En 1935 et 1936, au cours d'une campagne, l'Italie conquit l'Ethiopie en partant de ses colonies de Somalie et d'Erythrée. Aussi en juin 1940, lorsque l'Italie entra en guerre aux côtés de l'Allemagne, l'Afrique Orientale Italienne se transforma en un théâtre d'opérations militaires.

D'autre part, la colonie italienne de Lybie servira, dans la suite, de base aux forces italo-allemandes pour mener une longue et harassante guerre des déserts dans le nord de l'Afrique.

Après la capitulation de la France en juin 1940, certaines colonies françaises écoutèrent l'appel du général De Gaulle et décidèrent de continuer avec les alliés la lutte contre les forces de l'axe Rome-Berlin ; d'autres, au contraire, se rallièrent aux côtés du maréchal Pétain, constituant ainsi une grande incertitude et, peut-être, une grave menace en Afrique.

Au cours du mois de juillet 1940, les Italiens attaquèrent la Somalie Britannique et occupèrent le port de Berbera sur la Mer Rouge. Le 4 août 1940, ils franchirent en force la frontière Soudanaise ; mais les compagnies motorisées des Forces de défense du Soudan réussirent à les maintenir à Kassala, Galabat et Kurmuk. Au début de juillet 1940, une compagnie anglaise arrêta pendant cinq jours une brigade italienne à Moyale, à la frontière du Kenia ; les Italiens poussèrent jusqu'à Buna et El Wak, sans oser avancer davantage.

Pendant que se déroulaient ces opérations, le Congo, douloureusement surpris par la capitulation de l'Armée Belge en Europe, s'était ressaisi et le Gouverneur Général Ryckmans avait décidé de continuer la lutte aux côtés des alliés et de mettre la Force Publique à leur disposition.

A cette époque, la supériorité des forces italiennes en Afrique sur celles des alliés était évidente ; alors que les premiers disposaient de 250 000 hommes, les seconds ne pouvaient rassembler, au maximum, que 70 000 hommes armés.

Les troupes coloniales belges étaient divisées en trois Brigades. En principe, la deuxième Brigade devait demeurer au Congo comme force de l'intérieur pendant toute la durée de la guerre ; la première Brigade fut dirigée vers la Nigérie pour faire face, avec les Anglais, à un éventuel coup de main des troupes françaises ralliées au maréchal Pétain. La troisième Brigade était concentrée dans le nord-est du Congo, renforcée par des éléments de la première et de la deuxième Brigade ; cette mesure s'imposait, afin de coopérer avec les Anglais, étant donné le rapport des forces favorables aux Italiens.

La mission des troupes de la Force Publique était, à l'origine, la protection des mines d'or de Kilo-Moto contre une action toujours possible des Italiens.

Mais bien vite les Anglais, qui avaient déjà conquis l'Erythrée et AddisAbbeba, assignèrent à la troisième Brigade comme théâtre d'opération, la province de Galla-Sidamo, en Ethiopie.

Cette mission exigeait de bonnes communications entre le Congo et Gambela, poste important situé sur la rivière Bara qui devait servir de base de départ à toute action en direction des hauts plateaux d'Abyssinie. La ligne de communications entre le Congo et l'Ethiopie comportait trois tronçons distincts. D'abord la route de Faradje sur la Dungu à Juba, sur le Nil, via Aba, était praticable toute l'année ; ensuite, de Juba à Malakal, on pouvait decendre le cours du Nil, navigable en toute saison ou prendre la route qui était praticable trois mois par an, du 15 janvier au 15 avril. Enfin, de Malakal à Gambela, il fallait remonter le Sobat puis son affluent le Baro ; la navigation sur ces rivières était possible du 15 juin au 30 octobre ; on pouvait aussi utiliser la route Malakal, Nasir, Gambela, mais elle était seulement carossable du ter février au 30 avril.

Ceci montre que le problème de transport était compliqué à résoudre et il explique les difficultés rencontrées par la Force Publique au cours de la campagne d'Abyssinie. Lors de l'arrivée au Soudan en février 1941, la plus grande partie du onzième bataillon fut transportée de Juba à Malakal par la voie du Nil à bord des s/w „Lord Cromer" et s/w „Zafir" ; le restant du bataillon dut prendre la voie terrestre.

2. Le Pavillon belge sur le Nil (1941-1942)

Il était évident que le service fluvial anglo-égyptien, déjà surchargé, ne pouvait assurer seul le ravitaillement du corps expéditionnaire belge. Dès lors, il fallait envisager de créer sur le Nil une flottille fluviale indépendante. Ce n'était pas une entreprise ordinaire, l'envoi d'une flottile comprenant des barges et des automoteurs depuis Léopoldville jusqu'à Juba. L'ingénieur Gaston Ruytinx fut mis en charge de l'étude de ce transport. Il fut envoyé à Juba auprès des „Sudan Railways and harbours". Un projet fut mis au point et il fut approuvé par le général Ermens. Le choix de Ruytinx se justifiait, car il avait fait un terme de trois ans aux Voies Fluviales de l'Otraco et qu'ensuite, il était passé au service de l'État où il était devenu ingénieur provincial.

Une fois les projets adoptés, Ruytinx fut mobilisé et nommé commandant des Transports par Eaux Intérieures, en abrégé : T.E.I.

La navigation sur le Nil entre Juba et Malakal est difficile, car la rivière traverse de nombreux marais et de vastes plaines herbeuses qui sont inondées en période de crue et où une grande quantité des apports d'eau est évaporée. Le mouillage sur le Nil n'est que de 1,08 m et, pendant la période de navigation, sur le Sobat et le Bara, il ne dépasse pas 0,80 m à 0,90 m.

Pour assurer les transports sur le Nil, l'État-Major réquisitionna des barges de 10 à 20 t auprès de l'Otraco, des H.C.B., de la compagnie Jules Van Lancker et de la compagnie du Kasai. En outre, il prit aussi un remorqueur Diesel tout neuf, le s/s „Luka" arrivé d'Europe pour les H.C.B., ainsi que des baleinières à moteur, au total une trentaine d'unités fluviales.

Après avoir étudié les possibilités des moyens de transport de Vicicongo, il fut décidé d'acheminer tout ce matériel par le Congo et l'Itimbiri jusqu'au port d'Aketi.

Les baleinières, les canots à moteur et les barges de 10 t furent transportées en une seule pièce ; seules, les barges de 20 t et le m/b „Luka" des H.C.B. furent sectionnés en deux tronçons à Léopoldville avant d'être chargés sur les barges de l'Otraco.

A Aketi, tête de ligne du chemin de fer de Vicicongo, les unités ou tronçons d'unités furent chargés, avec des moyens de levage du port, sur les wagons plats et dirigés jusqu'à Mungbere, terminus du rail, où un chantier de débarquement dut être créé.

En ce dernier poste, les engins de levage pour de pareilles charges étaient inexistants et tout le travail devait être exécuté en ripant les colis lourds au moyen de leviers sur des glissières en bois.

La partie difficile du transport allait commencer car les routes qu'il fallait parcourrir n'étaient pas prévues pour des charges aussi lourdes et aussi longues. Vicicongo disposait d'une dizaine de camions Brossel plats avec plateformes et remorques. Les pièces à transporter pesaient plus de dix tonnes et mesuraient plus de dix mètres de longueur. Il fallait tenir compte des sinuosités et des lacets de la route, surtout entre Mungbere et Watsa et dans la région de Faradje ; le revêtement de la route était quasi inexistant et les nids de poules ne se comptaient pas tant ils étaient nombreux. Malgré la longueur des camions et des plateformes, certaines pièces étaient en porte à faux et devaient être soutenues.

C'était réellement un sport peu ordinaire cette expédition à travers la grosse forêt de l'Ituri. Les convois avançaient au pas d'homme et ne dépassaient jamais une vitesse de huit kilomètres à l'heure. Lorsque des longerons des camions se brisaient, on les remplaçaient par des rondins de vingt à vingt cinq centimètres de diamètre coupés dans la forêt. On n'avait d'ailleurs pas le choix, car on ne pouvait trouver rien d'autre au coeur de la forêt. Mais chose providentielle, là où une poutrelle en acier de deux cents millimètres cédait, les rondins de bois tenaient bon, grâce à leur élasticité.

Il fallut près d'un mois pour acheminer tout le matériel sur les quatre cent cinquante kilomètres séparant Mungbere de Juba, où un petit chantier naval devait être créé dans le bled. Chaque convoi était accompagné de quatre ou cinq Européens ; il fallait se frayer un chemin sous les frondaisons en forêt et déplacer des lignes téléphoniques ou électriques aux environs de Watsa et dans la région des mines d'or de Kilo-Moto. De nombreux incidents ralentirent l'avance mais on n'eut à déplorer aucun accident.

En plus des unités, il fallait acheminer un nombre impressionnant d'outillages divers tels que rails, glissières, treuils, boulons, rivets, cables, vérins, tins, peintures, palans qui avaient été réquisitionnés à Léopoldville, à Watsa et à Stanleyville.

Malgré la difficulté d'une pareille expédition, elle fut menée à bien. On perdit une seule barge en cours de route et, finalement, le gros charroi de Vicicongo périt dans l'aventure.

Ruytinx avait reçu comme adjoint, le sous-lieutenant Trigallez, ingénieur à la Forminière, mobilisé pour le temps de guerre, ainsi que cinq mécaniciens et chaudronniers de l'Otraco, de Chanic et du service des Voies Navigables de l'État, mobilisés avec le grade d'adjudant. Le personnel subalterne se composait de 250 Congolais, matelots et ouvriers.

Le remontage et le lancement des bateaux s'effectuèrent environ 1 km au sud de Juba ; on y avait trouvé un terrain en pente douce vers le Nil où il fut possible d'ériger un chantier naval complet, avec slipways, ateliers et magasins.

Au fur et à mesure de leur arrivée, les canots à moteur, le remorqueur et " les barges tronçonnées furent assemblés, carènés, peints et finalement, lancés sur le Nil.

Le remorqueur Diesel fut baptisé „Lieutenant Simonet", du nom du premier officier belge mort au champ d'honneur au cours de la campagne d'Abyssine. Le lieutenant Simonet avait été tué le 15 avril 1941, lors du premier combat de la Bortaï. Les dix canots à moteur reçurent les noms d'étoiles : Sirius, Vega, Orion, Algol, Rigel, Andromède, Altaïr, Capelle, Aldebaran et Betelgeuse. Au cours de la campagne, les Belges prirent une unité aux Italiens ; ils la baptisèrent „Eros" mais, dans la suite, les Anglais la réclamèrent pour faire du service à Khartoum.

Ce bateau „Eros" avait toute une histoire. A l'origine, c'était le „Pie XI" ; il avait été offert à la mission catholique de Khartoum par le „Comitato milanese pro-Africa" qui le considérait comme un don au pape Pie XI, originaire de Milan. Ce bateau fut construit en 1926 par le chantier Breda de Mestre (Venise). Sa coque en acier mesurait 17 m de long, 3,50 m de large et était équipée de deux moteurs de 37 ch. Il comportait des logements pour 12 personnes et pouvait transporter 17 t de marchandises.

En 1938, il fut vendu à une firme italienne qui faisait le commerce de café. Le bateau avait alors Gambela comme port d'attache et naviguait sur la rivière Baro. Saisi par les Belges en 1941, il servit aux „Transports par Eaux Intérieures" pour assurer la liaison entre la base de Juba et la zone de guerre où les troupes belges étaient en action.

Les Italiens qui avaient acquis le bateau de la mission, changèrent son nom et le baptisèrent „Capitan Bottego", nom d'un explorateur africain qui vécut de 1860 à 1897. A leur tour, les Belges le nommèrent „Eros".

Les transports des approvisionnements se faisaient au moyen de 8 barges de 11 t et de 12 barges de 18 t de capacité.

Au mât de pavillon à l'avant, flottait le fanion de l'unité : d'azur à l'ancre jaune et les. lettres T.E.I. avec, dans le coin supérieur gauche, en arabe, Juba-Malakal. A l'arrière, les unités arboraient le pavillon belge.

Pour les premiers voyages, les Belges eurent recours aux services de pilotes arabes des „Sudan Railways and Harbours". Mais des cartes de navigation furent dressées, à l'instar de celles qui

existaient pour les affluents du Congo, ce qui permit, après deux ou trois voyages, de se passer des pilotes arabes.

Le service de transport fluvial organisé par les Belges fonctionna jusqu'au mois de mars 1942. Dans la suite, l'État-Major envisagea d'envoyer cette flottille au Canal de Suez. C'était une idée assez discutable, qui ne fut d'ailleurs pas mise à exécution. L'équipe des „Transports par Eaux Intérieures" fut rappelée au Congo et remit le chantier et le matériel flottant aux Anglais. Les Belges et les Congolais rentrèrent au Congo en avril 1942, emportant cependant le canot „Algol", le remorqueur „Luka" et deux barges de 11 t qui servirent comme premiers bacs de passage à moteur à Avakubi, sur l'Ituri. Ainsi se terminait l'expédition des „Transports par Eaux Intérieures" sur le Haut-Nil.

Pendant son séjour à Juba, Ruytinx en profita pour remettre en ordre les tombes des cimetières de Redjaf et de Lado, où avaient été inhumés les restes des officiers de la Force Publique qui avaient contribués à mettre en déroute

les esclavagistes qui razziaient cette portion de l'Afrique à la fin du siècle précédent. Ces faits sont bien oubliés, si pas ignorés ; cependant, ils font honneur à ceux qui en furent les acteurs. C'étaient des hommes de devoir qui accomplirent leur mission dans des conditions difficiles, même héroïques pour certains d'entr'eux. Venus de toutes les régions du pays, ces Belges oeuvrèrent ensemble dans un effort commun et ont servi dignement le renom de la Belgique dans les pays d'outremer.

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MARINE ACADEMIE
V. Z. W.
MEDEDELINGEN

Inséré le 24/07/13 HISTORIEK HISTORIQUE Enlevé le 24/08/13

Navigation e-Volution

Electronic navigation systems, and ECDIS in particular, are set to grow in importance and form the standard for vessel navigation over the next few years. How will these changes affect safety and bridge operations at sea? Digital Ship spoke to Petter Brandt, Stolt Tankers, about the e-Volution in navigation.

With the mandatory carriage requirement for ECDIS set to be phased in from July of 2012, the whole landscape of vessel navigation is set to change over the next few years.

Competence in the use of this electronic equipment has become a prerequisite for modern seafarers with the Manila Amendments to the STCW, and the next few years will see an enormous demand for navigator training to add familiarisation with technology to the traditional skills already learned as a cadet.

Opinion is divided on how the introduction of ECDIS will affect bridge operations – will the systems add to situational awareness and improve safety, or will crews struggle, in the early stages at least, to adapt to a new way or working?

Stolt Tankers operates approximately 80 of its own ships, and a number of others on time charter. The company has been using ECDIS for a number of years on its vessels, as early adopters of the technology, and as such is in a good position to welcome the carriage requirement for the equipment.

However, the company is not treating this change in the regulations as a revolution in navigating – rather, it is seen as an evolution, as Petter Brandt, navigation superintendent, Stolt Tankers, explains.

“The ships we built at the end of the 1990s, already then they were prepared to go fully paperless. They had dual ECDIS onboard,” he told us.

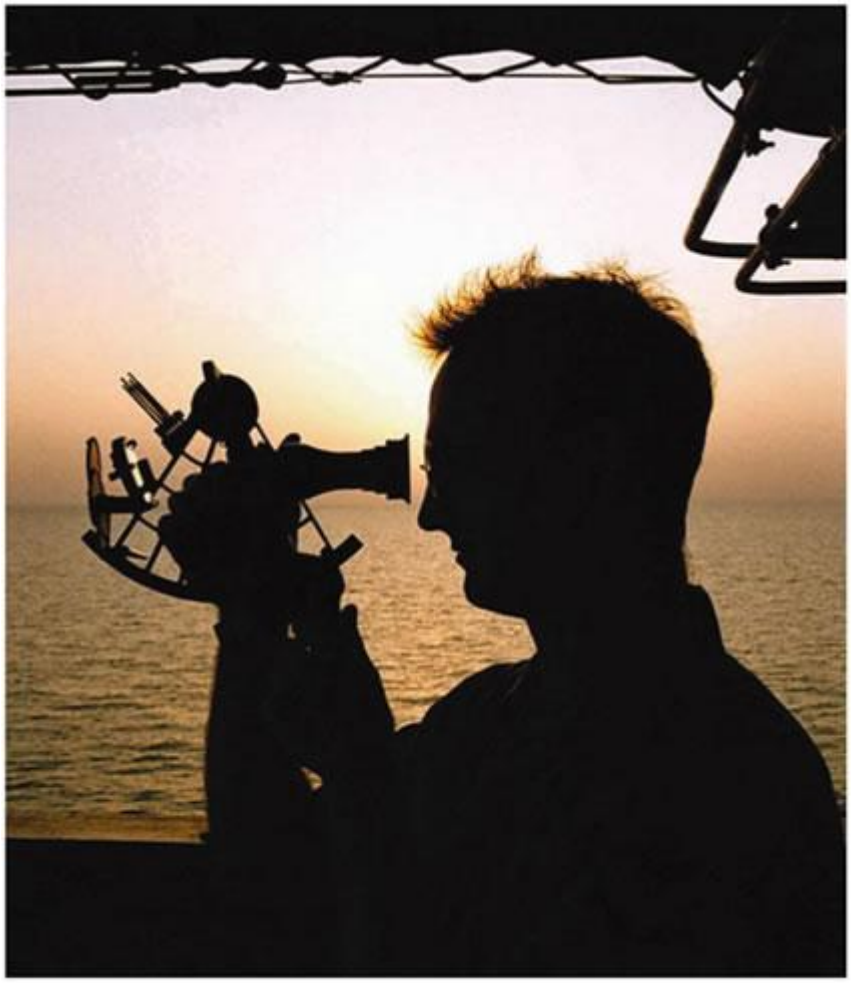
“But we didn’t do it in those days because, in a way, the world wasn’t ready for it. We had all the hardware, we had the software, we had the people, but in some ways we still weren’t quite ready. Today we have a growing number of ships operating in worldwide trade using very few paper charts.”

“We all know what ECDIS is, there is a lot of buzz and there are discussions going on about ECDIS, and we have the upcoming rules and regulations forcing us to use it. Is it really something new? Why are people so concerned about the introduction of ECDIS?”

The art of navigation

The art of navigating ships on long voyages is not new – humans have been finding their way around the seas for millennia, applying many principles that are still relevant today.

Technology has changed, and the information sources available on ship have expanded, as seafarers strive to improve the accuracy of their positioning and the safety of their passage.



Electronic navigation may be new – but many of the fundamental concepts of navigation still apply

“Way back we had celestial navigation, that’s really an old thing going back 2,000, 3,000, 4,000 years. People would lie on the hills drinking wine and would see giraffes and other types of animals up in the stars, and eventually they managed to find their way using these stars,” noted Mr Brandt.

“The compass is another one, we don’t really know how old it is but it revolutionised the art of navigation. Charts have existed for millennia, but up until quite recently they were a military secret and the property of the one who made the chart. Sharing a chart with somebody else was high treason up until about 200 years ago.”

“Determining time and figuring out the concept of longitude was also a significant step forward towards the art of navigation we see today.”

Moving forward from these very early navigational methods, the discovery of electricity was an important step in opening up the potential to power the devices we have on modern bridges.

“Electricity hasn’t been around forever, and without electricity would we be able to navigate the way we do today? Probably not. Though we had been navigating for a few thousand years without electricity,” said Mr Brandt.

“Gyrocompass, radar, GPS, AIS, ECDIS – they’re all brand new inventions. But we’ve been perfectly able to navigate the seas for centuries or even millennia without these things. So how have they changed the way we do things today?”

Mr Brandt argues that most of these electronic innovations, while changing the operational processes on the bridge, have not fundamentally changed the core concpts that underlie competent navigation.

"(ECDIS is) said to be the largest advance in navigation since the radar in the 1950s. What do we do with it?" he said.

"With the charts we all used to use, they were used to see what's out there and get an idea of where you can go. You would also use it to figure out how you will get there, how long it will take, and so on."

"Looking at an electronic chart, it's also showing you what's out there, and you use it to see where you are and where you are going, what's around you and how you are going to get there. The concepts are pretty much the same."

Mr Brandt highlights this by noting how the differences in how a seafarer performs the voyage planning function using an electronic chart or a paper chart are less significant than may be expected.

"The way you do it, practically, is perhaps a little bit different but from a concept point of view there's absolutely no difference," he said.

"Generally speaking, you need to see where you are, where you are going, if it's going to be deep enough or if there are any dangers along the route. Position fixing, plotting, bearings, ranges, distances – you can do it all completely manually on the paper chart as well as on the ECDIS. Nowadays there is compass bearing equipment available that can send your bearings electronically direct into the ECDIS."

"Electronic might be easier, but manual is just as accurate and the result is the same. Either way, you still need to plot the position lines. Whether you do that by 'click and drag' or you do it with a pencil and triangle, the concepts are the same."

Voyage planning is only one of a number of navigational functions that, despite the use of updated technologies in their performance, rely on fundamental concepts that have been familiar to mariners for generations.

"Technology has changed – but the way things work hasn't for a few thousand years. The concepts are all the same," said Mr Brandt.

"You still need to be very suspicious, and maybe you need to be a little more suspicious these days when the machines are doing things for you. You still need to double check position, just because the GPS is plotting your position doesn't mean that's where you are – as little as plotting your position on a paper chart means that's where you are."

"You still need to think ahead and plan ahead, because if you don't do that you will become a passenger on your own ship; instead of you driving the ship around it will drive around with you – and this is a very dangerous situation."

Changes in approach

While the basic concepts of navigation may not change significantly through the use of changing technology, the process of applying those skills will start to shift, and there will be differences in vessel operation that seafarers will need to adapt to.

"Automatic position plotting – that's a major difference," said Mr Brandt.

"It's 'Click and drag' instead of using a pencil and divider – if you have thick, fisherman's fingers then maybe using a computer might be difficult, but being familiar with the concept of computers is a necessity."

"In the old way of doing things you would put your position on the chart and then 20 minutes later you'd start wondering where you have been and where you are now. On an electronic chart system it's a live view, more or less."

Another significant difference is in the chart itself, moving from a large, fold-out piece of paper to an electronic display showing one particular portion of a chart at a time.

“Instead of having a big pile of paper charts of different scales, you have everything in one view. But you still need to use different scales of charts, zooming in and zooming out instead of flipping paper charts back and forth,” said Mr Brandt.

“A lot of people complain ‘you can’t look ahead, you can’t see 10 or 15 miles in front of you, you only have a small screen’. They want a 60 or 70 inch screen, the same size as a paper chart. But that’s wrong thinking.”

“You could have an enormous screen on the bridge but that won’t change the resolution, the amount of information will still be the same. The resolution will be the same as on a regular sized screen, the information will be the same. So you need to understand the concept of zooming in and zooming out, and how information layers change.”

As Mr Brandt notes, changes like these don’t require the operator to change the way they think about navigation, but will need them to adapt to performing their tasks in a new way.

“The task of navigation has now changed from trying to figure out where you are now and where you are going, to seeing where you are and figuring out if that is true!” he said.

“It’s more about monitoring and looking to see if the machines are trying to cheat you. That requires quite a significant shift in the mindset of the operator, because it’s so easy to become complacent and just ride with the ship instead of driving it.”

One of the major benefits of using ECDIS is chart updating, which can save hundreds of hours per year when compared with paper charts

The trade-off for the mariner in having to suffer the pain of change in moving to electronic systems is the significant benefit of reduced effort in chart updating, and the simplified process of voyage planning with a wider array of available information.

“Anybody who has worked onboard and has been correcting charts knows how painful and time consuming and boring it is, and how easy it is to make a mistake. That has effectively been wiped out now,” said Mr Brandt.

“We’ve been studying our own crew, and I’ve interviewed probably six or seven hundred of them, and the conclusion is that, on average, on a deep sea ship, you spend somewhere around 800

hours per year on chart correction and voyage planning, if you have a folio of, say, 1,000 to 1,200 charts like we carry on our deep sea ships."

"That's a cumbersome task for officers who are nowadays more or less drowning in all the mandatory and otherwise required paper work. So saving time is a major contribution here, which is – if you think about it – a quite unusual effect of a new regulation."

Mr Brandt has also seen that route planning is now performed much quicker onboard, and the technology can assist in avoiding danger – if used correctly.

"You have an automatic checking tool, for example, but there are some tricky aspects, there is some hidden information in the chart," he said.

"On every chart you have information in the margin, but on the ENC a lot of it is hidden as metadata, which means you need to look for it to find it. If you don't know that information exists, you don't know that you need to go looking for it or extract it, and then you will miss it."

That being said, Mr Brandt does believe that the use of electronic navigation systems has made vessels safer and will continue to enhance the ability of the navigator to become aware of, and avoid, dangers at sea.

"In the old days you had various instruments, and you put the picture together in your head, which is a more demanding and error prone task than most people think or believe," he said.

"On the electronic chart it all comes into one view, which helps you get a much better situational awareness."

"You don't need official ENCs for this, you just need a general chart system (ECS) with some kind of chart data – official or unofficial – as a backdrop. Having your position live, roughly in relation to land masses and to traffic in the areas covered by the radar, helps a lot to tell you where your 'exits' are in case of a difficult traffic situation."

Away from the bridge, Mr Brandt has also seen financial benefits for the shipping company as a result of employing ECDIS onboard, with Stolt Tankers now spending less on electronic charts than it did on sailing with paper.

"We've seen a significant improvement on our deep sea ships, we are looking at a cost reduction of about one-third when using only ENCs compared to using paper charts," he said.

"Paper charts are not free, a collection of charts like we have on our deep sea vessels could cost you about $35,000, and that's being replaced every five years. ENCs are also expensive, if you want to buy the same coverage on ENCs you're probably looking at about $200,000, but you don't buy that many ENCs. You buy the ENCs you need for the voyage. That way you can reduce the costs significantly."

"It's also giving you increased flexibility, because you can go wherever you want. You can have all of the charts onboard but you only pay for the ones you need when you need them. If you need to go somewhere else you buy a licence for where you need to go, and you're up and running. If you don't have the paper charts you need for the new destination you're in trouble – you can't go there. You'd have to fly them out or bring the charts out on a pilot launch."

Electronic challenges

Of course, while any new technology may bring with it a range of benefits, generally there will be a number of challenges that need to be overcome to maximise the benefits of moving from one way of working to another.

Stolt Tankers has had to deal with many of these challenges over the course of its experience with electronic navigation systems. One of the most pressing of these is the issue of system availability – compared to paper, computer-based technologies are a lot more prone to breaking down.

“On the technical side, how do we keep the system running and what if it fails? We all know what computers are like today, sometimes they just decide that they don’t want to work for you anymore and shut down,” said Mr Brandt.

“Hardware reliability can be covered in different ways, one simple way is by redundancy, having multiple systems. The regulations say you need two ECDIS systems onboard (to remove paper charts), but if you have three you will be even more safe, from a commercial point of view.” “If you have two systems and one goes down, what do you do then? Do you repair it? Will you be able to get the spare parts?

That depends on where you are. Do you get the paper charts? That also depends on where you are. So having a third unit is, the way I see it, very cheap insurance. From a practical point of view it also makes sense, as you really need three units onboard – one to keep next to each radar and one at the chart table for planning.”

Virus protection is another key issue that can seriously affect the electronic navigation systems on the bridge, particularly ECDIS, if precautions are not taken.

“Getting viruses on the systems is more common than most people think. Talking to technicians and service engineers I hear that this is a pretty big problem,” said Mr Brandt. “In most cases it will not affect the system that much, but as it builds up what normally happens is that it steals processor power and the system will be more and more sluggish and slow.” “How do viruses get into the system? Normally not through email, normally they come in via USB devices. When you start transferring data using USB devices, or even people plugging in their own USB devices to install stuff, it can happen.”

In this regard Mr Brandt insists that proper anti-virus protection is a necessity – however, introducing anti-virus software then raises the question of whether a system is still type-approved if used together with an anti-virus software that was not part of the original installation.

“Maybe, maybe not,” said Mr Brandt. “When you have your system type approved it’s approved with that particular OS, with that hardware. If you install additional software it might make the type approval void.”

“So you need to figure this out, find a system that is approved with virus protection or have strict procedures to protect your system from USB devices.”

Making sure that the correct charts are available on the ship as ENCs is another issue that needs to be considered – seafarers need to make full use of the software systems that run in conjunction with ECDIS to make sure they are managing their chart folios correctly.

“Whether you’re navigating with paper charts or ENCs, you always have to use the charts with the best scale. How do you know which is the best scale available? You need to compare the chart catalogues,” said Mr Brandt.

“That’s not an easy task unless you have the right tools. There are chart management systems on the market today where you can easily compare the ENC coverage with paper charts, and see if there’s a paper chart with a better scale. You need to use that.”

“I understand that most of the equipment manufacturers still don’t bother too much about this, if they have even thought about it. Most refer back to the chart agent, and the chart agents look a bit puzzled as they don’t seem to understand the issue.”

Updating

Having the correct charts available is a continuous process – even after the charts are licensed they must be updated as new data is made available to remain in compliance for navigation.

As Mr Brandt previously noted, the effort involved in this process is vastly reduced through the use of electronic charts – however, another challenge still remains in getting the data from the shore to the ship so that this updating facility can be taken advantage of.

“Do I send it by CD or by e-mail? Do I download it? ENCs are heavy loads, each ENC can be 5-6 MB – how much does that cost? Do I need to keep my charts up to date all the time?” said Mr Brandt.

“With paper charts there’s a gentlemen’s agreement that six, seven, eight weeks lagging is not a problem because you have to allow reasonable time for the mail to reach the ship.”

“But now when you have connectivity by satellite you can just download them – why didn’t you do that? Because it’s going to cost a fortune – $10,000 to $15,000 per month if you’re not careful. Do you or your chart agent have mechanisms in place to monitor and control this?”

The applicability of Temporary and Preliminary (T&P) Notices with corrections for charts is another issue that needs to be considered – something that Mr Brandt describes as a ‘hot topic’ when it comes to ENCs, which he feels requires clarification from authorities.

“T&P Notices apply to paper charts, but do they also apply to ENCs? Do you have to plot your temporary and preliminary notices on ENCs? I think ‘No – because look at it the other way round. Do you have to do your ENC updates on the paper charts? That’s ridiculous, so why should you then apply updates the other way round?” he said.

“ENCs are approved, officially recognised charts. Paper charts are officially issued and approved charts. They have exactly the same status. So why should we then be forced to do quality control of what the hydrographic offices are doing – or not doing?”

“SOLAS requires hydrographic offices to provide us with the required updates. If they don’t do that then we can’t be blamed. They should provide us with the updates in a convenient way. We have to educate the world about that and IHO and IMO need to make sure everyone involved lives up to and follows the set standards; T&P notices do not exist in any of the relevant standards governing ENCs and ECDIS and nor should they – and an update is an update. People onboard should not have to worry about this – they should only have to load the latest updates and leave it at that.”

Training

Another area that is a ‘hot topic’ is seafarer training in electronic navigation systems, with competence levels a matter of great concern when it comes to ensuring safety at sea.

Mr Brandt highlights the issue by reference to a recent accident investigation report that uncovered a dangerous lack of situational awareness on behalf of the crew on the ship in question.

“A tragic accident happened a few months ago, where a container ship ran down a coastal vessel, at the loss of the entire crew. The OOW on the container ship didn’t even notice that something had happened,” he said.

“In the MAIB investigation report, an official authority, I found one quite remarkable comment which said that there is no connection between certification and competency. There’s no relationship at all.”

“So what they’re actually saying is to forget about STCW, it’s got no connection to reality. And this is not the first time they say this, it can be found in more reports from MAIB.”

Another concern that Mr Brandt raises is the issue of continued assessment and assurance of competence after a licence has been issued, to make sure that a watchstander still possess the skills required to safely do their job.

“Unfortunately, regulations typically only permit authorities to revoke a licence in cases of accidents as the ones mentioned above,” he noted.

“In a situation where, for example, someone takes an exam to upgrade a licence but fails on e.g. COLREGs, this person will not get the higher licence. However, there is, as far as I know, no legal room to also revoke the current licence, despite the fact this person doesn’t know something that should be ’bread and butter’.”

“Administrations and the world in general put a lot of pressure on us owners, saying we need to fix this – it’s not our fault, it’s the shore side establishment who can’t train people properly in the first place, why should we suffer from that?”

Navigation future

Looking forward, Mr Brandt believes that there are a number of areas ripe for improvement that would help to make electronic navigation more beneficial to shipping companies, and the industry at large.

“What I would like to see is maybe improved chart coverage, though it has improved significantly over the years, and improved communications to get the charts onboard,” he said.

“And of course, HO's need to get their act together and shift their focus from profit towards safe navigation as their top priority by giving us flexible access to charts at a reasonable cost.”

“Another thing for developers, and maybe for IMO, extracting ‘hidden’ information needs to be easier. Today you have to actively look for quite a few things, and I think there must be ways of getting easier access.”

Mr Brandt is hopeful that improvements in satellite communications technology will help to make the updating process more cost effective, by bringing per-MB prices down to a lower level.

“The communications cost today is holding us back,” he said. “We’re still operating successfully, but it would make life a lot easier having direct connections onboard.”

“There are systems out there, but will the infrastructure manage and cope if all of today’s fleet go online? I’m not sure – would be interesting to hear what the network owners/ operators have to say.”

‘We are looking at a cost reduction of about one-third when using only ENCs compared to using paper charts’ – Petter Brandt, Stolt Tankers

Mr Brandt believes that there is also further room for improvement with regard to the user interfaces currently employed on ECDIS equipment, and the information sources feeding into the navigational display.

“Many are relatively easy to work with but there’s still work to do, especially when it comes to traditional navigation,” he said.

“All systems today are basically built to work using only GPS. There’s so much more we can do with a chart system today than just navigating on it, and there are more factors that can be brought into it.”

“That said, I do not believe in the widely discussed ‘S-mode’. I think this would only hamper development. Better then to make pilots bring their own laptop or tablet with their own chart system and hook it up to the ship’s sensors.”

With this new age of ECDIS and electronic navigation set to become a major part of navigation for the next generation of mariners, Mr Brandt suggests that shipping companies take advantage of the opportunities available to then to improve operations and enhance safety.

“Don’t be afraid of technology, there’s a lot of scepticism out there but there’s nothing wrong with the technology, it’s been around for decades. I started my career on ships that were more or less ready to go paperless 20 years ago – but we’re still almost not there,” he said.

“The technology is there to help you, figure out how it works and make friends with it. It does help having good connectivity, but it’s not necessary. It still works. What is maybe more important is to invest in people.”

“We often focus on the hardware but we need to invest in the people as well, especially looking at the general competency problems in the industry today, it’s even more critical. The methods have changed, but the concepts are all the same. It’s not that much of a revolution, is it? Maybe more like a natural e-Volution.”

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Inséré le 24/07/13 Boeken Livres Enlevé le 24/08/13

B O E K B E S P R E K I N G

Door : Frank NEYTS

“Mercator & de Belgische schoolschepen”.

Bij de uitgeverij Lannoo verscheen recent een buitengewoon interessant boek onder de titel “Mercator & de Belgische schoolschepen”. Werner Van De Walle tekende als auteur. Het museumschip ‘De Mercator’ uit 1932 is een beschermd monument en wellicht het bekendste vaartuig van België. De driemaster ligt nu afgemeerd in de jachthaven van Oostende. Aan de hand van talrijke getuigenissen wordt de geschiedenis van de ‘Mercator’ geschetst. De vele omzwervingen van de laatste in de reeks van drie Belgische zeilende opleidingingschepen worden in een ruim kader gesitueerd. Terwijl de meeste vroegere publicaties stopten in 1960, toen het schip werd stilgelegd, wordt hier in een afsluitend hoofdstuk een antwoord gezocht op de vraag hoe het nu verder moet met dit niet langer varend maar wel nog steeds drijvend monument. “Mercator en de Belgische schoolschepen” is een rijk geïllustreerd boek met talrijke boeiende en persoonlijke getuigenissen. Een aanrader!

“Mercator & de Belgische schoolschepen” (ISBN 978-90-209-5996-3) werd op groot formaat als hardback uitgegeven en telt 176 pagina’s. Aankoopprijs 39.90 euro. Aankoop via de boekhandel. Meer info op www.lannoo.com

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Rudder repair numbers causing concern

During the last couple of years, there has been a substantial increase in the number of enquiries for temporary underwater rudder repairs, clearly showing the need for cost savings and lasting solutions.

A great deal of effort goes into the design and manufacture of rudders because they are such an important part of a vessel. If a rudder is not given the proper protection against cavitation and the resulting erosion and corrosion damage, the financial consequences can be substantial for the owner, warned Ecospeed.

Rudder cavitation is caused by the movement of the propeller blades. A low pressure area is created in the water around and behind the blades as the vessel gathers speed. The faster the blades move,

the lower the pressure around them becomes. At a certain point the water reaches vapour pressure and forms small bubbles of gas, a process known as cavitation.

When the bubbles move into a higher pressure region of the flow, they collapse and cause very strong local shockwaves in the water, which may be audible. All objects close to the propeller, which have an uneven surface, such as parts of the hull and the rudder, suffer from this cavitation because these objects disturb the flow of the water and cause the bubbles to implode.

In itself cavitation, if it is monitored correctly and kept under control, presents no serious danger. But in the long term, cavitation erosion appears. The effect is comparable to a steel tipped hammer that is repeatedly hit against a steel surface at exactly the same location; after a while damage will occur. The cavities created by the implosion of the gas bubbles will then grow deeper and deeper and in the end can eat right through the propeller blade, the rudder, or the hull. Large eroded areas can occur this way. Besides the mechanical damage caused directly by the cavitation process, it also opens the door for corrosion damage, Ecospeed said.

A metal object in water will cause electrolysis (chemical erosion of the metal caused by an electric current, which is created due to a difference in potential between the metal and the surrounding water). This effect is enhanced in salt water where a negative potential difference between the vessel and the water is created. If the surface of a rudder has been damaged by cavitation, the protective coating will have worn away, leaving bare steel. This accelerates the electrolysis process and the steel of the rudder is eroded.

Cathodic protection

To avoid this, a system known as galvanic cathodic protection is employed on ship hulls. Sacrificial anodes usually made of an alloy of zinc, magnesium and aluminum are installed on the hull. Because the sacrificial anode has a lower potential than the steel of the hull (it is made of a less noble metal, meaning more susceptible to chemical change), the anode will suffer the damage instead of the hull, or other steel part of the ship.

Cathodic protection systems are normally designed to assume 5% paint loss a year for the first three years of a vessel's life. This means that the impressed current cathodic protection (ICCP) system offers corrosion protection to those areas where paint damage occurs, as well as managing the issues of dissimilar metals.

It is therefore important that the coating can work in conjunction with such systems, according to Dr Raouf Kattan, who is a coating specialist for Safinah, a unique consultancy focusing on marine and protective coatings and staffed with experienced coating chemists and naval architects/engineers.

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Inséré le 28/07/13 OPEN FORUM Enlevé le 28/08/13

Only one in three ECDIS functions as expected - IHB

A check on the performance of data displays on ECDIS systems by the International Hydrographic Bureau (IHB) has produced some alarming results, with the organisation reporting that only one-third of reports it received showed the equipment to be functioning as expected.

The International Hydrographic Bureau (IHB) has issued a circular with updated information on the results of an ENC Data Presentation and Performance Check initiated in October 2011 to examine the performance of ECDIS systems, which notes that only one-third of the manufacturers' systems reported were functioning as expected.

According to the circular, by the end of February the IHB had received nearly 500 reports from sea, covering 15 out of approximately 25 recognised manufacturers of type-approved ECDIS. It notes that the 15 manufacturers represent "by far the most popular brands of ECDIS being used at sea today."

Out of these ECDIS installations it is noted that "about a third of the manufacturers' systems reported to the IHB appear to function as expected in the checks."

"A further third of the systems display all significant underwater features, including underwater obstructions, but the isolated danger symbol required to be shown under certain conditions is not always used."

It continues: "This issue is unlikely to have a significant impact on safe navigation. Most of the remaining third of the systems reported to the IHB failed to display some significant underwater features in the 'Standard' display mode."

One issue highlighted by the study was that a significant number of ECDIS did not always show the required isolated danger symbol when expected. "Under various conditions, mostly related to safety depth settings and other variable factors, these underwater features can include some types of wreck and other obstructions. All these features are displayed in the 'Full display' or 'All display' mode."

Recommended checks

As a result of these display issues, and the potentially serious consequences if mariners are not made aware of shortcomings in some ECDIS equipment being used at sea, the IHB Directing Committee is encouraging all Member States to promulgate the information contained in the circular to all seafarers using ECDIS.

All mariners using ECDIS are encouraged to check their ECDIS equipment using the IHO ENC Data Presentation and Performance Check, available at http://bit.ly/wZjzCD.

This will enable them to determine whether their ECDIS requires that the display be operated in 'full display' mode in order to display all important charted features.

The circular particularly notes that users of certain older models of Japan Radio Co. Ltd (JRC) ECDIS equipment should check compatibility of their systems using this Performance Check, after JRC confirmed that earlier versions of its ECDIS were not displaying some types of wreck and underwater obstructions (including stranded wrecks) in any display mode.

For these models of JRC ECDIS, the mariner must navigate in conjunction with paper charts in order to ensure that all wrecks and underwater obstructions can be identified.

JRC has already issued a notice alerting its customers to this problem and has made an upgrade package available. The notice from JRC can be downloaded at: http://bit.ly/Hhb2XW, while the JRC upgrade package can be downloaded from: http://bit.ly/w76VYw.

In all cases where the ECDIS is found not to operate as indicated by the IHO ENC Data Presentation and Performance Check, seafarers are advised to contact the ECDIS manufacturer or their ECDIS maintenance organisation to seek relevant upgrades to their equipment. ds

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Inséré le 30/07/13 OPEN FORUM Enlevé le 30/08/13

Zeilschip zonder zeilen

Het Sifferdok in de Gentse haven was recentelijk het decor voor een bijzonder schouwspel: het innovatieve E-ship 1, dat gedeeltelijk door wind wordt aangedreven, legde er aan om molenwieken te laden.

Eerlijk is eerlijk: een schoonheid is het E-ship 1 niet. Het mag dan het meest ecologisch verantwoorde schip ter wereld zijn, qua esthetiek is het geen hoogvlieger. Een logge romp, een stompe boeg en dan die 27 meter hoge zuilen op de vier hoeken, die er uitzien als uit de kluiten gewassen tafelpoten. Maar het zijn wel die vier zuilen die het schip zo bijzonder maken. Dit zijn namelijk de Flettner-rotors, waarmee het schip de wind als voortstuwingsmechanisme kan gebruiken. Dat laatste heeft het E-ship 1 gemeen met zeilschepen.

Eigenaar van het E-ship 1 is de Duitse windturbinespecialist Enercon. Die gebruikt het om enorme molenwieken te vervoeren naar de plaatsen waar windturbines worden geplaatst. Het schip is dan ook in Gent om een lading van 48 molenwieken te laden en naar het Duitse Emden te transporteren.

Als specialist in windenergie beschikt Enercon over een afdeling ‘nieuwe technologieën’, waar het idee ontstond om een eigen schip uit te rusten met Flettner-rotors. Die zijn genoemd naar de Duitse ontwerper Anton Flettner, die het principe al in 1920 met succes toepaste. De Enercon-ingenieurs haalden het concept vanonder het stof en pasten het na tests in een windtunnel toe op het vrachtschip. ‘Alles aan dit schip is erop gericht om zo weinig mogelijk brandstof te gebruiken en de

uitstoot tot het minimum te beperken', zegt Rolf Rohden, de project manager van het E-ship 1 in Windblatt, het tijdschrift van Enercon. De vier rotors werken als zeilen, maar zouden tot tienmaal zo efficiënt zijn bij het omzetten van windenergie in voortstuwingskracht. Daarnaast zijn ook de vorm van het schip, het roer, en de schroef gericht op de minimalisering van het energieverbruik. 'We willen met dit schip echt laten zien wat er mogelijk is', zegt Rohden. 'Ik ben ervan overtuigd dat dit een eerste belangrijke stap is in de richting van een energierevolutie in de scheepvaart'.

De Flettner-rotor lijkt één van de vele technologische vernieuwingen die ooit veelbelovend leken, maar door een samenloop van omstandigheden in de mist van de geschiedenis zijn verdwenen. Het is gebaseerd op het zogenaamde Magnus-effect, dat in 1852 beschreven werd door Heinrich Gustav Magnus. Dit effect zorgt ervoor dat een tennisbal die snel ronddraait, een gekromde in plaats van een rechte baan beschrijft. Dat komt doordat de luchtdruk aan weerszijden van de draaiende bal verschilt. Op dezelfde manier verschilt ook deluchtdruk als de wind langs de sneldraaiende rotors op het **E-ship 1** beweegt. Door dat verschil in luchtdruk wordt het schip voortbewogen.

Het duurde overigens nog zeventig jaar voordat het Magnus-effect werd toegepast op schepen. Dat gebeurde voor het eerst toen de wiskundeleraar en uitvinder Anton Flettner in 1924 het vrachtschip **Buckau** met twee Flettner-rotors uitrustte. Een tweede Flettner-schip, de **Barbara,** voer tussen 1926 en 1929 succesvol over de Middellandse Zee. Daar bleef het vervolgens bij. Reders waren niet geïnteresseerd in de technologie, omdat de energiebesparingen niet opwogen tegen de investering. Pas in 1973 gaf de oliecrisis de belangstelling voor de Flettner-rotors weer een nieuwe impuls. In 1986 werden plannen gesmeed voor een Flettner-olietanker, maar ze werden weer afgeblazen toen de olieprijs zakte. Twintig jaar later bouwde de universiteit van Flensburg een catamaran met één Flettner-rotor. Pas in 2010 werd er echt een nieuw hoofdstuk in de Flettner-geschiedenis geschreven, toen het **E-ship 1** te water gelaten werd in Emden. De Flettner-schepen staan volop in de belangstelling bij technologie-adepten. Op het internet zijn verscheidene filmpjes te zien van experimenten met Flettner-modelscheepjes die door een oversized badkuip of een zwembad worden voortbewogen met wind die uit een ventilator komt. Maar of de technologie echt een revolutie in de scheepvaart inluidt, zoals Enercon hoopt, valt nog af te wachten. 'Hoeveel energie we met dit innovatieve systeem besparen, moeten we nog evalueren. Daarover zijn eind dit jaar gegevens beschikbaar', laat Enercon-woordvoerder Felix Rehwald weten. Volgens ingenieurs zouden de Flettner-rotors voor een energiebesparing van 30 tot 40 procent moeten zorgen. Helemaal uitstootvrij is het **E-ship 1** niet, want de rotors worden aangedreven door dieselmotoren.

Inséré le 03/08/13 BOEKEN LIVRES Enlevé le 03/09/13

"The Evolution of the Transatlantic Liner".

Bij The History Press verscheen begin juli een interessant boek getiteld 'The Evolution of the Transatlantic Liner'. Het werd geschreven door Chris Frame en Rachelle Cross. Dit boek brengt de verschillende types van transatlantische 'ocean liner' van bij het allereerste ontwerp in de negentiende eeuw tot de modernste types op vandaag. Het boek beschrijft de belangrijke evolutie dat het passagiersvervoer over de Atlantische Oceaan, een evolutie dat vooral gebaseerd is op steeds betere scheepsontwerpen (ship design), op hun beurt het resultaat van de steeds betere technische evoluties.

Het boek toont ook hoe deze enorme oceaanschepen een bijdrage hebben geleverd tot de egalisatie van de samlevingen aan beide kanten van de Atlantische Oceaan. In een boek, vol zeldzame foto's, verklaren de auteurs hoe, in een veranderende wereld, de politiek en de technologie ertoe hebben bijgedragen dat er steeds grotere, snellere en majestueusere schepen werden gebouwd. In het boek komen er schepen aan bod zoals de 'Great Western', de 'GreatBritain', de 'Britannia', de 'Etruria', de 'Kaiser Wilhelm der Grosse', de Oceanic', de 'Lusitania', de 'Mauretania', de 'Olympic', de Titanic', de 'Bremer', de 'Normandie', de 'Queen Elizabeth', de 'United States' en nog zo veel andere.

Dit boek zal een waardevolle aanvulling uitmaken van iedere maritieme bibliotheek!

"The Evolution of the Transatlantic Liner" (ISBN 978-0-7524-7973-6) telt 120 pagina's en kost £19.99. Het boek werd als een softback uitgegeven. Aankopen kan via de boekhandel, of rechtstreeks bij de uitgeverij, The History Press, The Mill, Brimscombe Port, Stroud, Gloucestershire GL5 2QG. Tel. +44(0)1453.732505, e-mail: web@thehistorypress.co.uk

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Inséré le 03/08/13 OPEN FORUM Enlevé le 03/09/13

The Ecdis revolution

Ecdis technology will be of little benefit in enhancing navigational safety if the watchkeeping officer is not fully trained and competent in its use, says Philip Wake, Chief Executive, The Nautical Institute

A revolution is a fundamental change in power or organisational structures that takes place in a relatively short period of time, according to Wikipedia. We're not trying to overthrow the establishment here but we are making a fundamental change to the way we navigate vessels. The electronic chart display and information system (ecdis) concept is a total change from using paper charts and the transition from paper to electronic charts will pose a major challenge for the industry, particularly for those who have no electronic chart experience.

Mariners should be aware that ecdis is more than just a digital version of a paper chart. Important bridge procedures are significantly affected, and these require careful analysis and consideration if ecdis-assisted groundings are to be avoided. Sadly they have already started to occur. It is important that traditional navigation skills are not lost and that navigators become confident in the use of ecdis - but not overconfident.

There is a danger that many bridge watchkeepers will increasingly trust without question what is displayed. The need for bridge watchkeepers to remain vigilant and to continuously monitor a

vessel's position in relation to navigational hazards remains paramount, regardless of the electronic aids available.

Having an ecdis must not lull the mariner into a false sense of security. Ecdis is another electronic aid to navigation, albeit a very significant one, but it is not a substitute for observing good seamanship or for maintaining an effective lookout at all times during the voyage. By itself, ecdis is no replacement for a trained and experienced navigator. The benefits and limitations of electronic navigation must be understood by the navigator to enable ecdis to be used efficiently and safely.

To ensure the safety of navigation, the shipping community must acknowledge that watchkeepers' training and experience are critical factors in mitigating the risk of collisions and groundings.

However, ecdis requires a different way of thinking, and this cannot be picked up by attending an ecdis course lasting a few days. All of this new technology will be of little benefit in enhancing navigational safety if the watchkeeping officer is not fully trained and competent in its use.

Advice

When joining a vessel for the first time where navigation is by ecdis, mariners should:

- ensure that the system is an approved ecdis, i.e., that it is type approved, is approved by the flag state administration and always uses official hydrographic data - everything else is an electronic chart system (ECS) used for situational awareness only, and it is difficult to tell them apart; the vast majority of ships use ECS not ecdis
- be aware of the differences between official and unofficial chart data for use in the onboard system (many ecdis hardware systems are able to display unofficial data)
- ensure that there are clear procedures in place which take into account system limitations if used during a watch; without clear procedures, mariners may assume that a non-ecdis ECS can be used for navigation.

Masters should:

- be aware of the systems on board and ensure that watchkeepers are familiar with restrictions and procedures for ecdis use
- ensure that training and familiarisation is carried out in accordance with STCW requirements and company procedures
- advise companies if the level of training or familiarisation is inadequate; electronic charts give the navigating officer the capacity to manage the entire voyage from route planning through to route monitoring and the ability to quickly plan alternative routes.

Two of the biggest differences between paper charts and ecdis are the size of the display and the symbology. Those used to a paper chart spread out on the chart table, where a glance is often enough to get an overview of the situation, may find the ecdis's smaller display off-putting. Good use has to be made of the zoom and scroll facilities to get the same overview. However, as a member of the institute's Sea-Going Correspondence Group (SGCG) puts it: "Watch officers can step onto the bridge and real-time data is there on the screen, ready to be interpreted. This is very convenient."

Symbols such those for wrecks and isolated dangers can change according to safety contour settings. For example, the MAIB report about Pride of Canterbury's grounding on a charted wreck said: "Lack of proper training in use of ecdis possibly led to the wreck being undetected. It is possible that the wreck was displayed but the ecdis symbol was misunderstood."

Ecdis is a system that is meant to help the watchkeeper to make informed decisions. It is not infallible nor a replacement for sound judgement. The watchkeeper should be aware of information overload when using ecdis, and set the display level accordingly.

Updating

When I was a navigator, chart corrections occupied a large part of my off-duty time, even after tracings were introduced. Chart corrections (or updating) with ecdis is carried out automatically by use of CD-ROM. However, there are critical steps needed to achieve an up-to-date ecdis database, and considerable time must be spent to ensure accuracy. Loading and updating charts vary significantly in complexity between manufacturers.

Error messages when the update is unsuccessful, or when a chart is in use and hasn't been correctly updated, can go unnoticed or be difficult to understand. The mariner can interrogate an ecdis chart on the details of the originator, edition number and status of updating, but again on some systems there is no obvious indication showing the operator how to do this. The information is there, it is just not in an obvious position.

Passage planning

Mariners developed a sixth sense for spotting potential hazards when using paper charts, and were actively engaged in situation awareness by the need to plot positions at regular intervals. Electronic systems are so sophisticated that potential problems may not be so obvious, particularly if either too many or too few layers are on display. The navigator must become familiar with the type-specific ecdis on board.

Ecdis provides a potentially invaluable asset in passage planning and monitoring, but mariners must be aware of the need to make use of the inbuilt check functions provided by ecdis when validating and approving the voyage. The MAIB report on the grounding of CFL Performer highlights this. The passage plan had been modified, but: "it is clear that this route was not adequately checked for navigational hazards either when planned or when being monitored".

This check for navigational hazards is not aseasy as it seems. Recently one of our staff was at a training centre where he was shown how one ecdis defaulted to checking the route at a scale not greater than 1:25,000, even when the scale in use was 1:10,000.

Passage monitoring

When using paper charts, the navigator is engaged in situational awareness by the need to plot positions at regular intervals. However, this requires the watchkeeper to spend considerable time at the chart table, plotting the position, assessing the direction of travel, estimating the course to steer and time at next waypoint, which also detracts from the watchkeeper actually looking out of the window.

When navigating using ecdis, bridge procedures must be adapted appropriately. We have published a guide to best practice: From paper charts to ecdis, written by our technical manager, Captain Harry Gale FNI, with extensive input from the SGCG member. It should be on every bridge and required reading for all fleet managers as the required bridge procedures really are substantially different. The task of situational awareness is entirely down to the discipline of the bridge watch team and the watchkeeper should check the vessel's position by alternative means. A lack of discipline can lead to being caught up in other tasks and disengagement due to fatigue or overconfidence in the technology. Ecdis is a system that is meant to help the watchkeeper make informed decisions. It is not infallible nor a replacement for sound judgement.

The watchkeeper should be aware of 'information overload' when using ecdis and set the display level at an appropriate scale. The watchkeeper should also monitor the position source and have the navigational and area alarms set as appropriate. Manual plotting of lines of position is a requirement under the performance standards, and this can provide a quick check on the vessel's position as well as keeping the watchkeeper engaged in the process.

Conclusion

The experiences of those who have been using electronic charts for some time show its use will reduce the navigational workload when compared with using the paper chart. This will enable

mariners to execute all voyage planning, route monitoring and positioning that is now performed on paper charts. The reduction in workload associated with navigating on paper charts, however, must be taken into account when implementing operational procedures. Failure to instigate the discipline of being alert and engaged in the process of ecdis navigation has proved to lead to distractions, complacency and, ultimately, accidents.

An officer newly appointed to an ecdis navigated ship should have completed a generic course and also a type-specific course. However, just as a check to help familiarise himself with the ecdis on board, the officer would be advised to use the familiarisation checklist, published by The Nautical Institute, in Dr Andy Norris's book ECDIS and Positioning.

The Nautical Institute has set up an ecdis forum so that mariners can share their experiences and problems. Please take part in it via our website: www.nautinst.org.

Inséré le 05/08/13 LOGBOEK NOUVELLES Enlevé le 05/09/13

Cruise ship lines, Alaska officials question new air pollution limits

The gleaming white **SAPPHIRE PRINCESS** docked in this deep-water port this month, unloading its

passengers and taking on another 2,600 guests headed first to Glacier Bay and, eventually, Vancouver, B.C. Every day of that trip the cruise ship — whose Web site invites passengers to see Alaska's "pristine landscapes" — will emit the same amount of sulfur dioxide as 13.1 million cars, according to the Environmental Protection Agency, and as much soot as 1.06 million cars.

But starting Aug. 1, the **SAPPHIRE PRINCESS** and every other large ship traveling within 200 miles of the coasts of the United States and Canada will have to burn cleaner fuel. These new restrictions — which will phase out the world's dirtiest transportation fuel in U.S. waters — represent one of the Obama administration's most ambitious, and least-noticed, anti-pollution programs. But they have prompted a major counteroffensive from the cruise industry as well as several lawmakers, who argue that they will raise costs for vacationers and Alaskans who depend on ocean-going vessels for basic foodstuffs. "

This is the sleeping giant no one is paying attention to," said S. William Becker, executive director of the National Association of Clean Air Agencies, which lobbied for the new rule and represents officials from state and local air agencies across the country. For years, large ships have burned a heavy fuel with 2,000 times or more the amount of sulfur as the diesel fuel used by trucks, locomotives, construction equipment and small marine vessels.

The Bush administration proposed limiting sulfur dioxide emissions for ships in 2007; the International Maritime Organization three years later adopted the joint U.S-Canada proposal to

create an “Emissions Control Area” within 200 miles of shore. Countries bordering the Baltic and North Sea enacted similar limits in the late 1990s. The new rule requires large ships to cut the sulfur content of their fuel, which now averages 2.7 percent, down to 1 percent next month; in 2015 it must drop to 0.1 percent.

The EPA estimates that the new rules will avoid between 12,000 and 31,000 premature deaths each year by 2030, with the benefits outweighing the costs 95 to 1. Put another way, when the stricter limit goes into effect in 2015 it will be akin to taking 12.7 million cars off the road per day and eliminating their sulfur dioxide emissions, or the soot from 900,000 cars. Air pollutants from burning ship fuel off the Pacific Coast contribute to lung disease and affect air quality as far away as North Dakota, according to agency officials. “These important standards will lower emissions from ships and help safeguard our port communities and cities hundreds of miles inland,” said Gina McCarthy, who heads the EPA’s air and radiation office. The container and vehicle shipping industry, which spends less time within the 200-mile zone than the cruise industry, has indicated that it can meet the new standards. But a couple of firms serving Alaska, including Totem Ocean Trailer Express, predict their fuel costs could eventually rise 25 percent as a result. It is difficult to get precise estimates on what the cleaner fuel will cost, in part because its availability remains uncertain. The EPA estimates that when fully implemented the program will add $18 to the cost of shipping a 20-foot container and about $7 per day to the cost of a passenger’s cruise ticket. Cruise industry analysts, however, say it could add as much as $19.46 a day per passenger. The total annual cost of implementing the rule in 2020 will be $3.2 billion, according to the EPA, weighed against between $47 billion and $110 billion in benefits.

Alaska officials are particularly worried about the program’s impact, because cruise liners destined for their state will be subject to the new limits for the entire journey, and because they receive almost all their goods by ship. Alaska’s attorney general filed a lawsuit July 13 challenging the federal government’s right to impose such limits, and Sen. Lisa Murkowski (R-Alaska) has pressed EPA officials to work out a compromise with the industry. “The impact of these regulations, moving forward, potentially can be devastating to the public, especially those in rural Alaska,” Murkowski said, noting that the cost of shipping already inflates prices for everything from milk to laundry detergent. “You cannot afford a 25 percent increase in a box of Tide, the cost of lumber. We cannot afford a 25 percent increase in the price of goods in our state.” She said the agency should sample Alaska’s air quality before imposing the emissions restrictions.

While shippers will maintain their routes even if fuel prices rise, every major cruise line is rethinking whether it will need to scale back on some itineraries in order to control costs. Even the companies that have touted their environmental credentials the most — **Disney Cruise Line** and **Royal Caribbean**, for example — are lobbying the EPA to reconsider how it enforces the new rules. Bud Darr, vice president for technical and regulatory affairs at the Cruise Lines International Association, said his members are worried whether there’s “sufficient quantity of fuel, particularly as it pertains in the Pacific Northwest” to meet the standards. While the EPA has issued guidelines on how firms can document their inability to purchase fuel, Darr said the potential shortage would spike costs.

Cruise companies have proposed that they be allowed to burn higher-sulfur fuel at some points in the 200-mile control zone while curbing emissions elsewhere. Disney Cruise Line spokeswoman Rena Langley said her company is “committed to minimizing our impact on the environment. . . Along with the rest of the industry, we continue to explore alternative approaches to [Emission Control Area] compliance that would achieve the same result or better.”

But the EPA, which is also fighting Alaska's lawsuit, has rejected the cruise industry's proposal, saying it would cut the program's health benefits in half. "There are opportunities for us to do some compliance measures that have flexibility," McCarthy said. "What we're not looking forward to is losing the benefits of this rule."

Rosemary Ahtuangaruak, tribal liaison for the Alaska Wilderness League, said Arctic residents have already experienced the negative affects of cruise and other marine traffic. "We're very concerned about the emissions they're putting in the air," Ahtuangaruak said. "We're already seeing an increase of respiratory illness." Cruise industry officials say they may have little choice but to explore routes outside the Emissions Control Area at some points in their itineraries to save money. Princess Cruise Lines spokeswoman Juliet Benson, who noted that her company pioneered the practice of plugging into onshore electrical power while in port, wrote in an e-mail that Princess anticipates "some future changes" to its routes. "The cost of fuel plays a key role in our itinerary planning, and we balance offering the most desirable routes for our passengers with ensuring maximization of fuel efficiency," she said.

While the new limits will pose some challenges, Becker said that state and local officials — who lack jurisdiction over ships — need them in order to meet stricter federal air quality requirements over the next decade. "We will not be able to meet the federal health-based standards without the benefits of this program," he said. "They're that significant." **Source : washingtonpost**

Inséré le 09/08/13 Logboek NEWS Enlevé le 09/09/13

Salvage experts to meet with insurers over sunken sail ship

Salvage experts will meet the surveyors for the insurer of Dutch sail training ship, **Astrid** to put together a wreck removal plan to salvage the ship which sank off the Co Cork coast on Wednesday. Salvage expert, Colm Harringtonthe mouth of Kinsale Harbour after losing engine power around midday on Wednesday.

Mr Harrington said it should be possible to salvage the 95-year oldship as she remains intact apart from some rips along her hull where rivetted plates popped open when she struck the rocky shoreline after hitting the rocks.

"Her bow is in about ten metres of water and her stern is in about a metre of water and she's pretty much intact apart from those rivets that have popped on some of her

plates so it will be possible to salvage her," he said. "The job will involve getting slings under her and lifting her with specialist equipment because with she's a heavy ship - 254 tonnes and with all the water inside her, you'd need the slings underneath to provide the support - we have to do now is agree wreck removal plan with the insurance surveyors".

Mr Harrington said he had spoken with the owner and skipper Pieter de Kam and showed him a video of the damage and they agreed that it was unlikely that the Astrid could be repaired to continue as a sail training vessel.

"We showed the video footage we had to the owner and he was in agreement that he wouldn't be able to repair it - it would have to be repaired to a very high standard to continue bringing people out on sail training and I don't think it would be possible to do that.

"It's a pity because she's a magnificent ship - she was finished to a very high standard and looked immaculate down to the paintwork - there was a lot of money spent on her about ten years ago after a fire so it's just very sad to see her now lying on the seabed," he said.

Mr Harrington explained that if a wreck removal plan is agreed with the ship's insurers, it will then have to submitted to the Irish Coastguard for approval and while it may prove a complex operation, the aim is to try and begin the removal as soon as possible. Lieut Cdr Terry Ward of the Naval Service patrol ship **LE Róisín**, which maintained a 200m exclusion zone around the hull for safety purposes, said the hull was fast aground, with little movement in a half to one metre swell. The 42m steel square-rigger was "holding fast" on rocks at Ballymacus point off the mouth of Oysterhaven harbour, where weather conditions had eased considerably, Lt Commander Ward said. **Source : Irish News**

The Astrid was built in 1918 as a freight logger in a Dutch shipyard. The ship was sold of due to the decease of the Swedish Captain Albert Edmund Frohm and the diminished demand for coasters of this seize. Since 1970 it sailed under the Lebanese flag and the wildest rumours were spread involving drug smuggling. Below the English coast a fierce fire aboard the ship ended the alleged practices. The pensioned English Marine Officers Graham Neilson and John Amos (from Class Yachts Endeavour) saved the iron body from the breakers. The Astrid was completely renovated and equipped with impressive brig rigging. Nowadays it has returned sailing under the Dutch flag. -

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Inséré le 11/08/13 Historiek Historique Enlevé le 11/09/13

The roman port of London

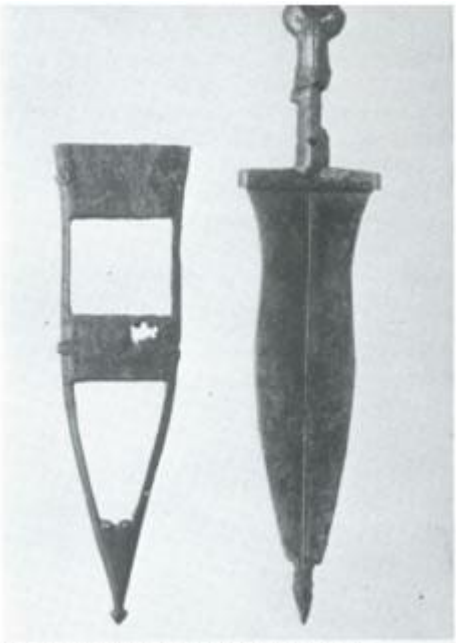
To see the origins of the Port of London we have to go back to Roman times - to be precise, to the year AD 43, when the Emperor Claudius invaded this country. Nearly a century earlier Julius Caesar had made two expeditions, but they had been little more than demonstrations of Roman might, and it was left to Claudius to conquer Britain and turn it into a Roman province. It was to his initiative that London owes its being.

The remains of a Roman vessel discovered at Blackfriars

It used to be thought that there was a trading station on the site of London in pre-Roman times, for some merchants at any rate had ventured to Britain before it became part of the Empire. But its existence, as the Scots would say, is not proven, and most people think today that it was the Romans who first appreciated the advantages of the site and made the growth of a settlement possible by building a bridge across the Thames, a little downstream from the present London Bridge, very near the tidal limits of the river at that period. Once this had been done, the bridge became a focal point from which a network of Roman roads radiated and the site became a natural meeting place of land and water routes.

At first London's importance was no doubt largely military, but its commercial development was quick to follow. As always, trade

followed the flag. By the time of the revolt of Boudicca or Boadicea in AD 60 London, we are told, was a great centre of commerce, crowded with traders and full of goods. Though Colchester was the capital of Britain in the early days of Roman rule, London seems effectively to have achieved capital status by the early years of the 2nd century, in fact if not in name. It was certainly the seat of the financial administration soon after AD 61, and for a time an imperial mint.



Roman sword and sheath found in London excavations.

The Blackfriars' ship in more detail. On the left is a millstone carried on board the vessel.

The motives of Claudius in undertaking the conquest of Britain were no doubt primarily political, but considerations of trade must have played quite an important part. Claudius was in fact an emperor keenly interested in mercantile development and had done much to promote it in the Empire at large by building canals and developing harbours, one at Ostia, to serve as a port for Rome, and one also at Boulogne.

In addition he encouraged shipping to operate for the first time on an all-the-year round basis. It had been usual in the ancient world for sailors to stop work for the winter months and lay up their ships until the weather improved. Sailing was in fact only regarded as entirely safe between 26 May and 14 September, white the sea was looked upon as completely closed to traffic from 10 November to 10 March. Now Claudius gave an impetus to winter navigation by insuring both ships and cargoes against storm losses, and he increased the mercantile marine by offering special privileges to aliens who would build a ship. He also increased the Roman navy, in part with the object of protecting commerce, and one of the newly created divisions patrolled the Channel.

One of Britain's important exports in the Roman period was corn. There was in Rome a system of social security which took the form of free distribution of grain, and the task of providing sufficient for ever increasing populations was a constant preoccupation of the emperors, who were always on the look-out for fresh sources of supply. Sicily, Egypt and North Africa were the principal granaries of Rome, and Britain might provide a welcome additional supplier. Wheat carriers were encouraged to form colleges or guilds and were regarded as performing an important public service. It is doubtful whether British corn was ever sent as far as Rome, but certainly it was exported to the Rhine valley in the 4th century when famine threatened that area. Part of the British tribute was paid in grain.

Typical Roman pottery of the type frequently found in London.

Another prize which Britain could offer her conquerors was a supply of metal ores, above all lead, from which silver was extracted, but also iron and Cornish tin and gold from

The hypocaust of the Roman baths found in the Coal Exchange site, Lower Thames Street.

Wales. Within a few years of the occupation of the island Roman mining operations were in full swing and metals being exported. Lead was worked in the Mendips as early as AD 49, and at a slightly later date in Flint, Shropshire, Derbyshire and Yorkshire as well.

Another valuable commodity which could be exported was a supply of robust slaves, for the Roman empire was organised on a basis of slavery, and the great public works on which Claudius was engaged, digging canals, constructing aqueducts, building harbour works, engineering highways, draining marshes, required enormous gangs of slave labour.

Britain could also offer exports of cattle and sheep, hides, fleeces and furs, and what must have seemed inexhaustible supplies of timber in those days when much of the land was covered with dense forests. British wool, perhaps made up into cloaks, Pound its way even to the Eastern European provinces of the Roman Empire, for there was a good export trade in British cloth.

Statues of Apollo and Mercury found in the Thames in 1837.

In addition to these staples there was quite a brisk demand for luxury items like British pearls, obtained from the freshwater mussel at the three principal fishing centres of Conwy, Ravenglass and Perth, British oysters from the region round Richborough, highly esteemed by continental gourmets, and British geese which were reckoned a great delicacy. British hunting dogs, animals of the mastiff breed, were considered to be so good as to be worth the trouble of conveying to Rome, being noted for their ferocity and speed. liard fruits like apples and cherries were also exported and baskets woven from osiers, which were often given as little presents in Rome.

On the import side, the presence of a garrison of 40,000, together with a host of Roman civilian officials, created an immediate demand for goods of all kinds on an unprecedented scale, though local resources were used whenever possible and must have been developed greatly in response to the stimulus of this increased demand. Luxury goods also figured largely among London's imports, things like wine and oil, brought from the continent in huge jars, glass and fine table-ware, not only for the use of Roman officials but for the wealthier Britons, many of whom quickly adopted their conquerors' life-style. The pottery came mostly from Gaul, and some also from the Rhine Valley, most of London's traffic crossing from the mouth of the Thames to the mouth of the Rhine.

These then were some of the cargoes handled by London dockers, some of whose work tools have survived and can be seen in the Guildhall Museum. They include a docker's hook for handling sacks and bales, a baling-needle, a crane-hook and an iron case-opener. Also in the Guildhall Museum are a Roman iron boat-hook and a brass steelyard used by traders for weighing goods.

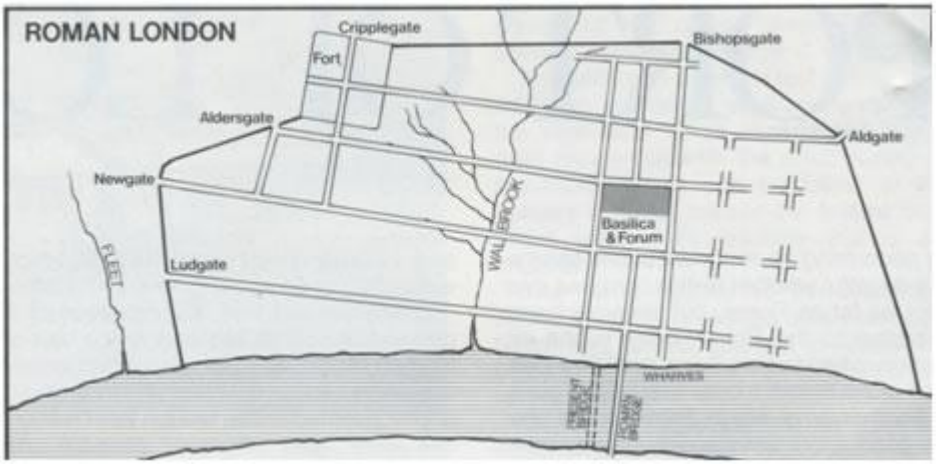
The Roman wall at Cooper's Row.

Leather 'bikini' found in recent London excavations.

These were all round in or near the stream-bed of the Walbrook, along whose banks a great deal of intense commercial activity went on. It was

formerly thought that the Walbrook was part of the docks of the Roman port, but this idea has now been discarded. Tite concluded from his excavations that the stream was 250 feet wide. What he discovered however was the flood-plain of the Walbrook, not its bed; the stream-bed, as we now know, was a mere 12-14 feet wide, much too narrow ever to have served as a dock, except possibly near its mouth. But along its banks manufactured goods of many kinds seem to have been handled in large quantities in the 1 st and early 2nd centuries. This period of intense activity on the Walbrook came to an end soon alter 155 AD, when the revetted banks collapsed owing to a rise in the water level and consequent flooding.

The wharves for shipping may have been downstream from the bridge gate, on the Thames, just outside the town wall (if indeed there existed a continuous wall on the river side, which now tends to be doubted). Timber structures have been uncovered in Miles Lane and King William Street which some believe to have been part of wharves, though before we can be sure of this it needs to be demonstrated that they could have been used for this purpose at a time when the river level was very much lower, the early Roman riverbed being 10 to 12 feet below that of today. Some consider that the structures were too far inland for wharves and were more likely to be terraces on the hillside where the river bank rose steeply. The quays were perhaps below the line of Thames Street, where massive walls have been uncovered from time to time. Once believed to be part of the town wall, these may well have been stone quays.



Also in King William Street walls of solid brick have been found, which may have been part of a warehouse or shed. Another warehouse or granary was uncovered in Fenchurch Street, probably a grain store, for there seems to have been a damp-proof floor.

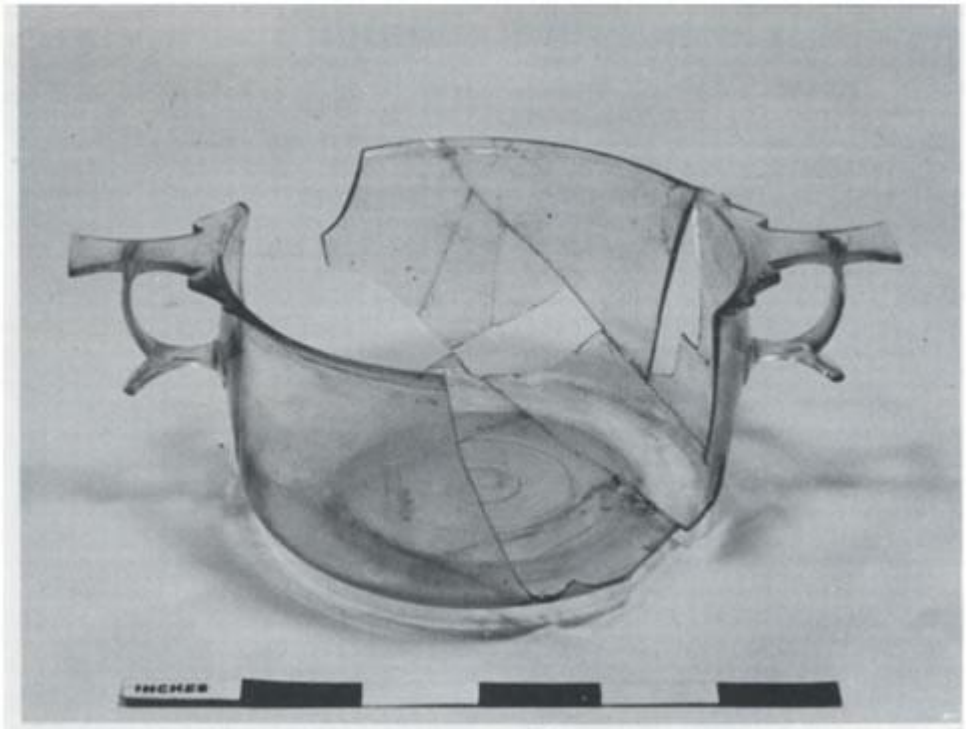
The merchant ships that tied up at London's wharves would appear to us today little more than fishing smacks, for though the Romans could build quite large vessels — an Alexandrian corn ship might be 180 feet in length with a tonnage of 1,200 — most were only a third of that size. The remains of three ships of the Roman period have been found in London, the first of them in 1910 when the foundations for County Hall, Lambeth, were being excavated. A portion of this is preserved in the London Museum. It is of oak, carvel-built (ie the planks laid edge to edge) and was probably part of a ship 60 to 70 feet long and 15 to 16 feet wide. There has been some discussion as to whether it was a warship or a trading vessel, but it seems fairly certain now that it was a small cargo-boat. Merchantmen were propelled by sails instead of oars and were wider in proportion to their length than warships, being frequently referred to as 'round ships'.

The other two boats, found in 1958 and 1962, were probably river-barges, with flat bottoms suited to carrying heavy loads in shallow waters. One indeed still had on board a load of Kentish ragstone, quarried in the Maidstone district and much used in the buildings of Roman London. It seems to have been engaged in carrying stone clown the Medway and up the Thames. Its cargo had shifted and it had been wrecked at the mouth of the Fleet. The fact that two of these boats were found upstream from the bridge shows that it was not necessarily a barrier to shipping. It is thought that it must have had a drawbridge section to allow the passage of vessels with masts.

Statuary from Temple of Mithras.

Head of Sarapis found at the Temple of Mithras site.

Few of the merchants who conducted London's trade were Italian in origin. Some were Greeks from the Eastern provinces of the Roman Empire: we hear of a Greek merchant in Lincoln and also of a Syrian from Palmyra, who probably traded in the silks, spices and dried fruits for which Damascus was famous, for prune-kernels have been found on several sites. Most of the British trade, however, was in the hands of men from the Rhine valley and the northern parts of Gaul. Those who specialised in this way were styled 'British merchants', in the sense in which later centuries spoke of 'East Indian' or 'West African' merchants. One such set up an altar at Bordeaux in AD 237 as a thank offering on the safe completion of a journey. Another a pottery-merchant, erected a tablet at Walcheren on which he thanked his goddess for having preserved his life and his wares on a voyage to Britain. Many were the hazards in those days, despite the protection of the Roman navy and the establishment of lighthouses at Boulogne and Dover. Many however prospered, for the Roman Empire with its stable government, internal peace and sound currency, formel a great Common Market area.



Reconstructed glass bowl found in Wallbrook.

There were of course other busy ports in Roman Britain, including Dover, Richborough and Lympne, but it has been estimated that by the 4th century almost all the trade was passing through London. The Romans were very struck by the tidal rivers of Britain. "I would only add one remark", wrote the historian Tacitus, "that nowhere else does the sea make its power more felt: the tide causes long stretches of the rivers alternately to ebb and flow, nor does it simply rise and sink upon the shore, but it runs far inland, and winds about

and makes its way into the very heart of the hills and mountain chains, as if the sea were the lord of all."

Inséré le 13/08/13 BOEKEN LIVRES Enlevé le 13/09/13

"First aid at sea".

Bij **Adlard Coles Nautical** verscheen "**First aid at sea**". Het boekje werd samengesteld door Douglas Justins en Colin Berry. Het marine milieu kan aanleiding geven tot specifieke ziektes of ongevallen. Het komt er dus voor de bemanning van elk schip op aan te weten hoe in dergelijke situaties te reageren. De uitgegeven gids biedt een aanzet om deze onverwacht optredende situaties het hoofd te bieden. Het boekje werd op hard papier gedrukt en omvat tal van tekeningen en schetsen om de toch al duidelijke tekst te ondersteunen. Dit boekje mag niet ontbreken in of in de nabijheid van de verbandkist van elk vaartuig, Het is geen medische encyclopedie maar een leidraad om de meest essentiële stappen bij ziekte of ongeval kordaat te zetten. Het werd geschreven door twee anesthesisten, beide ervaren zeilers. Een aanrader !

"**First aid at sea**" (ISBN 978-1-4081-5703-9), uitgegeven op handig formaat kost £10.99 en telt 29 pagina's. Bestellen kan via de boekhandel, of rechtstreeks bij de uitgeverij **Adlard Coles Nautical,** 38 Soho Square, London W1D 3HB,UK. www.adlardcoles.com

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Inséré le 13/08/13 Nouvelles News Enlevé le 13/09/13

Spanish Ship-Purchasing Tax Scheme Outlawed

After an in-depth investigation, the European Commission has concluded that a Spanish scheme for the purchase of ships involving leasing and financing through tax relief is partly incompatible with European Union (EU) rules on state aid.

The scheme, first established in 2002, conferred a selective advantage on economic interest groupings (EIGs) and their investors over their competitors. Under this scheme, a maritime transport company can purchase a ship through a complex contractual and financial structure (rather than directly from a shipyard) involving an economic interest grouping, an investment vehicle held by investors wishing to reduce their basic taxable amount.

In practice, the economic interest grouping acts on behalf of the maritime transport company purchasing the ship, acquires it on a financial leasing basis and pays it off in the three to five years after work starts on its construction. The economic interest grouping then benefits from taxation exclusively on the basis of tonnage, which is a special scheme applicable under the European rules to maritime transport companies, and hands the ship over to the transport company without paying capital gains tax. The maritime transport company acquires the ship with a reduction ranging from 20% to 30% on the purchase price charged by the shipyard. However, as this reduction is awarded by the economic interest grouping, not by the state, the Commission has taken the view that it does not constitute state aid to the maritime transport company.

The Commission was not notified of the scheme for the purpose of prior authorization as required. Under European rules, the beneficiaries must now repay the aid to the Spanish state. In accordance with the principle of legal certainty, the Commission will not require the repayment of aid granted between the start of the scheme in 2002 and April 2007, when the Commission publicly declared a similar French scheme incompatible.

The Commission acknowledged that its 2001 Brittany Ferries decision (case N618/1998, and in particular recital 193) may have created legal uncertainty as to whether the Spanish scheme for leasing and financing through tax relief constituted aid. This uncertainty was cleared up with the publication, in April 2007, of the final decision in the investigation into the French scheme for fiscal economic interest groupings (case SA.16608) referred to in the 2001 decision. The Commission found that that scheme was incompatible with the single market. As regards the Spanish scheme, the Commission therefore found that the incompatible aid awarded before April 2007 did not have to be recovered.

Commission Vice-President Joaquin Almunia, responsible for competition, said: "Economic interest groupings and their investors have benefited unlawfully from tax advantages which they must now repay to the Spanish state. As regards the future, there is a non-selective tax scheme which was approved by the Commission in November 2012 and which can be used, among other things, to finance the shipbuilding industry. This scheme is fully compatible with the European rules and therefore provides investors with all the legal certainty they require. I hope that all parties will be able to use it as soon as possible." In the Commission's view, the reduction passed on to the maritime transport companies contributed to an extent to achieving the objectives of common interest set out in the Guidelines on state aid for shipping. The Spanish authorities must now determine, in accordance with the Commission decision, the amounts of incompatible aid to be recovered from the economic interest groupings and their investors. The Commission's decision does not allow the beneficiaries to pass on the repayment obligations to third parties (such as shipyards), even under existing contracts. The Commission reiterated that its decision does not call into question the Spanish tonnage tax scheme for maritime companies, as approved in 2002. Spanish shipyards will continue to benefit from aid granted under schemes approved by the Commission, such as aid for innovation, regional shipbuilding aid and export credits, the Commission clarified. **Source: Tax News**

Inséré le 15/08/13 OPEN FORUM Enlevé le 15/09/13

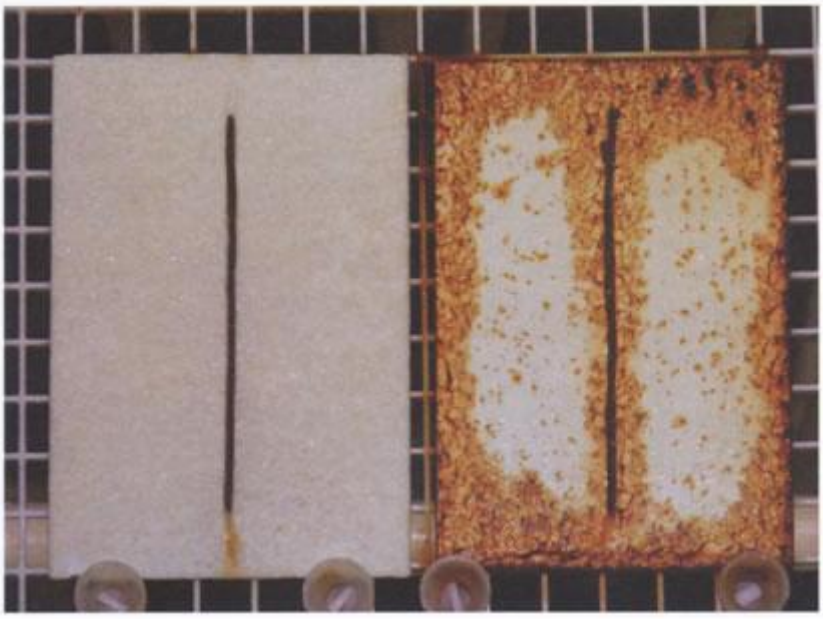
The best thing next to steel

A CHEMICALLY BONDED PHOSPHATE CERAMIC CAN STOP HULL AND TANK CORROSION IN ITS TRACKS

The corrosion of steel, aluminum, and other structural metals erodes the safety and financial stability of a number of industries, perhaps none more so than the maritime industries.

But while traditional corrosion protection has relied mostly on short-lived physically-bonded coverings of substrate surfaces, a new category of chemically bonded phosphate ceramics (CBPCs) can create a longer lasting "passivation" layer that stops corrosion. This is further protected by a tough ceramic outer layer.

For generations, polymer paints have acted as a physical barrier to keep corrosion promoters such as saltwater and oxygen away from steel and aluminum substrates. This works until the paint is scratched, chipped, or breached and corrosion promoters enter the gap between the substrate and polymer coating. Then the coating can act like a greenhouse — trapping water, oxygen and other corrosion promoters — allowing corrosion to spread.



Placing sacrificial, reactive elements next to steel, such as zinc and galvanized coatings, is another strategy. But this only works until the sacrificial elements are used up and recoating must be done, usually after a few years. And while cathodic protection, whereby a negative voltage is imposed on steel, can limit corrosion, this can fail if it's not properly insulated and voltage goes to ground.

For assets that demand long-term corrosion protection, stainless steel alloys work. But with stainless steel costing up to six times more than mild steel, this option is often cost prohibitive.

Ideally, shipowners/managers would want the long-term corrosion-resistance of a stainless steel part with the lower cost of coating application. A new category of CBPCs such as EonCoat, for instance, is now making this possible. According to the developed, these CBPCs "essentially alloy the surface".

Dr Arun Wagh, a former materials engineer at Argonne National Lab, and lead developer of the technologies underlying the EonCoat coating system's ceramics, explains it like this: `When a dual-component spray gun mixes an acid phosphate with base minerals and metal oxides in a water slurry, a chemical reaction occurs on the surface of the steel substrate.

`A hand-held thermometer indicates a 10-12°F temperature rise, as iron becomes a corrosion-resistant passivation layer of iron oxy hydroxide. Because the passivation layer is electrochemically stable, like gold and platinum, it does not react with corrosion promoters such as water and oxygen.'

Scanning electron microscopy indicates this passivation layer is about 20mm thick. X-ray diffraction indicates this passivation layer is about 60% iron with components of phosphate, magnesium, silicon, hydrogen, and oxygen.

`History suggests that EonCoat's passivation layer may resist corrosion indefinitely, as demonstrated by the Iron Pillar of Delhi,' says Wagh.

The Iron Pillar, a 7m high, 6t artifact that has resisted corrosion for 1600 years with its original inscriptions still legible, has a virtually identical passivation layer to that of EonCoat.

In contrast to typical polymers used in coatings, which sit on top of the substrate, EonCoat bonds through a chemical reaction with the substrate, so slight surface oxidation actually improves the

reaction. This, says the company, makes it virtually impossible for corrosion promoters like oxygen and humidity to get behind the coating the way they can with ordinary paints.

The corrosion-resistant passivation layer is further protected by a dense ceramic outer shell. This is impermeable to water, and resists impact, abrasion, chemicals, and fire. It forms simultaneously with the passivation layer and chemically bonds with it, after acid and base materials mix in the spray gun nozzle then react with the substrate surface. The dual-layer ceramic coating can be used both as a primer and a topcoat, and can be applied in a single pass that's dry to the touch in a minute, hard dry in 15 minutes, and can be returned to service in an hour.

Though CBPCs such as EonCoat have proven themselves in the laboratory and in examples such as the Iron Pillar, the effectiveness of the new material had to be compared to that of traditional anti-corrosion coatings.

Duplicating a NASA corrosion test, EonCoat was put to the test against 19 leading anti-corrosion coatings in a live corrosion test. Coated samples were scribed, then exposed to 12h of sea spray, followed by 12h of sunlight (or the UV light equivalent) . After 45 days, every other highperformance coating tested failed. Except for the rust on its scribe line, the EonCoat sample looked the same as day one, claims the US-based manufacturer.

In the latest test, which has passed 120 days and includes brand names matched to numbers, 20 panels coated with a popular primer, topcoat, or EonCoat are sprayed daily with corrosive seawater. The product has now gone more than 10 000h with no corrosion in a salt spray ASTM B117 test, but the company believes that engineers, facility managers, and industrial contractors will see value in comparing its effectiveness with leading brands.

According to EonCoat CEO Tony Collins, CBPCs are a new approach to corrosion protection that should be looked into as aging plants, equipment, and infrastructure need to be safely maintained as long as possible.

He believes that the corrosion-preventing coating has immense potential in the merchant shipping industry and the company is now testing the coating on a 17 000ft2-capacity dry bulk carrying barge, on all internal and external surfaces, from the keel to the funnel. It's the next best thing that you can put next to steel, he says.

New Jotamastic for greater corrosion resistance

Jotun has improved its established Jotamastic range of anti-corrosion coatings wtih Jotamastic 90, a step change says the Norwegian coatings company in high-tech surface tolerant coating solutions.

Launched earlier this month in Rio de Janeiro, Brazil, the new generation Jotamastic 90 is being cited as 'one of the most technologically advanced surface tolerant repair and maintenance primers on the market.

The main features of this highly durable coating are its exceptional corrosion resistance, shorter overcoating intervals, wider top coat compatibility and increased colour flexibility using Jotun's Multi Colour Industry (MCI) tinting system.

'The new Jotamastic 90 utilises modern technology and materials providing excellent wetting properties, ensuring even better surface penetration and adhesion to the substrate and resulting in a durable solution,' says passe Isaksen, product manager, anti-corrosives.

Jotamastic 90 has good corrosion resistance and is suitable for the most severe environments. It has reduced drying time by up to 40% compared to existing products, thus reducing downtime and over-coating intervals. Compatible with most topcoats, including polysiloxanes and two-component acrylics, Jotamastic 90 is claimed to have improved wetting and penetrating abilities to provide a better inter-coat adhesion.

According to Isaksen the new range offers great potential for savings through lower surface preparation costs. 'It is one of the market's most durable solutions compared with other surface tolerant epoxies,' he says.

He adds: 'Investing in the right coating system today will yield future returns. The achievements will be lower maintenance costs, longer lifetime and better protection of your property'

Jotun's Jotamastic range was first launched in 1987 and has since protected more than 1.2 billion square metres of steel.

Inséré le 17/08/13 OPEN FORUM Enlevé le 17/09/13

Navigation e-Volution

Electronic navigation systems, and ECDIS in particular, are set to grow in importance and form the standard for vessel navigation over the next few years. How will these changes affect safety and bridge operations at sea? Digital Ship spoke to Petter Brandt, Stolt Tankers, about the e-Volution in navigation

With the mandatory carriage requirement for ECDIS set to be phased in from July of 2012, the whole landscape of vessel navigation is set to change over the next few years.

Competence in the use of this electronic equipment has become a prerequisite for modern seafarers with the Manila Amendments to the STCW, and the next few years will see an enormous demand for navigator training to add familiarisation with technology to the traditional skills already learned as a cadet.

Opinion is divided on how the introduction of ECDIS will affect bridge operations – will the systems add to situational awareness and improve safety, or will crews struggle, in the early stages at least, to adapt to a new way or working?

Stolt Tankers operates approximately 80 of its own ships, and a number of others on time charter. The company has been using ECDIS for a number of years on its vessels, as early adopters of the technology, and as such is in a good position to welcome the carriage requirement for the equipment.

However, the company is not treating this change in the regulations as a revolution in navigating – rather, it is seen as an evolution, as Petter Brandt, navigation superintendent, Stolt Tankers, explains.

“The ships we built at the end of the 1990s, already then they were prepared to go fully paperless. They had dual ECDIS onboard,” he told us.

“But we didn’t do it in those days because, in a way, the world wasn’t ready for it. We had all the hardware, we had the software, we had the people, but in some ways we still weren’t quite ready. Today we have a growing number of ships operating in worldwide trade using very few paper charts.”

“We all know what ECDIS is, there is a lot of buzz and there are discussions going on about ECDIS, and we have the upcoming rules and regulations forcing us to use it. Is it really something new? Why are people so concerned about the introduction of ECDIS?”

The art of navigation

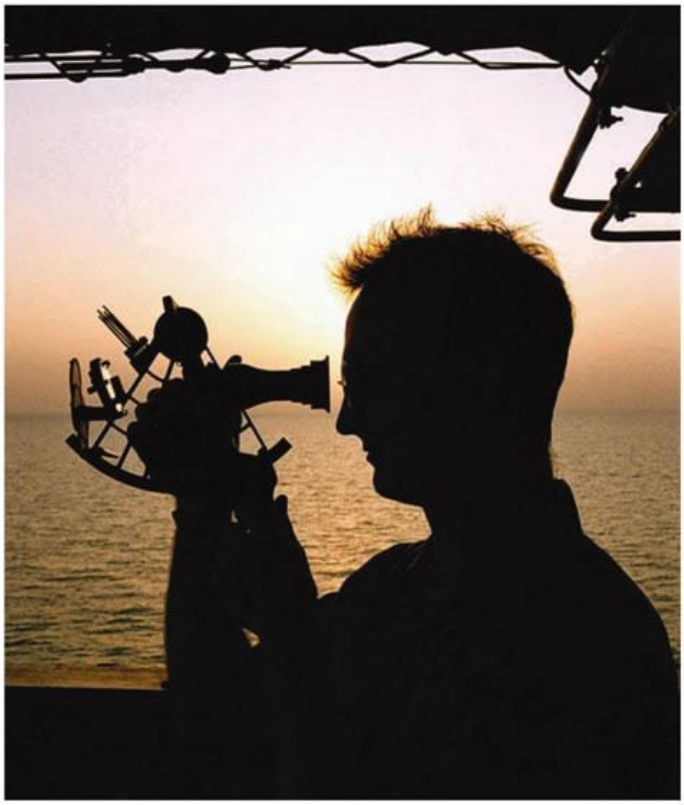
The art of navigating ships on long voyages is not new – humans have been finding their way around the seas for millennia, applying many principles that are still relevant today.

Technology has changed, and the information sources available on ship have expanded, as seafarers strive to improve the accuracy of their positioning and the safety of their passage.

“Way back we had celestial navigation, that’s really an old thing going back 2,000, 3,000, 4,000 years. People would lie on the hills drinking wine and would see giraffes and other types of animals up in the stars, and eventually they managed to find their way using these stars,” noted Mr Brandt.

“The compass is another one, we don’t really know how old it is but it revolutionised the art of navigation. Charts have existed for millennia, but up until quite recently they were a military secret and the property of the one who made the chart. Sharing a chart with somebody else was high treason up until about 200 years ago.”

“Determining time and figuring out the concept of longitude was also a significant step forward towards the art of navigation we see today.”



Electronic navigation may be new – but many of the fundamental concepts of navigation still apply

Moving forward from these very early navigational methods, the discovery of electricity was an important step in opening up the potential to power the devices we have on modern bridges.

“Electricity hasn’t been around forever, and without electricity would we be able to navigate the way we do today? Probably not. Though we had been navigating for a few thousand years without electricity,” said Mr Brandt.

“Gyrocompass, radar, GPS, AIS, ECDIS – they’re all brand new inventions. But we’ve been perfectly able to navigate the seas for centuries or even millennia without these things. So how have they changed the way we do things today?”

Mr Brandt argues that most of these electronic innovations, while changing the operational processes on the bridge, have not fundamentally changed the core concepts that underlie competent navigation.

“(ECDIS is) said to be the largest advance in navigation since the radar in the 1950s. What do we do with it?” he said.

“With the charts we all used to use, they were used to see what’s out there and get an idea of where you can go. You would also use it to figure out how you will get there, how long it will take, and so on.”

“Looking at an electronic chart, it’s also showing you what’s out there, and you use it to see where you are and where you are going, what’s around you and how you are going to get there. The concepts are pretty much the same.”

Mr Brandt highlights this by noting how the differences in how a seafarer performs the voyage planning function using an electronic chart or a paper chart are less significant than may be expected.

“The way you do it, practically, is perhaps a little bit different but from a concept point of view there’s absolutely no difference,” he said.

“Generally speaking, you need to see where you are, where you are going, if it’s going to be deep enough or if there are any dangers along the route. Position fixing, plotting, bearings, ranges, distances – you can do it all completely manually on the paper chart as well as on the ECDIS. Nowadays there is compass bearing equipment available that can send your bearings electronically direct into the ECDIS.”

“Electronic might be easier, but manual is just as accurate and the result is the same. Either way, you still need to plot the position lines. Whether you do that by ‘click and drag’ or you do it with a pencil and triangle, the concepts are the same.”

Voyage planning is only one of a number of navigational functions that, despite the use of updated technologies in their performance, rely on fundamental concepts that have been familiar to mariners for generations.

“Technology has changed – but the way things work hasn’t for a few thousand years. The concepts are all the same,” said Mr Brandt.

“You still need to be very suspicious, and maybe you need to be a little more suspicious these days when the machines are doing things for you. You still need to double check position, just because the GPS is plotting your position doesn’t mean that’s where you are – as little as plotting your position on a paper chart means that’s where you are.”

“You still need to think ahead and plan ahead, because if you don’t do that you will become a passenger on your own ship; instead of you driving the ship around it will drive around with you – and this is a very dangerous situation.”

Changes in approach

While the basic concepts of navigation may not change significantly through the use of changing technology, the process of applying those skills will start to shift, and there will be differences in vessel operation that seafarers will need to adapt to.

“Automatic position plotting – that’s a major difference,” said Mr Brandt.

“It’s ‘Click and drag’ instead of using a pencil and divider – if you have thick, fisherman’s fingers then maybe using a computer might be difficult, but being familiar with the concept of computers is a necessity.”

One of the major benefits of using ECDIS is chart updating, which can save hundreds of hours per year when compared with paper charts

“In the old way of doing things you would put your position on the chart and then 20 minutes later you’d start wondering where you have been and where you are now. On an electronic chart system it’s a live view, more or less.”

Another significant difference is in the chart itself, moving from a large, fold-out piece of paper to an electronic display showing one particular portion of a chart at a time.

“Instead of having a big pile of paper charts of different scales, you have everything in one view. But you still need to use different scales of charts, zooming in and zooming out instead of flipping paper charts back and forth,” said Mr Brandt.

“A lot of people complain ‘you can’t look ahead, you can’t see 10 or 15 miles in front of you, you only have a small screen’. They want

a 60 or 70 inch screen, the same size as a paper chart. But that's wrong thinking."

"You could have an enormous screen on the bridge but that won't change the resolution, the amount of information will still be the same. The resolution will be the same as on a regular sized screen, the information will be the same. So you need to understand the concept of zooming in and zooming out, and how information layers change."

As Mr Brandt notes, changes like these don't require the operator to change the way they think about navigation, but will need them to adapt to performing their tasks in a new way.

"The task of navigation has now changed from trying to figure out where you are now and where you are going, to seeing where you are and figuring out if that is true!" he said.

"It's more about monitoring and looking to see if the machines are trying to cheat you. That requires quite a significant shift in the mindset of the operator, because it's so easy to become complacent and just ride with the ship instead of driving it."

The trade-off for the mariner in having to suffer the pain of change in moving to electronic systems is the significant benefit of reduced effort in chart updating, and the simplified process of voyage planning with a wider array of available information.

"Anybody who has worked onboard and has been correcting charts knows how painful and time consuming and boring it is, and how easy it is to make a mistake. That has effectively been wiped out now," said Mr Brandt.

"We've been studying our own crew, and I've interviewed probably six or seven hundred of them, and the conclusion is that, on average, on a deep sea ship, you spend somewhere around 800 hours per year on chart correction and voyage planning, if you have a folio of, say, 1,000 to 1,200 charts like we carry on our deep sea ships."

"That's a cumbersome task for officers who are nowadays more or less drowning in all the mandatory and otherwise required paper work. So saving time is a major contribution here, which is – if you think about it – a quite unusual effect of a new regulation."

Mr Brandt has also seen that route planning is now performed much quicker onboard, and the technology can assist in avoiding danger – if used correctly.

"You have an automatic checking tool, for example, but there are some tricky aspects, there is some hidden information in the chart," he said.

"On every chart you have information in the margin, but on the ENC a lot of it is hidden as metadata, which means you need to look for it to find it. If you don't know that information exists, you don't know that you need to go looking for it or extract it, and then you will miss it."

That being said, Mr Brandt does believe that the use of electronic navigation systems has made vessels safer and will continue to enhance the ability of the navigator to become aware of, and avoid, dangers at sea.

"In the old days you had various instruments, and you put the picture together in your head, which is a more demanding and error prone task than most people think or believe," he said.

"On the electronic chart it all comes into one view, which helps you get a much better situational awareness."

"You don't need official ENCs for this, you just need a general chart system (ECS) with some kind of chart data – official or unofficial – as a backdrop. Having your position live, roughly in relation to land masses and to traffic in the areas covered by the radar, helps a lot to tell you where your 'exits' are in case of a difficult traffic situation."

Away from the bridge, Mr Brandt has also seen financial benefits for the shipping company as a result of employing ECDIS onboard, with Stolt Tankers now spending less on electronic charts than it did on sailing with paper.

“We’ve seen a significant improvement on our deep sea ships, we are looking at a cost reduction of about one-third when using only ENCs compared to using paper charts,” he said.

“Paper charts are not free, a collection of charts like we have on our deep sea vessels could cost you about $35,000, and that’s being replaced every five years. ENCs are also expensive, if you want to buy the same coverage on ENCs you’re probably looking at about $200,000, but you don’t buy that many ENCs. You buy the ENCs you need for the voyage. That way you can reduce the costs significantly.”

“It’s also giving you increased flexibility, because you can go wherever you want. You can have all of the charts onboard but you only pay for the ones you need when you need them. If you need to go somewhere else you buy a licence for where you need to go, and you’re up and running. If you don’t have the paper charts you need for the new destination you’re in trouble – you can’t go there. You’d have to fly them out or bring the charts out on a pilot launch.”

Electronic challenges

Of course, while any new technology may bring with it a range of benefits, generally there will be a number of challenges that need to be overcome to maximise the benefits of moving from one way of working to another.

Stolt Tankers has had to deal with many of these challenges over the course of its experience with electronic navigation systems. One of the most pressing of these is the issue of system availability – compared to paper, computer-based technologies are a lot more prone to breaking down.

“On the technical side, how do we keep the system running and what if it fails? We all know what computers are like today, sometimes they just decide that they don’t want to work for you anymore and shut down,” said Mr Brandt.

“Hardware reliability can be covered in different ways, one simple way is by redundancy, having multiple systems. The regulations say you need two ECDIS systems onboard (to remove paper charts), but if you have three you will be even more safe, from a commercial point of view.”

“If you have two systems and one goes down, what do you do then? Do you repair it? Will you be able to get the spare parts?

That depends on where you are. Do you get the paper charts? That also depends on where you are. So having a third unit is, the way I see it, very cheap insurance. From a practical point of view it also makes sense, as you really need three units onboard – one to keep next to each radar and one at the chart table for planning.”

Virus protection is another key issue that can seriously affect the electronic navigation systems on the bridge, particularly ECDIS, if precautions are not taken.

“Getting viruses on the systems is more common than most people think. Talking to technicians and service engineers I hear that this is a pretty big problem,” said Mr Brandt.

“In most cases it will not affect the system that much, but as it builds up what normally happens is that it steals processor power and the system will be more and more sluggish and slow.”

“How do viruses get into the system? Normally not through email, normally they come in via USB devices. When you start transferring data using USB devices, or even people plugging in their own USB devices to install stuff, it can happen.”

In this regard Mr Brandt insists that proper anti-virus protection is a necessity – however, introducing anti-virus software then raises the question of whether a system is still type-approved if used together with an anti-virus software that was not part of the original installation.

“Maybe, maybe not,” said Mr Brandt. “When you have your system type approved it’s approved with that particular OS, with that hardware. If you install additional software it might make the type approval void.”

“So you need to figure this out, find a system that is approved with virus protection or have strict procedures to protect your system from USB devices.”

Making sure that the correct charts are available on the ship as ENCs is another issue that needs to be considered – seafarers need to make full use of the software systems that run in conjunction with ECDIS to make sure they are managing their chart folios correctly.

“Whether you’re navigating with paper charts or ENCs, you always have to use the charts with the best scale. How do you know which is the best scale available? You need to compare the chart catalogues,” said Mr Brandt.

“That’s not an easy task unless you have the right tools. There are chart management systems on the market today where you can easily compare the ENC coverage with paper charts, and see if there’s a paper chart with a better scale. You need to use that.”

“I understand that most of the equipment manufacturers still don’t bother too much about this, if they have even thought about it. Most refer back to the chart agent, and the chart agents look a bit puzzled as they don’t seem to understand the issue.”

Updating

Having the correct charts available is a continuous process – even after the charts are licensed they must be updated as new data is made available to remain in compliance for navigation.

As Mr Brandt previously noted, the effort involved in this process is vastly reduced through the use of electronic charts – however, another challenge still remains in getting the data from the shore to the ship so that this updating facility can be taken advantage of.

“Do I send it by CD or by e-mail? Do I download it? ENCs are heavy loads, each ENC can be 5-6 MB – how much does that cost? Do I need to keep my charts up to date all the time?” said Mr Brandt.

“With paper charts there’s a gentlemen’s agreement that six, seven, eight weeks lagging is not a problem because you have to allow reasonable time for the mail to reach the ship.”

“But now when you have connectivity by satellite you can just download them – why didn’t you do that? Because it’s going to cost a fortune – $10,000 to $15,000 per month if you’re not careful. Do you or your chart agent have mechanisms in place to monitor and control this?”

The applicability of Temporary and Preliminary (T&P) Notices with corrections for charts is another issue that needs to be considered – something that Mr Brandt describes as a ‘hot topic’ when it comes to ENCs, which he feels requires clarification from authorities.

“T&P Notices apply to paper charts, but do they also apply to ENCs? Do you have to plot your temporary and preliminary notices on ENCs? I think ‘No – because look at it the other way round. Do you have to do your ENC updates on the paper charts? That’s ridiculous, so why should you then apply updates the other way round?” he said.

“ENCs are approved, officially recognised charts. Paper charts are officially issued and approved charts. They have exactly the same status. So why should we then be forced to do quality control of what the hydrographic offices are doing – or not doing?”

“SOLAS requires hydrographic offices to provide us with the required updates. If they don’t do that then we can’t be blamed. They should provide us with the updates in a convenient way. We have to educate the world about that and IHO and IMO need to make sure everyone involved lives up to and follows the set standards; T&P notices do not exist in any of the relevant standards governing ENCs and ECDIS and nor should they – and an update is an update. People onboard should not have to worry about this – they should only have to load the latest updates and leave it at that.”

Training

Another area that is a ‘hot topic’ is seafarer training in electronic navigation systems, with competence levels a matter of great concern when it comes to ensuring safety at sea.

Mr Brandt highlights the issue by reference to a recent accident investigation report that uncovered a dangerous lack of situational awareness on behalf of the crew on the ship in question.

“A tragic accident happened a few months ago, where a container ship ran down a coastal vessel, at the loss of the entire crew. The OOW on the container ship didn’t even notice that something had happened,” he said.

“In the MAIB investigation report, an official authority, I found one quite remarkable comment which said that there is no connection between certification and competency. There’s no relationship at all.”

“So what they’re actually saying is to forget about STCW, it’s got no connection to reality. And this is not the first time they say this, it can be found in more reports from MAIB.”

Another concern that Mr Brandt raises is the issue of continued assessment and assurance of competence after a licence has been issued, to make sure that a watchstander still possess the skills required to safely do their job.

“Unfortunately, regulations typically only permit authorities to revoke a licence in cases of accidents as the ones mentioned above,” he noted.

“In a situation where, for example, someone takes an exam to upgrade a licence but fails on e.g. COLREGs, this person will not get the higher licence. However, there is, as far as I know, no legal room to also revoke the current licence, despite the fact this person doesn’t know something that should be ’bread and butter’.”

“Administrations and the world in general put a lot of pressure on us owners, saying we need to fix this – it’s not our fault, it’s the shore side establishment who can’t train people properly in the first place, why should we suffer from that?”

Navigation future

Looking forward, Mr Brandt believes that there are a number of areas ripe for improvement that would help to make electronic navigation more beneficial to shipping companies, and the industry at large.

“What I would like to see is maybe improved chart coverage, though it has improved significantly over the years, and improved communications to get the charts onboard,” he said.

“And of course, HO's need to get their act together and shift their focus from profit towards safe navigation as their top priority by giving us flexible access to charts at a reasonable cost.”

“Another thing for developers, and maybe for IMO, extracting ‘hidden’ information needs to be easier. Today you have to actively look for quite a few things, and I think there must be ways of getting easier access.”

Mr Brandt is hopeful that improvements in satellite communications technology will help to make the updating process more cost effective, by bringing per-MB prices down to a lower level.

“The communications cost today is holding us back,” he said. “We’re still operating successfully, but it would make life a lot easier having direct connections onboard.”

“There are systems out there, but will the infrastructure manage and cope if all of today’s fleet go online? I’m not sure – would be interesting to hear what the network owners/ operators have to say.”

Mr Brandt believes that there is also further room for improvement with regard to the user interfaces currently employed on ECDIS equipment, and the information sources feeding into the navigational display.

“Many are relatively easy to work with but there’s still work to do, especially when it comes to traditional navigation,” he said.

"All systems today are basically built to work using only GPS. There's so much more we can do with a chart system today than just navigating on it, and there are more factors that can be brought into it."

"That said, I do not believe in the widely discussed 'S-mode'. I think this would only hamper development. Better then to make pilots bring their own laptop or tablet with their own chart system and hook it up to the ship's sensors."

'We are looking at a cost reduction of about one-third when using only ENCs compared to using paper charts' – Petter Brandt, Stolt Tankers

With this new age of ECDIS and electronic navigation set to become a major part of navigation for the next generation of mariners, Mr Brandt suggests that shipping companies take advantage of the opportunities available to then to improve operations and enhance safety.

"Don't be afraid of technology, there's a lot of scepticism out there but there's nothing wrong with the technology, it's been around for decades. I started my career on ships that were more or less ready to go paperless 20 years ago – but we're still almost not there," he said.

"The technology is there to help you, figure out how it works and make friends with it. It does help having good connectivity, but it's not necessary. It still works. What is maybe more important is to invest in people."

"We often focus on the hardware but we need to invest in the people as well, especially looking at the general competency problems in the industry today, it's even more critical. The methods have changed, but the concepts are all the same. It's not that much of a revolution, is it? Maybe more like a natural e-Volution." DS

Inséré le 19/08/13 LOGBOEK NEWS Enlevé le 19/09/13

IMO Maritime Safety Committee

IMO Maritime Safety Committee Outcome MSC 91 was held in London on 26-30 November 2012 under the chairmanship of Deputy Director-General of the Danish Maritime Authority Christian Breinholt. Code on protection against noise on board ships The Committee adopted a mandatory code for the protection of seafarers against noise on board (the Noise Code). The Code lays down the permitted maximum noise limits on ships to protect seafarers against noise and contains detailed provisions on how to carry out the necessary measurements to ensure compliance with the noise levels. It was decided that the Code enters into force on 1 July 2014 since it will apply to ships for which a building contract is concluded on or after 1 July 2014, or the keel of which is laid on or after 1 January 2015, or which are delivered on or after 1 July 2018.

Enhanced passenger ship safety As a follow-up on the **COSTA CONCORDIA** accident in January 2012, the Maritime Safety Committee initiated a scrutiny of existing safety regulations and supplementary guidelines on safe operation of passenger ships in the spring of 2012. The result of this was a number of recommendations that the passenger ship companies were urged to incorporate into their safety procedures. At the same time, a number of relevant long-term initiatives were identified so that they could be considered by the IMO upon the proposal of the member States. Before this session, it was expected that it would be possible to present the casualty investigation report at this meeting just as the Maritime Safety Committee could, on the basis hereof, assess the need to launch new independent measures.

Though it became evident at the meeting that the casualty investigation had not yet been finalized, it was - considering the special circumstances of the accident - decided to establish a working group on passenger ship safetyto assess and, if relevant, follow up on the information that had in the

meantime become available about the accident. Against this background, it was decided at the meeting to make the regulations on the mustering of passengers on board passenger ships stricter when these passengers are to be accommodated on board for more than 24 hours. According to the proposal, musters must thus take place before departure or shortly after the ship's departure from the port in which the passengers have embarked. Furthermore, it was agreed to tighten up the recommendations on musters so that shipping companies and masters are to strive for all passengers to take part in the musters planned. Finally, it was agreed as a long-term measure that the guidelines on the planning of voyages should to a greater extent emphasize the need for a thorough evaluation of changes to the planned voyage if such changes were made during the voyage and were not made on the basis of navigational or weather-related conditions.

The ISM Code Denmark had, in close cooperation with the other EU member States, strived for an approval of a number of proposals for amendments to the ISM Code and its associated instruments. The overall aim was to stress the company's responsibility for assessing whether the crew was sufficient for the ship's operation and to specify the company's responsibility for ensuring that the ISM-related tasks delegated out to sub-contractors meet the safety standards of the ISM Code. The proposal that had been drawn up by the so-called Human Element Working Group was approved by the Maritime Safety Committee with a single amendment on the use of footnotes with a view to adoption at the next session of Committee to be held in June 2013.

Guidelines on safety when transferring persons at sea Occasioned by a tragic incident where a seafarer died when embarking a ship in the roads on a winter day, Denmark had submitted a proposal for the IMO, containing a number of Danish recommendations on safety when transferring persons at sea. The Danish recommendations were well received and the Maritime Safety Committee decided to draw up IMO guidelines on safety when transferring persons at sea on the basis hereof. The Committee decided that the work should be carried out by the Sub-Committee on Standards of Training and Watchkeeping within the Human Element Working Group in the spring of 2013.

New ship standards and the use of risk analyses Goal-Based Standards (GBS) is an overall framework tool for the standards according to which ships are to be built. In the longer term, it is expected that the new tools will create the framework of future international regulations on the construction of ships and will help develop innovative ship designs without compromising safety. At the meeting, it was sought to further develop a common definition of the so-called "safety level approach", which is a risk-based approach where an assessment of a number of risk factors is included, for example the risk of human errors when assessing the safety of a ship design. In addition, further work was made on guidelines for the approval and promotion of new and innovative ship designs that could not be encompassed by current SOLAS regulations. Originally, the guidelines were sub-mitted by Denmark in connection with the so-called SAFEDOR project. This work was not finalized and therefore it is now continued in a correspondence group with a view to being finalized at the next session of the Maritime Safety Committee to be held in June 2013.

Piracy During a number of sessions, the Committee had been working on a number of initiatives for combating piracy. A great deal of this work had already been implemented and therefore this meeting contained only general information about the trend in the number of acts of piracy and armed robbery. Furthermore, in-formation was provided about the status of the development of a new standard for privately contracted armed security personnel developed by ISO, while work was ongoing finalizing a supplementary standard that could be used as guidance when approving such security personnel. The Committee agreed to continue the efforts made so far to combat piracy and that it was important to re-port acts of piracy in order to acquire extensive knowledge about developments herein and thereby con-tribute to arranging the efforts to be made to combat piracy in the best possible way.

New regulations The Committee adopted amendments to chapter II-2 of the SOLAS Convention on fire-safety concerning the so-called Fire Safety Systems (FSS) Code, new regulations on

communication equipment for fire-fighters in connection with fire-fighting as well as requirements for equipment for recharging air bottles for fire-fighters. In addition, requirements will now be introduced on the procedures for the rescue of persons from the water. These regulations will enter into force on 1 July 2014.

Coming regulations

The Maritime Safety Committee approved the IMO Instruments Implementation Code, which was to form the basis for making it mandatory for all member States to be subject to an audit with a view to examining whether the member States meet their obligations under the maritime conventions on maritime safety and protection of the marine environment. Since the new regulations concern a number of conventions, a plan has been drawn up on how to adopt them at coming IMO meetings before they can enter into force. Furthermore, the Maritime Safety Committee approved new regulations on the recognition and authorisation of classification societies to perform survey and certification of ships on behalf of flag States. The so-called RO Code stipulates a number of requirements for what the classification societies must meet in order to be approved and authorised to perform surveys of ships on behalf of flag States. The regulations are to be adopted at the next session of the Maritime Safety Committee before they can enter into force. **Source: Danish Maritime Authority**

Inséré le 21/08/13 BOEKEN BOOKS Enlevé le 21/09/13

Verleidelijk boek *Zeevisserij aan de Vlaamse kust*

Het immer dynamiek uitspattende Nationaal Visserijmuseum Oostduinkerke publiceerde bij de Stichting Kunstboek een erg fraai geïllustreerd overzichtsboek over de geschiedenis van de Vlaamse zeevisserij. De lezer ontdekt hoe de kustvlakte ontstond en hoe de nood aan havens zich opdrong. Talrijke verrassende aspecten van de zeevisserij worden belicht op een hedendaagse manier, door middel van heldere teksten, getuigenissen en diverse originele illustraties, waaronder heel wat reproducties van bekende en minder bekende schilderijen. Je snuift de sfeer op in het visserskwartier en zit mee aan tafel bij de vissersvrouw die bidt dat de storm gaat liggen. Je beeldt je in hoe ze met haar vis leurt en haar twaalfjarig kind als matroos mee de zee op stuurt. Je leert bij over het onderwijs, de rijke vangsten in IJsland of hoe sterk de angst het bijgeloof aanwakkerde. En je begrijpt beter hoe de visserijsector zich vandaag verder ontwikkelt. Kortom, een uitstekende introductie tot onze rijke visserijgeschiedenis

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Inséré le 21/08/13 HISTORIEK HISTORIQUE Enlevé le 21/09/13

POLDER

Tegenwoordig is De Polders de standaardtalige benaming in Vlaams-België voor de alluviale vlakten aan de Noordzeekust en aan de Westerschelde. Die naam is echter niet inheems in de dialecten van de kuststreek. Het zeekleigebied heet aan de Westkust Het Blote, aan de Midden- en Oostkust Het Noorden en in het Oostendse De Schorre. In de Wase en de Antwerpse dialecten daarentegen gebruikt men de naam Polder(s) wél. Hoe dan ook is het een oud woord dat vrijwel direct doet

denken aan een laaggelegen, vlak gebied in de nabijheid van en beïnvloed door de zee. In dit artikel gaan we eerst wat nader in op het ontstaan van onze kustpolders, en buigen we ons vervolgens over de oorsprong van het woord polder.

HET ONTSTAAN VAN ONZE KUSTPOLDERS

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

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

De oorsprong van het woord polder

De Nederlanden met een primeur.

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

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

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

Een poelenrijk gebied?

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

Aan póla zou dan een aan het Latijn ontleend suffix ória zijn gehecht, dat een gedachte van collectiviteit toevoegde aan het grondwoord. Het aldus gevormde pólória betekende dus 'veelheid van poelen'. Dat het grondwoord in deze afgeleide vorm niet de verwachte klankontwikkeling kende zoals het afzonderlijke póla, nl. eerst tot Middelnederlands poeël (een klankstadium dat bewaard bleef tot in de huidige West-Vlaamse dialecten, waar bv. de plaatsnaam Poelkapelle als poeëlkapelle klinkt) en vervolgens Nieuwnederlands poel, schrijft Gysseling toe aan de drielettergrepige structuur van het woord, die een vroege verkorting van de Germaanse lange ó tot korte o mogelijk maakte. Vandaar dus dat we niet poelder zeggen, maar polder. Door de beginaccentuering viel de rest van het woord ten prooi aan verzwakking en verkorting, tot enkel een element –re overbleef.

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

Door aanslibbing gevormd land of ingedijkt land?

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

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

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

Het suffix in deze voorbeelden heeft een versterkend effect op de betekenis van het grondwoord. Wat concreet het motief is geweest om juist met dit intensifiërende bestanddeel uit polle een nieuw woord polre te creëren, is vandaag nog moeilijk naspeurbaar. Zag men in de begindagen van de bedijking de ingepolderde gronden als "verbeterde"

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

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

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De Grote Rede September 2012

Inséré le 23/08/13 LOGBOEK NOUVELLES Enlevé le 23/09/13
Second hand ship demand plunges on negative sentiment

Despite a rather healthy demand for newbuildings, ship owners aren't exhibiting the same kind of interest on second hand carriers, as we've now entered the "most predictable month of the year", according to shipbroker Intermodal. Inits latest report, the shipbroker said that "as expected the seasonal effects has pushed sentiment back into negative territory. As the Greek owners are enjoying their summer time off, the S&P market is falling apart. While few prospective buyers have stayed back in their office to grab any chances and possibly avoid competition while doing so, most seem to have postponed their interest till September in the hope of seeing a market that they feel will make more sense. One can say that the recent price inflation posted over the last two quarters in the dry bulk market and more specifically for panamax vessels, is an additional reason for some to switch over to a "wait & see" attitude at least until the slowest month (in terms of chartering) has past", wrote Intermodal's SnP broker Konstantinos Kontomichis.

He went on to state that "from the beginning of 2013, handy tonnages have faced the smallest fluctuations in values, reflecting the fact that they still the vessels holding the lowest risk exposure in the dry market. Supramax asset values were running on the high end, something which is quite reasonable though considering the fact that this size segment has been enjoying the best returns in the market over the last couple of years. On the other hand the poor rates, overwhelming delivery schedule and overall negative sentiment for Panamaxes during the second half of the previous year caused depressed sales in the sector. The cheapest deals took place, during the end of 2012 and the very beginning of 2013, providing the groundwork and sparking heavy competition amongst Greek cash buyers which resulted in the unexpected climb in prices.

The recent rally in asset prices which we witnessed was also driven by the appearance of funds and private-equity covering the gap left from the more cautious and now heavily regulated banks. Many were claiming "we are scratching the bottom" and their words translated to private investors as "rock bottom bargain prices". Of course along the way several additional economic factors played their part in the underling reasoning. The bankruptcy of the Cypriot banking system, the instability of Greek financial institutions and the clouded economic policy of the European Union was enough to push investors to the "sea" as a much "safer" choice", Kontomichis said. He concluded his analysis by noting that "in all these "safer" decisions there seems to be little room for "profitable". The above decisions are locked at the going charter rates. It does not make any sense at these levels as the actual earnings do not reflect the levels that ship prices have reached. It is no surprise that we have not only reached back to pre-boom long-term repayment periods for bank loans and even surpassing them. Owners are struggling, shipping is still looking like part of a falling domino structure while many fundamentals are still missing from the market such as financing, economic stability, strong world economic growth, slower supply growth etc. Waiting for a market comeback we have to remember there is always a 'Dummy variable". No one can predict the future, and despite everything

seeming “bearish”, there is no telling of the potential direction the market could end up taking", he concluded.

Meanwhile, in the sale and purchasing business reported this week, Intermodal said that "despite a couple of enbloc deals things continue to move at a slow pace. Few buyers are still actively looking, although there are respectable number of bargain hunters inspecting. On the Tankers side, we had the enbloc sale of the Chinese built “**PEACE CHINA**” (298,000dwt-blt 11 China) and “**GRAND CHINA”** (298,000dwt-blt 11 China) which were picked up by Greek buyers for a price of US$ 54.5m each. On the dry bulker side, we had the sale of the “**Tokiwa Glory”** (55,742dwt-blt 06 Japan) which went to Greek buyers for $ 19.0m basis SS/DD due", the shipbroker said.
Source : Nikos Roussanoglou, Hellenic Shipping News Worldwide

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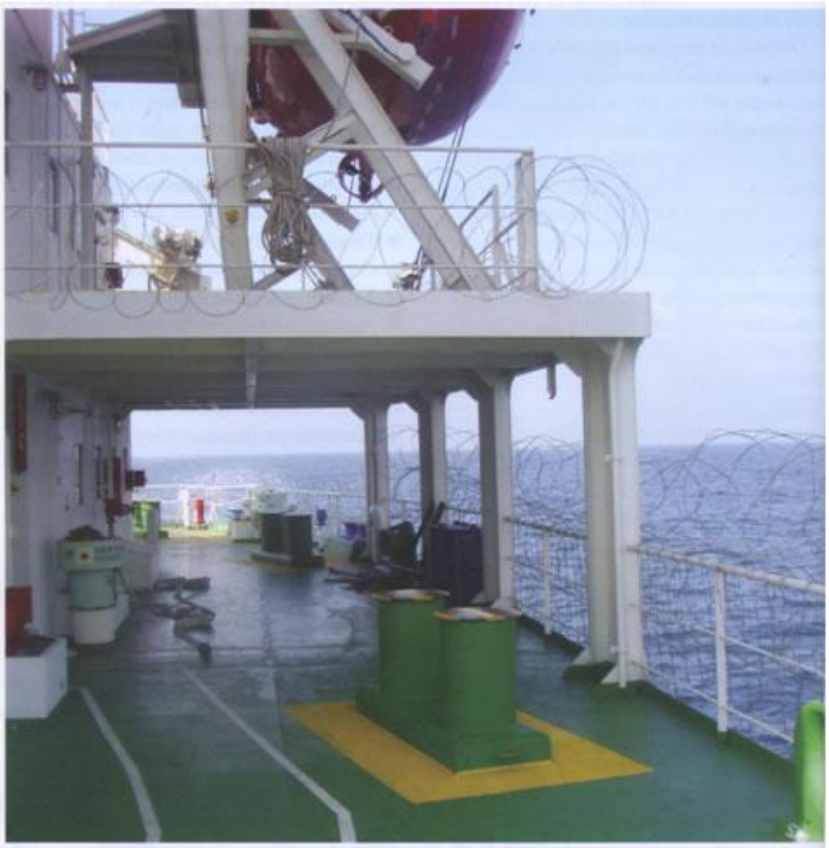
Armed maritime security personnel —vetting is critical



Proper protection is vital in the HRA. Photo credit—Ocean Protection Services.

Imagine if you will, the following statistics being applied, not to crew of ships, but to the cabin crew and pilots of the world's airlines*

According to the International Maritime Bureau (IMB) in July 2011, piracy attacks numbered 266 in the January/June period, with 163 involving attacks made by Somali pirates, up 63% from a year earlier.

A total of 29 ships were hijacked and 495 crew taken captive in the six-month period. Injuries and deaths caused by the attacks rose to 46 people from 17 a year earlier.

With attacks increasing in number, boldness and violence, it is perhaps understandable that momentum is quickening to provide sometimes ill-informed shipowners/operators with the guidelines and legal tools, required to make deployment of armed security personnel feasible and responsible.

In reaction to growing piracy activity, and amid the call for support and guidance from shipowners and operators as to how to deal with this burgeoning issue, Norway passed is also inherently empiric. Therefore, vetting is more than simply a matter of asking the right questions: being able to understand the answers and what those answers mean in the circumstances, is integral to the validity of the outcome.

In this regard, if there are points on which shipowners' own due diligence might flounder, they are likely to arise out of issues outside owners' normal professional competency. For example, the

operational and logistical management of security personnel and their firearms, Rules for the Use of Force, or weapons licensing and accountability are not matters in which shipowners are commonly expected to be versed. Moreover, AMSPs will reasonably expect that whoever is vetting them understands the operational dynamics of providing armed security services in the maritime domain and the nature and practical realities of the Somalia-based piracy threat, at the very' least.

Inevitably, there will be circumstances in which the diligence that a shipowner took in their evaluation and selection of a chosen AMSP will, itself, be scrutinised. Scenarios might conceivably include a negligent discharge of a firearm resulting in damage to a vessel or cargo, or even the loss of the life of a crew member. And, although no ship carrying armed security personnel has, to date, been hijacked, it cannot be taken for granted that this will remain the case, particularly if the firearms being carried are not effective and proportionate to the threat.

Many shipowners simply want to know which AMSPs are `good' and which are not. However, the objective of vetting is not to recommend any particular provider, or indeed determine which companies are `good', or `bad'. The vetting process does not - nor should it - provide a warranty on the likely performance of a potential contract. Lists of companies that others have recommended may, superficially, make the decision easier. But in reality this should be seen as no more than a useful starting point for investigation.

Naturally, recommendations and `approval lists' make the decision easier, at least superficially. However, vetting is an eminently practical tool and, in these circumstances, provides a robust foundation for a safe and lawful working relationship between shipowners and providers of armed maritime security services.

An intersessional meeting of the Working Group on Maritime Security and Piracy was due to meet during the week commencing 12th September 2011 to review the interim guidance to shipowners, ship operators and masters on the use of PCASP. As the shipping industry continues to battle the plague of piracy, these current recommendations are an encouraging step in recognising the role that armed guarding can perform. However, as the IMO develops its strategies to counter piracy and flag states review their position, the market for armed guarding will undoubtedly grow significantly and so too will the need for independent, robust and informed vetting.

Shipowners and operators should be in no doubt; the deployment of armed guards on board vessels is far from the panacea. But taking an informed decision using all available tools will help shipowners and operators to defend cargoes, vessels, crews, liability and reputation.

Sadly, there is no magic wand to eradicate piracy. So for now, the ability to protect vessels safely and lawfully provides the next step along the road towards the ultimate goal of finding a cure.

*This article was written by Anthony Carroll, head of business development, Gray Page.

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Piracy and maritime terrorism: a two-headed Hydra?

by Dave Mugridge, independent maritime security consultant, research fellow, Dalhousie University

Questions about possible maritime links between terrorist and criminal groups have resurfaced following the rise of Somali piracy and the unconnected Mumbai attacks in December 2008. Within the context of a growing criminal exploitation of the world's oceans, this paper will attempt to ascertain the nature of this strengthening and apparently symbiotic relationship.

The evident and well documented deterioration in maritime security reflects a general malaise in society's appreciation of its importance to both the global economy and strategic environment, particularly at a time when terrorism could be said to have entered a new phase of methodology in

its attacks on noncombatants. The potential solution to these multifaceted problems would appear to lie in developing a co-ordinated, coherent and comprehensive approach (1) rather than the standard myopic military jerk of the knee. Gaining political acceptance is essential if operational cross-pollination from related fields such as counter-insurgency, international development and law enforcement can be brought together to aid the restoration of good order.

In terms of methods of operation the practitioners of maritime criminality and terrorism share many common characteristics. Analysis of this should in turn aid the international response but, to date, what we have witnessed has been misdirected and avoids the many lessons learnt from fighting irregular opponents in modern-day counter-insurgency. These disparate terrorist and criminal forces are unconventional in their organisation, financing1 and campaigning. They are small in number and, with the exception of the likes of Al-Qaeda or large-scale narco-terrorist organisations, focus on local or regional issues. The singular and fundamental issue that separates their political and criminal activities is the presence of ideology.

The maritime economy's multifaceted vulnerability to both terrorism and criminality should not come as a surprise to the readers of this journal. After all, sea going vessels carry 80 per cent of world trade by value and 92-96 per cent of trade by volume. This compares with less than 1 per cent by air. Since the end of the cold war we have seen the seemingly irresistible development of commercialism's greatest revolution - globalisation. This has in turn fuelled an incredible rise in both the volume and value of maritime trade, which allows terrorists and criminals to operate with virtual impunity as mere background noise.(2)

This environment has seen the rise of both piracy and maritime terrorism. Our collective failure to deal effectively with either should be the concern of all because, unless enduring solutions can be implemented, we are likely to witness their proliferation across the globe. Their spread will be based on growing global poverty, failures in national governance and a constant stream of targets of opportunity. The obdurate incidences of piracy off the Horn of Africa and into the Indian Ocean suggests the limited success of the conventional military response, the increased sophistication of these organised criminals and the growing recognition that piracy will continue unless outside authorities impose some degree of stability and effective security over Somalia and Yemen.

Tangible and enduring improvements in security and stability off the Horn of Africa are far from likely in the immediate term. The region reflects the ravages of civil war and the failure of the international community to intervene to stop this travesty from getting out of hand. Islamist and Al-Qaeda franchisee group Al-Shabab has enjoyed a successful military campaign but lacks widespread indigenous support for its political and religious agenda. On the coast, fishing clans are reluctant to turn their backs on the spoils of piracy and kidnap to follow a rule of law established by a transitional government of diaspora academics and domestic warlords who would undoubtedly return them to grinding poverty. As of March 2010 they held over 700 hostages and 30 ships, an unimaginable scenario in any other global industry.

My contention is that as time has progressed we are now on the cusp of seeing a strengthening of these links and a potential nexus is either upon us or is imminent. There seems little more to divide these groups than the very radical ideology that separates a terrorist from the rest of mankind. Yet the factors that could unite them are being fused at an alarming rate by current world events and demonstrate little sign of abating. Terrorists are no strangers to criminality, and criminals are not strangers to the use of terror. So I suggest neither side has far to walk on their respective philosophical rendezvous. The current situation is in fact a time in which the "mutation" that Charters wrote of could in fact commence the final descent towards the "revolution in terrorist affairs".(3)

Now is not the time to turn our collective backs on maritime-based terrorism or criminality which threaten to interrupt the vital circulation of goods or raw materials, or their exploitation of the inability of failing nation states to police their territorial waters at a time of global weakness. What is required is comprehensive, coherent and co-ordinated (3C) activity that transcends both nation state and international body.(4)

Tackling the source socio-economic problems in concert with direct military and judicial delivery is reflective of the 'comprehensive approach' being pursued hesitantly in both Iraq and Afghanistan. With perhaps the exception of the forward-leaning examples of the US Navy (USN) and Royal Australian Navy (RAN) few maritime security organisations have taken advantage of learning from other people's mistakes, particularly in looking towards their land-based military cousins for divine inspiration in solving these problems.(5) Even in the USA and Canada the pace of security co-operation in the maritime domain lags behind other well established aspects of mutual defence and protection.

As I have argued publicly, the multitude of modem international laws and conventions which were designed to support maritime security has proved to be incoherent in the face of modern security challenges.(6) Based upon outdated concepts, a lack of international co-operation over their enactment and outright failure on the part of the international community to deal effectively with failed or rogue states, it has left many commentators questioning their validity.(7). These problems have forced some states like the UK to establish bilateral agreements with similarly minded countries in problem regions to prosecute those involved in piracy. The International Ship & Port Facility Security Code (ISPS) (2002) was supposed to provide the maritime world with a comprehensive legal framework to combat both terrorism and criminality upon the high seas.(8). Its stringent obligations are designed to guarantee the safety of crew, cargo and society from terrorist or criminal acts. Yet this stove-piped bureaucratic response will not address the many root causes of maritime criminality or deter radical non-state terrorism upon the high seas.

Somali piracy's pre-eminent position as the most newsworthy maritime security issue has come about because of the recent number of 'spectacular' attacks aimed at Western merchant shipping. Despite the efforts of the UN and a number of maritime powers they have continued to attack, seize and ransom vessels in the glare of the media spotlight. The IISS published an excellent article which examined the root causes behind its rise and its growing sophistication.(9). There are a number of socio-economic and political reasons _ behind this, not least the failed nature of the Somali state, the loss of lucrative fishing grounds and the rise of warlordism. What is unclear is the level of co-operation that exists between the pirates who operate from Somali ports and the terrorists who have found sanctuary there.(10). What is clear is the growing sophistication of their operational methodology that now includes money laundering, swarm tactics, encrypted communications, developing competence in weapons handling and an ability to operate from mother ships well into

international waters. Western intelligence sources within Somalia are questionable at best. Despite ideological and religious differences the potential scenario of Al-Qaeda or Al-Shabab assisting pirates and vice-versa cannot be discounted.

Any new multidimensional approach will require additional political capital if it is to stand a chance of being successful. The western world is now vulnerable to any escalation in terrorist violence, and its ability to combat serious criminal activity remains questionable. Throughout history global financial crises have always seen a deterioration in national and personal security, and today is no exception. The need for flexibility in our response to security challenges has never been greater. Our ability to respond conventionally is overstretched and becoming less politically appealing, whereas a more comprehensive policy could offer politicians the ability to bring together the full force and legitimacy of whole government with new-found civilian partners within the shipping industry. The ability to learn lessons from the Iraq and Afghan campaigns would pay dividends in the arena of maritime security and certainly be more appropriate than looking for inspiration in a reincarnation of Lord Palmerston's gunboat diplomacy. IFSMA

1. Heidi Johnson, masters candidate at Dalhousie's CFPS (2007), pp1-21
2. Peter Lehr, professor at St Andrew's University, Scotland (2007), pviii
3. David Charters, professor at Greg Centre University of New Brunswick, in Charters & Walker (2004), p17
4. P Lehr (2007), pxi
5. J Michael Waller in Serviam (Nov/Dec 2008), p7
6. Author, research fellow at Dalhousie University (2009), maritime security seminar CFPS 29/01/09
7. Martin Murphy, fellow at Corbett Centre UK, in Peter Lehr (2007), p155-183
8. ISPS Code (2003 Edn), piii
9. Jason Alderwick, naval analyst at MBDA, London, formally of IISS (2009)
10. Ken Menkhaus, associate professor at Davidson (2008), pp21-22

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Bonaparte aan de Schelde.

Antwerpen in een Franse stroomversnelling

De schitterende, net gesloten expo over Antwerpen in de Franse tijd in het Museum aan de Stroom zal dankzij het boek *Bonaparte aan de Schelde. Antwerpen in een Franse stroomversnelling* nog lang bijblijven. Onder leiding van curator Jan Parmentier bracht een plejade binnen- en buitenlandse deskundigen een schat aan historische gegevens samen, die van deze catalogus een standaardwerk maken. Watererfgoedliefhebbers vinden hier de laatste stand van het onderzoek over de haven van Antwerpen, de Schelde en de marine in de tumultueuze Franse periode, tot leven gebracht met prachtig beeldmateriaal. Alle bestelinfo kan je vinden op www.exhibitionsinternational.org.

Inséré le 29/08/13 LOGBOEK NOUVELLES Enlevé le 29/09/13

The world's GPS system is vulnerable to hackers or terrorists who could use it to hijack ships -- even commercial airliners, according to a frightening new study that exposes a huge potential hole in national security.

Using a laptop, a small antenna and an electronic GPS "spoofer" built for $3,000, GPS expert Todd Humphreys and his team at the University of Texas took control of the sophisticated navigation system aboard an $80 million, 210-foot super-yacht in the Mediterranean Sea.

"We injected our spoofing signals into its GPS antennas and we're basically able to control its navigation system with our spoofing signals," Humphreys told Fox News.

'Imagine shutting down a port. Imagine running a ship aground. These are the kinds of implications we're worried about.'

- Todd Humphreys, a GPS expert at the University of Texas

By feeding counterfeit radio signals to the yacht, the UT team was able to drive the ship far off course, steer it left and right, potentially take it into treacherous waters, even put it on a collision course with another ship. All the time, the ship's GPS system reported the vessel was calmly moving in a straight line, along its intended course. No alarms, no indication that anything was amiss.

Capt. Andrew Schofield, who invited Humphreys and his team aboard to conduct the experiment told Fox News he and his crew were stunned by the results.

"Professor Humphreys and his team did a number of attacks and basically we on the bridge were absolutely unaware of any difference," Schofield said. "I was gobsmacked -- but my entire deck team was similarly gobsmacked," he told Fox News.

The possible consequences, according to Humphreys, are both ominous and far-reaching.

"For maritime traffic, there are big implications," Humphreys told Fox News from the bridge of the White Rose of Drachs. "You've got 90 percent of the world's cargo going across the seas. Imagine shutting down a port. Imagine running a ship aground. These are the kinds of implications we're worried about."

As the Costa Concordia tragically proved, a cruise ship off-course can have disastrous results. The Exxon Valdez was only narrowly off its intended track when it ran aground on Bligh Reef, spilling 11 million gallons of oil into Prince William Sound.

Humphreys told Fox News the easiest and most sinister “spoof” is to slowly slide a vessel onto a parallel course. Over time, the compass might read the same heading, but the ship could be far from where the crew thinks it is.

“You’re actually moving about a kilometer off of your intended track in a parallel line and you could be running aground instead of going through the proper channel,” Humphreys said.

And because aircraft have a similar navigation system to that aboard the White Rose of Drachs, Humphreys says a commercial airliner could be “spoofed” as well.

“Going after an expensive vessel on the seas and going after a commercial airliner has a lot of parallels,” he told Fox News.

The government is aware of this critical vulnerability. Last year, Fox News reported exclusively on a more primitive experiment Humphreys conducted using a small, unmanned drone. He was able to feed “spoofing” signals into the drone’s GPS, causing it to nearly fall out of the sky. As a result, Humphreys was called before Congress to testify, and also spoke with officials from the FAA, CIA and Pentagon.

This latest experiment takes Humphreys’ research to a whole new level.

“Before we couldn’t control the UAV. We could only push it off course. This time my students have designed a closed loop controller such that they can dictate the heading of this vessel even when the vessel wants to go a different direction,” Humphreys said.

Yet the Department of Homeland Security has -- according to Humphreys -- been “fumbling around in the dark” on GPS security, doing little to address the threat. Texas Congressman Mike McCaul, chairman of the Homeland Security Committee is incensed.

“It's a very serious homeland security issue that we've asked the secretary to review and look at and she's never responded to my requests,” McCaul told Fox News. “The department seems to be thumbing its nose at it, saying it has no jurisdiction over this issue and not really showing any interest in this issue at all.”

McCaul, along with Senators Coburn and Collins have asked the Government Accountability Office to look into what DHS is and isn’t doing to address this critical threat to national security.

A draft report is due in August, which could, depending on the results, trigger more Congressional hearings.

Meantime, Schofield is sounding a global alarm.

“People need to know this kind of thing is possible with a relatively small budget and they can with a very simple system steer the ship off-course -- without the Captain knowing,” he told Fox News

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La justice prévôtale de la Marine royale française à la fin de l'Ancien Régime

Alain Berbouche

A la fin de l'Ancien Régime, la « Prévôté de la Marine » s'inscrivait dans la dualité des institutions de la répression militaire maritime de la France [1] ; à une position clé du dispositif judiciaire royal mis en place pour lutter contre la criminalité des gens de mer au service du roi [2] .

I - La prévôté de la Marine dans l'appareil judiciaire militaire maritime de la France au XVIIIe siècle

Comme beaucoup d'autres institutions pénales d'Ancien Régime, la prévôté de la Marine était à la fois une juridiction et sa police particulière.

Joseph Vernet, Vue du port de Toulon, *détail : les forçats enchaînés* (© *Musée national de la Marine. Pb. 50 418).*

1 - La Juridiction ordinaire de la Marine royale

Qualifiée « Juridiction ordinaire de la Marine » par les ordonnances royales [3], la prévôté maritime n'est plus, à la veille de la Révolution, que le tribunal de « l'Intendant Départi dans un Port & Arsenal de Marine », lequel « y exerce la Justice & ordonne de la Police & Finance suivant le pouvoir qui lui est attribué par sa commission », conformément aux dispositions de l' Ordonnance du Roi Concernant la Marine du 25 mars 1765 (Livre Cinquième. Titre XXVI I I. Article CCCLXXIV) [4] ; l' Ordonnance concernant la Régie & Administration générale & Particulière des Ports et Arsenaux de Marine du 27 septembre 1776 (Titre IV. Article CI) stipulant : « Les crimes & délits commis dans les Magasins, dans les Bureaux des Commissaires & Contrôleurs, dans les Hôpitaux, Bagnes & Salles de forces, ainsi que tous vols commis (...) en général dans l'enceinte de l'Arsenal, continuent d'être du ressort de la Justice particulière de l'Intendant ». Alors que le conseil de guerre présidé ordinairement par le « Commandant de la Marine du Port & Arsenal » connaît de « tous crimes & délits, autres que vols, commis par quelque personne que ce soit » dans les « détails des Constructions, du Port & de l'Artillerie » [5] .

Et, tant devant le tribunal de l'intendant qu'au conseil de guerre, « l'instruction du procès sera faite par le Prévôt de la Marine » [6] .

Pourtant, jusqu'au XVIIe siècle, le prévôt de la Marine aurait disposé d'une juridiction autonome [7] . Mais, le Règlement sur les fonctions du Prévôt Général de la Marine ou ses Lieutenants du 7 juin 1674 [8] avait limité son rôle et celui de ses lieutenants à l'accomplissement des procédures criminelles ; et « qu'ils en fassent le rapport dans ledit Conseil (de guerre), debouts & découverts, sans avoir voix délibérative ». C'était un abaissement pour ces officiers qui prétendaient « avoir entrée, séance & voix délibérative, & rapporter couverts alors que les Officiers de la Marine, au contraire, (disaient) qu'ils devaient être traités dans toutes les fonctions tout ainsi que les Prévôts Généraux de la Connétablie et Maréchaussée de France le sont dans les Conseils de guerre des troupes de terre ». Ces dispositions furent maintenues dans l'Ordonnance de Louis XIV pour les Armées navales & Arsenaux de Marine du 15 avril 1689 (Livre Quatrième. Titre Premier. Articles VII, VIII et XIII) [9] . Puis, au mois d'avril 1704, un Edit portant établissement d'une juridiction dite Prévôté de la Marine dans plusieurs Ports du Royaume créa, en titre « d'Office Héréditaire », huit « Prévôts de Marine & des Galères » à Brest, Rochefort, Toulon, Marseille, Dunkerque, Le Havre, Port-Louis et Bayonne [10]. Les prévôts, assistés par leurs lieutenants, purent alors juger au criminel par délégation des intendants ; et siéger en conseils de guerre, « découverts », sur un siège « égal à celui des Officiers composant le Conseil, mais un peu en retrait du rond des Officiers vis-à-vis du Président » [11]. Puis un nouvel édit d'avril 1716 supprima ces prévôtés, avant qu'une ordonnance du 21 juillet de la même année ne les rétablisse, par « commissions », et devant se conformer aux prescriptions de l'Ordonnance Seignelay du 15 avril 1689 [12]. La grande Ordonnance Choiseul du 25 mars 1765 (Livre XVI. Titre CII. Article MCCLXVIII) confirma la mission des prévôts de la Marine aux conseils de guerre, « debouts & découverts, sans avoir voix délibérative » [13]. Et l'Ordonnance Sartine du 27 septembre 1776 (Titre IV. Article CII) entérina ces dispositions [14].

Même au tribunal de l'intendant, à la « Prévôté de la Marine », le prévôt ne siégeait que s'il était « gradué ». A défaut d'être diplômé en droit, il se contentait d'y rapporter les éléments de son instruction [15].

Mais, outre son acception juridictionnelle qui ne survivra pas plus à la Révolution que la justice prévôtale de la « Maréchaussée de France » [16], la prévôté de la Marine était alors également la police judiciaire des gens de mer astreints au « service du Roi ».

2 - La police des ports et arsenaux du roi

En 1783, la prévôté de la Marine est aussi une « sorte de milice sous les ordres de l'Intendant », composée d'archers qui « arrêtent & conduisent les malfaiteurs soumis à la juridiction de l'Intendant (dont), au surplus, il y en a toujours un certain nombre d'ordonnance dans son hôtel, pour porter ses ordres. Ils ont pour uniforme, habit bleu, parement, doublure, veste & culottes rouges, boutons argentés, chapeau bordé d'argent ; & une bandoulière avec les armes du Roi : ils sont armés d'une épée & d'un mousqueton » [17]. Alors qu'en application de l'Ordonnance de la Marine du 27 septembre 1776 (Titre IV. Article LXXXV), « la Police des Magasins & des Bureaux affectés au cinq Commissaires & au Contrôleur, celle des Bâtimens civils, des Hôpitaux & Bagnes », c'est-à-dire des lieux ou s'exerce sa justice criminelle, appartient à l'intendant. Quand « la Police des Chantiers, & Ateliers de l'Arsenal & des Vaisseaux, & tous autres Bâtimens désarmés dans le Port » (Article LXXXIV) relève du commandant de la Marine, dont l'autorité militaire stricto sensu est exercée palles troupes de Marine placées sous le commandement de cet officier général (chef d'escadre ou lieutenant général des armées navales) [18].

Et, outre les « Gardiens, Suisses, Consignes, Pertuisaniers » et autres « Entretenus » de l'arsenal et du bagne, l'intendant disposait en la prévôté de la Marine d'une police judiciaire capable de l'assister dans toutes ses tâches non financières.

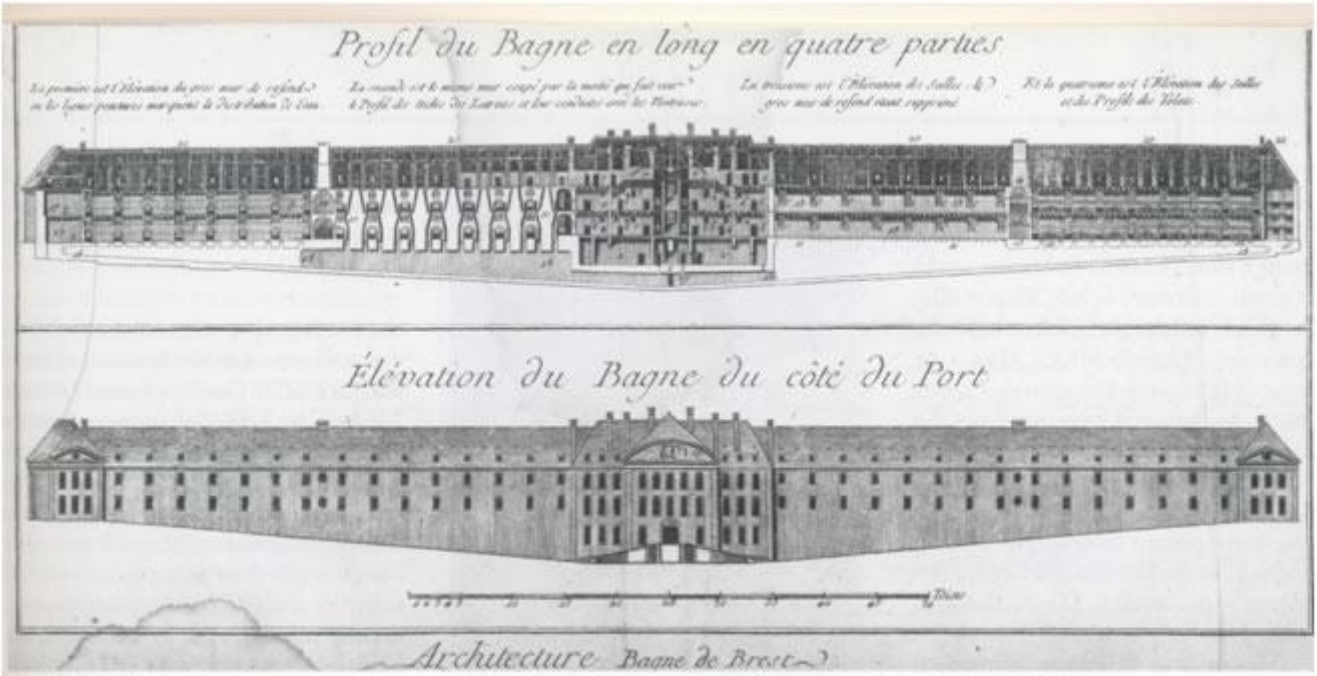
Mais, la prévôté de la Marine avait également d'autres missions à remplir. Elle devait, notamment, répondre aux nombreux signalements de gens dont le pouvoir royal s'efforçait d'empêcher l'embarquement : suspects, condamnés évadés, ou déserteurs [19] ; ainsi qu'aux fréquentes demandes de recherches dans l'intérêt des familles concernant des personnes disparues : souvent matelots ou soldats qui n'étaient pas rentrés chez eux après une campagne [20] . En outre, le 24 avril 1784, le maréchal de Castries, ministre de la Marine, approuvait également la pose de scellés par le greffier de la prévôté de la Marine sur les effets d'un lieutenant de vaisseau mort à Lorient ; laquelle était jugée « conforme aux Ordonnances » [21].

II — La prévôté de la Marine dans la répression judiciaire militaire maritime de la France à la veille de la Révolution

La prévôté de la Marine était présente tout au long de la procédure pénale militaire maritime, de l'enquête préliminaire jusqu'à l'exécution de la sentence. Et l'activité de cette institution lui permit de survivre un an et demi aux autres tribunaux d'exception du royaume, quand la Révolution balaya l'ancien ordre judiciaire au profit d'une justice qui se voulait dorénavant des « Droits de l'Homme ».

1- De l'audience à la potence

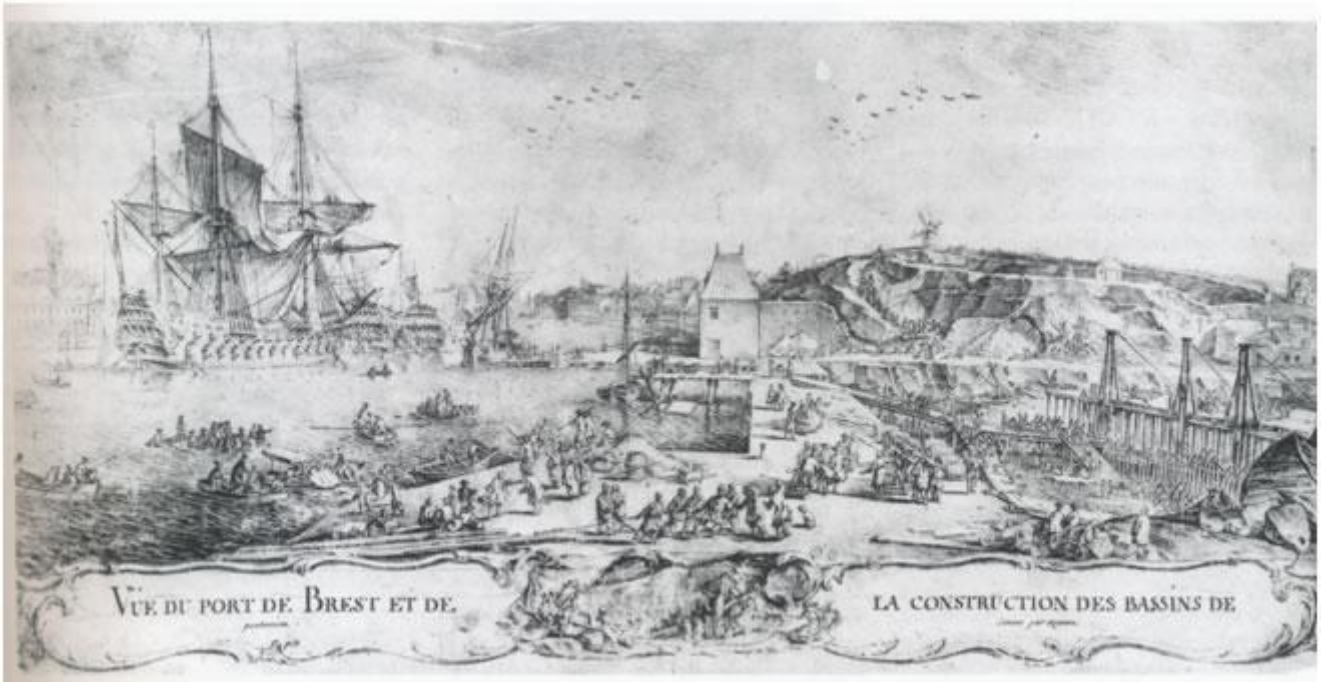
La procédure criminelle actionnée par le tribunal prévôtal de l'intendant, juridiction « ordinaire » de la Marine, respectait les formes prescrites par le Titre XXV de l' Ordonnance de Louis XIV Roy de France & de Navarre Pour les Matières Criminelles Donnée à St Germain en Laye au mois d2loûst 1670 [22] ; alors que celle du conseil de guerre était réglée au Livre XVI, par le Titre CII de l'Ordonnance du Roi Concernant la Marine du 25 mars 1765 [23].



Profil du bagne de Brest. Cette vue montre l'importance de cette institution portuaire (© *Musée national de la Marine. Pb. 33 666*).

La juridiction de la Marine se réunissait lorsque le procureur du roi avait rendu ses conclusions définitives ; à la diligence de l'intendant ou du commandant. « Le procès étant en état, le Major de la Troupe, si c'est un Soldat, le Major ou l'Aide-Major de la Marine, si c'est un Matelot (ou autre civil), en rend compte au Commandant, qui ordonnera sans délai la tenue du Conseil de guerre & nommera les Officiers qui doivent le composer» (Article MCCLVII) [24].

L'instance devait se tenir « les jours ouvrables hors les cas extraordinaires qui ne permettront pas de différer » (Article MCCLVIII), dans la « Chambre du Conseil de Justice de l'Intendance » pour la « Juridiction ordinaire » et soit au même lieu, soit à bord du vaisseau amiral, pour la « Justice de guerre ». Devant la prévôté maritime, aucun procès ne pouvait être «jugé de relevée » (l'après-midi) s'il y était « pris des conclusions à mort, ou s'il échoit une peine de mort naturelle ou civile de Galères ou bannissement à temps ». Conformément à l'Ordonnance de la Marine de 1765, le conseil de guerre siégeait toujours le matin : « Lesdits Juges seront nommés à l'ordre par le Major de la Marine, & seront avertis la veille du jour que devra se tenir le Conseil de guerre, & aucun d'eux ne pourra se dispenser de s'y trouver & d'y opiner ; nonobstant cette nomination des Officiers à l'ordre, le jour de la tenue du Conseil de guerre, le vaisseau amiral tirera à neuf heures du matin un coup de canon d'avertissement, & déploiera son pavillon » (Article MCCLXII). Les membres du conseil de guerre « au moins au nombre de sept, y compris le Président » (Article MCCLXI), n'étaient en effet pas des juristes professionnels, à l'inverse des «Juges & Gradués» qui assistaient l'intendant pour rendre la justice prévôtale. Ce tribunal, conformément à l'Ordonnance criminelle de 1670, devait également être composé de « sept Juges au moins », toutes les sentences militaires maritimes étant rendues en premier et dernier ressort. En principe !



Bagnards employés à la construction des bassins dans le port de Brest (© Musée national de la Marine. Ph. 78 922).

Sur la tenue de l'audience, l'Ordonnance de 1765 était extrêmement précise : « Tous ceux qui devront composer le Conseil de guerre se rendront sur le vaisseau amiral, ou dans le lieu destiné à cet effet dans l'arsenal, à l'heure de la matinée qui aura été prescrite par le Président ;& ils iront avec lui entendre la Messe, qui sera dite avant qu'ils se mettent en place » (Article MCCLXIII). « Lesdits Officiers seront à jeun ; ceux de la Marine seront en grand uniforme, & les Officiers d'Infanterie auront des guêtres & porteront le hausse-col » (Article MCCLXIV). « Au retour de la Messe, le Président du Conseil s'étant assis, les autres Juges prendront leur place alternativement à sa droite & à sa gauche, suivant leur grade & ancienneté » (Article MCCLXV). Protocolairement, l'intendant prenait place « juste après le Président & les Lieutenans Généraux » [25] ; et le prévôt de la Marine s'asseyait près de la table vis-à-vis le Président », ayant apporté « les Ordonnances militaires & les informations » (Article MCCLXVI).

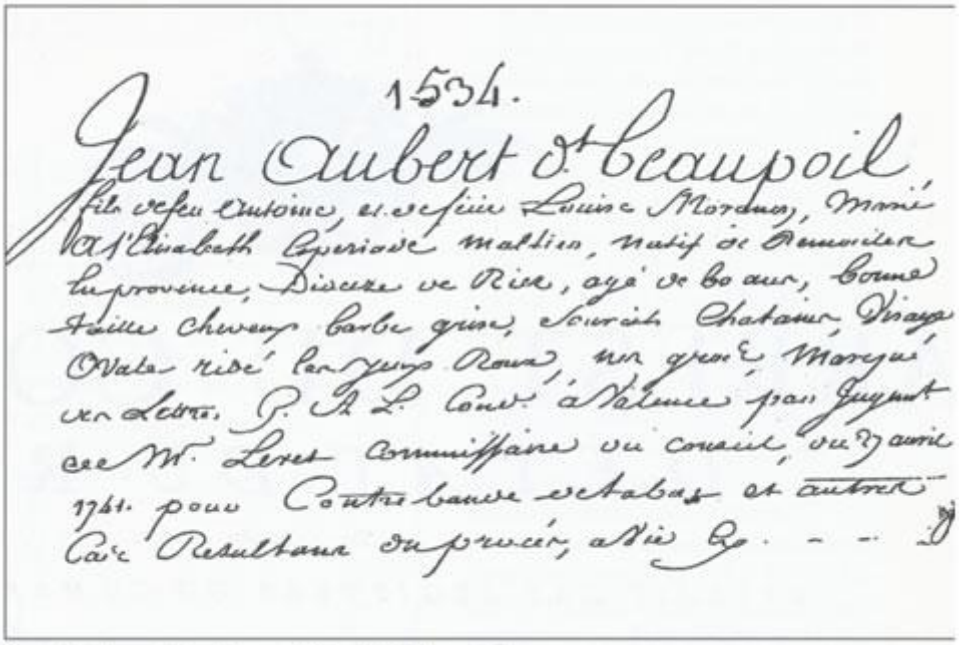
Fers de poncet auxquels était attachés les bagnards dans leur geôle. Extrait de Les prisons d'autrefois *(© Musée national de la Marine. Ph. 163 722).*

L'audience était publique pour les officiers du département, « même des corps militaires étrangers à la Marine » qui pouvaient y assister « debout, chapeau bas & en silence » (Article MCCLXVII). « Les Juges étant assis & couverts, après que le Président aura dit le sujet pour lequel le Conseil de guerre sera assemblé », le prévôt de la Marine faisait la lecture de la requête contenant la plainte, des informations, du récolement, de la confrontation des témoins et des conclusions qu'il était tenu de signer ; ce rapport étant fait « debout & découvert, sans avoir voix délibérative » (Article MCCLXVIII). « Après la visite et la lecture entière du procès, le Président ordonnera que l'accusé soit amené devant l'assemblée, où il le fera asseoir sur une sellette, si les conclusions sont à peines afflictives, sinon l'accusé y comparoîtra debout » (Article MCCLXIX).

Le code pénal maritime en usage, c'est- à-dire les sanctions édictées par l'Ordonnance de 1765, particulièrement au Titre CIII, Des délits & des Peines, complétée le 9 janvier 1781 par certaines dispositions d'une Ordonnance Concernant les Novices-Volontaires-Matelots pour suppléer les Gens de mer classés, prévoyait une gamme étendue de peines plus ou moins sévères : il s'agissait de la « mort naturelle » par pendaison ou fusillade « à défaut d'Exécuteur » (Article MCCLXXXIII), qualifiée

souvent de « dernier supplice » (peine capitale, corporelle, afflictive et infamante), ou de la « mort civile » des galères à perpétuité et du bannissement à perpétuité hors du royaume (peines capitales, afflictives et infamantes) ; ainsi que des galères à temps, de la mise en détention, du bannissement à temps (peines afflictives et infamantes) ; de la flétrissure « à fer chaud » (peine accessoire à la condamnation aux galères), des oreilles coupées (pour évasion du bagne), du fouet ou de la bouline, de la cale, de la suspension par les aisselles, de l'assise sur une barre de cabestan deux boulets aux pieds, et du carcan (peines corporelles et infamantes). L'« amende honorable » était afflictive et infamante, et ne frappait le condamné que dans son seul honneur ; le blâme et l'amende criminelle « prononcée en dernier ressort », n'étaient que des peines infamantes [26] .

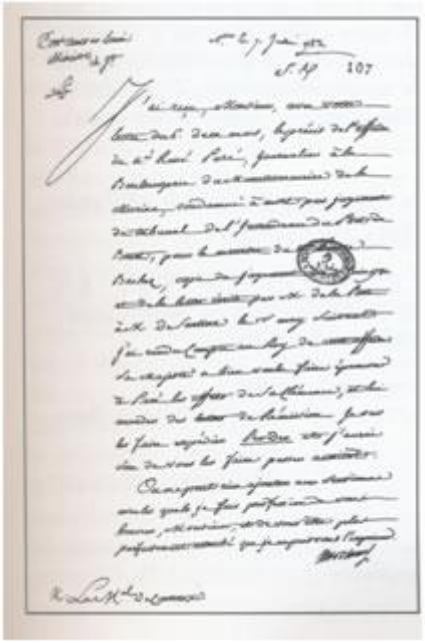
L'Ordonnance de 1765 prévoyait encore le dernier interrogatoire de l'accusé par ses juges, « après lui avoir fait prêter serment de dire vérité » (Article MCCLXX) ; après quoi, il était reconduit en prison. Puis le tribunal ou le conseil de guerre délibérait : « L'accusé étant sorti, le Président prendra les voix pour le jugement de l'accusé : le dernier Juge opinera le premier, & ainsi de suite en remontant jusqu'au Président, qui opinera le dernier » (Article MCCLXXI). «Celui qui opinera, ôtera son chapeau, & dira à voix haute, que trouvant l'accusé convaincu, il le condamne à telle peine ordonnée pour tel crime ; ou, que le jugeant innocent, il le renvoye absous ; ou, si l'affaire lui paroît douteuse faute de preuves, qu'il conclut à un plus amplement informé, l'accusé restant en prison » (Article MCCLXXII). « A mesure que chaque Juge donnera son avis, il l'écrira au bas des conclusions, & signera » (Article MCCLXXIII). Conformément à l'article XII du Titre XXV, Des Sentences, Jugemens eArrêts, de l'Ordonnance criminelle de 1670, la décision étant rendue en dernier ressort, « l'avis le plus doux prévaudra dans les jugemens, si le plus sévère ne l'emporte de deux voix ; & l'avis du Président ne sera compté que pour une voix, de même que celui des autres Juges » (Article MCCLXXIV). « L'Accusé étant jugé, le Major (ou le procureur à la prévôté) fera dresser la Sentence, suivant les modèles imprimés qui lui seront envoyés ; tous les Juges signeront au bas, quand bien même ils auroient été d'avis différent de celui qui aura prévalu ; & il en sera envoyé une expédition au Secrétaire d'État ayant le département de la Marine » (Article MCCLXXV) [27] .


1534.
Jean Aubert dit Beaupoil,
fils de feu Antoine, et de feue Louise Mordan, marié
à Elisabeth Spariose Mattin, natif de Remonier
en Provence, Diocèse de Riez, âgé de 60 ans, bonne
taille cheveux barbe grise, sourcils châtains, visage
ovale ridé les yeux roux, nez grand, marqué
des lettres P. R. L. Condamné à Galères par Jugement
de Mr. Leret Commissaire du Conseil, du 27 avril
1761. pour Contrebande et abus et autres
Cas Resultans du procès, ainsi Qe. - - -

Extrait de la matricule du bagne de Brest (A.M. Brest, 2.07).

Le Prévôt (...) ira ensuite à la prison avec celui qui lui servira de Greffier ; & si l'accusé est renvoyé absous, il le fera mettre en liberté aussitôt que sa Sentence aura été lue » (Article MCCLXXVI). « Si l'accusé est condamné à mort, ou à une peine corporelle, le Prévôt le fera mettre à genoux, pendant que le Greffier lui lira sa Sentence, dans le premier cas on lui donnera aussitôt un Confesseur, & il sera exécuté dans la journée ; dans le second, il restera en prison jusqu'au moment de l'exécution » (Article MCCLXXVII). «Défend sa Majesté aux Commandans de ses ports, d'ordonner ni souffrir, sous

tel prétexte que ce puisse être, qu'il soit sursis à l'exécution d'un jugement du Conseil de guerre, sans ordre exprès de Sa Majesté » (Article MCCLXXVIII) [28]. Et, quand cette disposition de l' Ordonnance Concernant la Marine du 25 mars 1765 était appliquée à la lettre, la très réglée « Justice de guerre » devait s'accomplir rapidement ; dans l'esprit militaire du temps [29] .



Dès lors, les troupes nécessaires sont mises sous les armes et des « piquets » désignés « pour assister à l'exécution » (Article MCCLXXIX). « Si l'exécution se fait sur un bâtiment ou ponton dans l'enceinte du port (pour être vue de tous les bâtiments), les gardes des portes seront redoublées, & il sera détaché du corps qui sera en bataille, des piquets pour être placés de distance en distance sur les quais de l'intérieur du port » (Article MCCLXXX). «Lorsqu'on amènera le criminel sur le lieu de l'exécution, les troupes seront sous les armes, les Officiers à leurs postes, les tambours battront aux champs, & il sera publié un ban à la tête de chaque troupe, portant défenses de crier grâce, sous peine de la vie » (Article MCCLXXXI). Ces mesures particulières de précaution concernaient l'exécution d'un soldat ou d'un marin, et elles étaient conformes aux dispositions des conseils de guerre de l'armée de terre [30]. Elles devaient être allégées en cas d'exécution de peines corporelles non capitales, en particulier sur la personne d'un civil. Par contre, elles étaient renforcées si la mort allait frapper un forçat. En 1839, à Brest, une exécution capitale s'effectuait encore, pour l'exemple, devant tous les bagnards « doublement enchaînés, à genoux, la tête nue », sous les feux croisés d'un bataillon d'infanterie et d'une batterie d'artillerie, « la mèche levée », qui les tenaient « en joue » [31].

Le criminel étant arrivé au centre des Troupes, on le fera mettre à genoux & on lui lira la sentence à haute voix, après quoi on le conduira au lieu du supplice » (Article MCCLXxXII). Là pouvait être recueilli son ultime « testament » [32] . Et, quand l'exécution sera terminée, « les Troupes défileront devant le mort, le régiment ou corps dont sera l'exécuté marchant avant les piquets » (Article MCCLXXXIV).

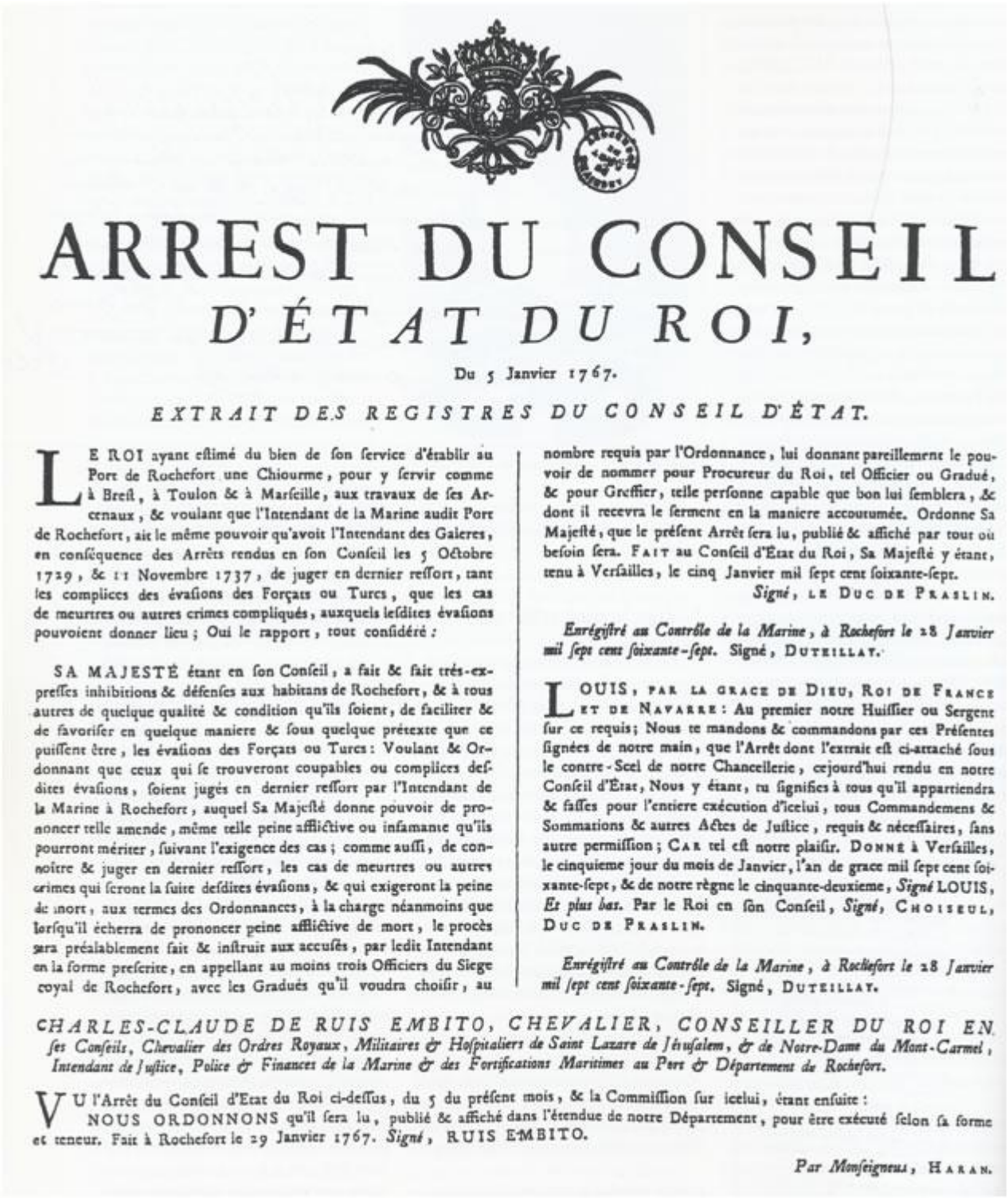
Mais cette justice militaire, apparemment implacable, était-elle vraiment sévère ?

2 - Une justice arbitraire

Faute d'un nombre significatifs de jugements conservés dans les fonds des archives portuaires de la Marine, on ne peut avoir qu'une idée très imparfaite de la sévérité de la justice royale maritime à la fin de l'Ancien Régime [33].

Et, si la délinquance et la criminalité des gens de mer n'étaient pas alors très différentes de celles des autres populations du royaume, hormis les nombreux cas de désertions [34], la répression militaire maritime était vraisemblablement dans la rigueur du temps [35] ; même si le maréchal de Castries, l'éclairé dernier grand ministre de l'ancienne Marine, avait à coeur d'humaniser cette justice d'exception [36].

Pratiquement, ce sont les matricules des bagnes qui, pour les peines des Galères » [37], renseignent le plus exactement sur la criminalité et la répression pratiquées en France jusqu'au milieu du XIXe siècle [38]. Ces volumineux registres manuscrits, soigneusement reliés, à la fois livres d'écrous, fichiers anthropométriques et casiers judiciaires sommaires, dévoilent l'état-civil des forçats, leur signalement, le lieu et (en général) le motif de leur condamnation [39], la durée des peines prévues et leur devenir. Emouvants, laconiques et précis, ils décrivent en peu de lignes beaucoup de misères



ARREST DU CONSEIL D'ÉTAT DU ROI,

Du 5 Janvier 1767.

EXTRAIT DES REGISTRES DU CONSEIL D'ÉTAT.

LE ROI ayant estimé du bien de son service d'établir au Port de Rochefort une Chiourme, pour y servir comme à Brest, à Toulon & à Marseille, aux travaux de ses Arsenaux, & voulant que l'Intendant de la Marine audit Port de Rochefort, ait le même pouvoir qu'avoit l'Intendant des Galeres, en conséquence des Arrêts rendus en son Conseil les 5 Octobre 1729, & 11 Novembre 1737, de juger en dernier ressort, tant les complices des évasions des Forçats ou Turcs, que les cas de meurtres ou autres crimes compliqués, auxquels lesdites évasions pouvoient donner lieu; Oui le rapport, tout considéré:

SA MAJESTÉ étant en son Conseil, a fait & fait très-expresses inhibitions & défenses aux habitans de Rochefort, & à tous autres de quelque qualité & condition qu'ils soient, de faciliter & de favoriser en quelque maniere & sous quelque prétexte que ce puissent être, les évasions des Forçats ou Turcs: Voulant & Ordonnant que ceux qui se trouveront coupables ou complices desdites évasions, soient jugés en dernier ressort par l'Intendant de la Marine à Rochefort, auquel Sa Majesté donne pouvoir de prononcer telle amende, même telle peine afflictive ou infamante qu'ils pourront mériter, suivant l'exigence des cas; comme aussi, de connoître & juger en dernier ressort, les cas de meurtres ou autres crimes qui seront la suite desdites évasions, & qui exigeront la peine de mort, aux termes des Ordonnances, à la charge néanmoins que lorsqu'il écherra de prononcer peine afflictive de mort, le procès sera préalablement fait & instruit aux accusés, par ledit Intendant en la forme prescrite, en appellant au moins trois Officiers du Siege royal de Rochefort, avec les Gradués qu'il voudra choisir, au nombre requis par l'Ordonnance, lui donnant pareillement le pouvoir de nommer pour Procureur du Roi, tel Officier ou Gradué, & pour Greffier, telle personne capable que bon lui semblera, & dont il recevra le serment en la maniere accoutumée. Ordonne Sa Majesté, que le présent Arrêt sera lu, publié & affiché par tout où besoin sera. FAIT au Conseil d'Etat du Roi, Sa Majesté y étant, tenu à Versailles, le cinq Janvier mil sept cent soixante-sept.

Signé, LE DUC DE PRASLIN.

Enrégistré au Contrôle de la Marine, à Rochefort le 28 Janvier mil sept cent soixante-sept. Signé, DUTEILLAY.

LOUIS, PAR LA GRACE DE DIEU, ROI DE FRANCE ET DE NAVARRE: Au premier notre Huissier ou Sergent sur ce requis; Nous te mandons & commandons par ces Présentes signées de notre main, que l'Arrêt dont l'extrait est ci-attaché sous le contre-Scel de notre Chancellerie, cejourd'hui rendu en notre Conseil d'Etat, Nous y étant, tu signifies à tous qu'il appartiendra & fasses pour l'entiere exécution d'icelui, tous Commandemens & Sommations & autres Actes de Justice, requis & nécessaires, sans autre permission; CAR tel est notre plaisir. DONNÉ à Versailles, le cinquieme jour du mois de Janvier, l'an de grace mil sept cent soixante-sept, & de notre règne le cinquante-deuxieme, *Signé* LOUIS, *Et plus bas.* Par le Roi en son Conseil, *Signé*, CHOISEUL, DUC DE PRASLIN.

Enrégistré au Contrôle de la Marine, à Rochefort le 28 Janvier mil sept cent soixante-sept. Signé, DUTEILLAY.

CHARLES-CLAUDE DE RUIS EMBITO, CHEVALIER, CONSEILLER DU ROI EN *ses Conseils, Chevalier des Ordres Royaux, Militaires & Hospitaliers de Saint Lazare de Jérusalem, & de Notre-Dame du Mont-Carmel, Intendant de Justice, Police & Finances de la Marine & des Fortifications Maritimes au Port & Département de Rochefort.*

VU l'Arrêt du Conseil d'Etat du Roi ci-dessus, du 5 du présent mois, & la Commission sur icelui, étant ensuite: NOUS ORDONNONS qu'il sera lu, publié & affiché dans l'étendue de notre Département, pour être exécuté selon sa forme et teneur. Fait à Rochefort le 29 Janvier 1767. *Signé*, RUIS EMBITO.

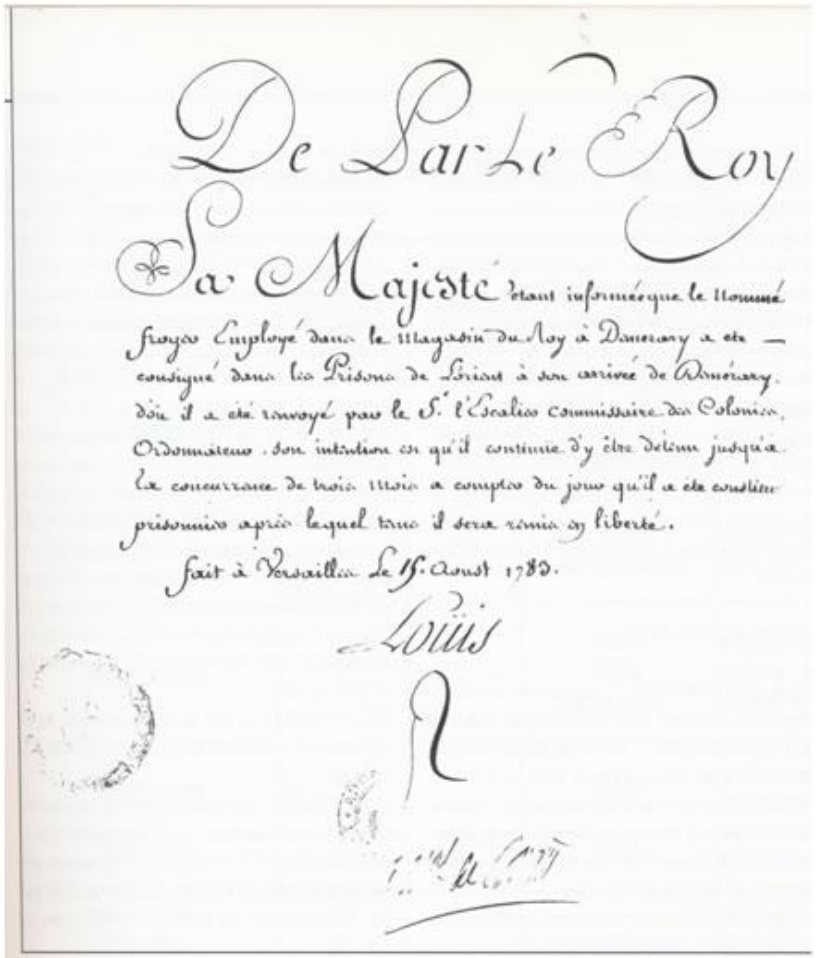
Par Monseigneur, HARAN.

et un univers pénitentiaire impitoyable ; mais dont on s'évadait souvent [40] . Il appartenait alors au prévôt de la Marine de diligenter les recherches sur place et, le cas échéant, de justifier son impuissance à retrouver les bagnards évadés quand tous étaient « portés à secouer leurs chaînes » [41]. Mais le phénomène était ancien et général [42] .

Soumis à l'autorité judiciaire prévôtale de l'intendant de la Marine, en vertu d'une commission particulière [43], les galériens » subissaient une justice souvent cruelle mais sans illusion sur son exemplarité [44] ; qui ne savait ni corriger [45], ni réhabiliter [46], seulement retrancher de la société les sujets dangereux [47] ou même seulement « à risques » [48] qui avaient commis l'erreur de se faire prendre car, « pour un criminel de pris, dix continuaient à narguer la justice » [49] ; et, si les ordonnances criminelles prévoyaient des châtiments tellement rigoureux, outre l'esprit du temps, c'est qu'elles étaient peu appliquées. Hormis « aux Galères ».

Ainsi, à Brest, le tribunal de l'intendant qui savait surseoir à l'exécution d'hommes libres convaincus d'homicides [50], était moins tolérant envers les forçats [51]. Les registres matriculaires du premier port de guerre du royaume offrent en effet un panorama éloquent de l'ensemble des peines « arbitraires » [52] de la justice militaire maritime à l'égard de ses justiciables les plus obscurs [53].

Mais, au cours de la seconde moitié du XVIIIe siècle, cette juridiction pouvait aussi faire preuve d'une certaine mansuétude dans l'intérêt du service des bagnes. Nonobstant les ordonnances qui promettaient le « dernier supplice » aux forçats convaincus de voie de fait contre leurs gardes [54], elle condamnait peu à mort pour de telles violences : « Nous ne comptons depuis 25 ans que six de ces misérables condamnés pour ces sortes d'excès » reconnaissait le prévôt Dejean, de Toulon, en 1790 [55] ; la Marine avait en effet trop besoin de cette main d'oeuvre à bon marché, alors que sa justice ne pouvait plus ignorer l'économie. Et, si une première évasion valait souvent à un bagnard de perdre ses oreilles, les suivantes le voyaient simplement rentrer dans la chaîne avec, au plus, un allongement de sa détention au profit de la société. La peine du « jarret coupé » pour récidive d'évasion [56] n'était également plus appliquée ; qu'aurait valu à la « corvée » de l'arsenal une multitude de forçats infirmes, alors que la Marine ne savait déjà que faire de ses bagnards invalides ou trop âgés [57] ? En réalité, beaucoup de « délits » qui, selon les ordonnances, auraient dû valoir à leurs auteurs le « dernier supplice » ne semblaient plus être punis, au pire [58], que des « Galères à vie » ; cette peine s'exerçant d'ailleurs rarement à perpétuité réelle [59] .


De par le Roy
Sa Majesté étant informée que le Nommé François Employé dans le Magasin du Roy à Dunkerque a été consigné dans les Prisons de Lorient à son arrivée de Dunkerque, d'où il a été renvoyé par le S.r l'Escalier commissaire des Colonies, Ordonnateur, son intention est qu'il continue d'y être détenu jusqu'à la concurrence de trois Mois à compter du jour qu'il a été constitué prisonnier après lequel tems il sera remis en liberté.
Fait à Versailles le 15. Aoust 1783.
Louis

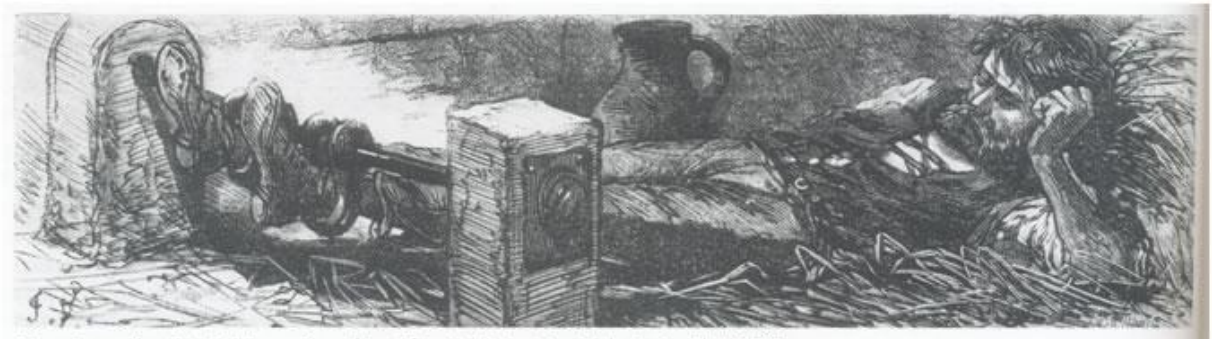
Lettre de cachet contre un employé des colonies (A.M. Lorient, 1. E4 102 f° 204, 15 août 1783).

Le 17 juin 1789, les députés du « Tiers » aux États Généraux réunis depuis le 4 mai décidèrent de se constituer en Assemblée Nationale, par 491 voix contre 50, remplaçant juridiquement « l'absolutisme tempéré par l'inertie » [60] du roi Louis XVI, par une nouvelle souveraineté politiquement révolutionnaire.

La Révolution était dorénavant en marche, légitimée d'abord par la représentation de « la Nation française » (Sieyès) et bientôt légalisée par le roi, le 27 juin, lorsqu'il accepta la fusion des trois classes du royaume. Le 26 août 1789, était adoptée la Déclaration des Droits de l'Homme & du Citoyen qui substituait notamment le principe de légalité à l'ancien arbitraire judiciaire [61]. C'en était fini de l'Ancien Régime juridique.

Conformément aux vœux émis dans beaucoup de cahiers de doléances [62], la Constituante suspendit l'exécution des jugements « prévôtaux », c'est-à-dire prononcés en premier et dernier ressort, par ses lois des 6 et 7 mars 1790 [63].

Oubliée dans les nombreuses critiques contre le « service du Roi » et sa « Justice » [64], défendue en opportunité avec conviction par François-Xavier Dejean [65], et plus singulièrement par l'abbé Grégoire [66], la prévôté maritime obtint, par un décret des 15-20 avril 1790, que « l'Assemblée Nationale déclare que son Décret du 6 mars concernant les Jugemens définitifs émanés des Juridictions prévôtales, ne s'étende point aux Prévôts de la Marine, dont la Juridiction & les fonctions



Prisonnier aux fers. Extrait de Les prisons d'autrefois *(© Musée national de la Marine. Ph. 163 722).*

sont conservées jusqu'à ce que l'Assemblée Nationale en ait ordonné autrement » [67].

Il faut dire que l'on craignait alors un soulèvement général des « chiourmes » dans les bagnes. Et la prévôté de la Marine avait le mérite, aux yeux des citoyens honnêtes, de mettre en œuvre une justice efficace, rapide et gratuite.

Peu onéreuse également pour l'État, à cause de la relative modicité de ses soldes et de la faiblesse de ses effectifs [68] . Le Budget de la Marine pour 1790, au chapitre de ses dépenses fixes, retenait au compte XII : Prévôté de la Marine, une dépense de 94 300 livres, correspondant au coût annuel de fonctionnement de 121 officiers, gradés et archers [69] . C'était moins que les appointements des quatre vice-amiraux de France [70] .

Mais, devant l'insurrection, une loi des 21 et 22 août 1790 instaurera un nouveau « Code pénal des Vaisseaux » ; puis une autre, des 20 septembre et 12 octobre 1791, un « Code pénal des Arsenaux » qui organisera également dans les ports militaires une nouvelle justice plus proche de la réalité du temps : correctionnelle en tribunaux de police maritime, et criminelle, « par Jury », en cours martiales où les anciens prévôts de la Marine devenus « Commissaires-Auditeurs », instrumentaient au ministère public sous l'autorité et la présidence des anciens intendants de la Marine dorénavant appelés « Ordonnateurs » ; lesquels disposaient, en outre, d'une compétence personnelle de « simple Police » qu'ils exerçaient assistés des commissaires auditeurs [71] .

Privée de sa compétence juridictionnelle, la prévôté de la Marine était statutairement intégrée au sein de la nouvelle Gendarmerie Nationale » depuis le 16 février 1791 [72] . Elle était devenue la Gendarmerie maritime » [73]. ❑

Annexe I :
L'organisation et les fonctions judiciaires de la prévôté maritime au 1er janvier 1786

Prévôtés maritimes	Brest Rochefort Toulon	Lorient*	Traitements en livres	Fonctions
Prévôts	1		3000 +1000 (+ pension éventuelle) **	« Instruire & rapporter les procédures criminelles dans les Juridictions de la Marine » (art. 3).***
Assesseurs **** (choisis pour 3 ans)	5	5	600 (juges) 500 (gradués)	« Assister les Intendants dans leurs jugements » (art. 2).
Lieutenants	1	1	1200 1000 (Lorient)	« Suppléer les Prévôts et faire exécuter sous leurs ordres, les jugements rendus par le Conseil de guerre & la Prévôté » (art.5).
Procureurs ou Substitut	1	1	1500 900	« Exercer les poursuites pour requérir les informations & donner des conclusions, tant interlocutoires que définitives, dans la Juridiction ordinaire de la Marine » (art.6).
Greffier ou Commis-greffier	1	1	1400 +1400 700 + 200	« Assurer le greffe prévôtal et tenir la plume dans les procédures & jugemens du Conseil de guerre » (art.7).
Exempts	1	1	800	« Assister à toutes les exécutions sous les ordres des Lieutenants, & exécuter pour la Justice & la Police, ceux qui seront donnés par les Intendants de la Marine & les Prévôts » (art.8).
Brigadiers (plus anciens / capables des archers)	1		660	« Exploiter tous les actes de Justice, dans les lieux où la Juridiction sera établie, & dans les départemens qui en dépendront, ainsi qu'il est prescrit par l'Edit du mois d'avril 1704 » (art.9).
Archers	6	4	600	

* « Dépendans et détachés de la Prévôté de Brest pour l'exercice de la Justice criminelle dans l'Arsenal dudit Port » (art. 1).

** « Se réserve Sa Majesté d'accorder aux Prévôts de la Marine, qui auront vingt ans d'exercice dans ladite charge, des gratifications annuelles ou pensions, relativement à la qualité & à l'ancienneté de de leurs services »(art.3).

*** Et « informations secrètes qu'il leur sera ordonné de faire dans les cas extraordinaires où il n'y aura pas matière à jugement » (art.3).

**** « Gradués (avec) autant qu'il sera possible deux Juges au moins du Bailliage ou autres Juridictions royales » (art.2).

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NOTES ET SOURCES

1. A. BERBOUCHE, « Les institutions de la répression militaire maritime française à la fin de l'Ancien Régime », Comité de Documentation Historique de la Marine 11 avril 1995, p. 143-176 (Service Historique de la Marine). Et « La justice criminelle de la Marine royale sous le règne de Louis XVI », Revue Historique de Droit Français et Etranger, n° 2-1997, p. 215- 236.
2. Quand ils n'étaient pas activés au service du roi, les gens de mer ressortissaient à la justice de l'amiral de France, dont les juges des sièges particuliers d'amirautés connaissaient des crimes et délits commis sur la mer ou en zone littorale, sous appel aux parlements en cas de peines afflictives et infamantes (Ordonnance de Louis XIV Roy de France & de Navarre donnée à Fontainebleau au mois d/loust 1681. Touchant la Marine. Livre I. Titre II. Article X).
3. Par exemple l' Ordonnance du Roi sur les Appointemens des Officiers de la Prévôté de la Marine du 1er Janvier 1786. Article 6 (Archives du Service Historique de la Marine à Lorient, A. M. Lorient, 1. E4 112 folios 82-85). Cette ordonnance qui décrit la prévôté de la Marine à la fin de l'Ancien Régime est synthétisée en annexe I à notre propos.
4. A. M. Lorient, 4° 76, p. 88.
5. Installations concernant « la disposition, la direction & l'exécution des travaux » dévolus dorénavant à l'autorité militaire « d'épée », alors que « la plume » ne disposait plus que de « la recette, la dépense & la comptabilité des deniers & matière » (Recueil Général des Anciennes Lois Françaises depuis Mn 420jusqu à la Révolution de 1789, par M.M. JOURDAN, ISAMBERT et DECRUSY, Paris, 1826, t. 24, p. 141-231 ; p. 164-165). Voir C. ABOUCAYA, Les intendants de la Marine sous lAncien Régime, Gap, Imprimerie Louis Jean, 1958, p. 136 sq. Sur les conseils de guerre dans la Marine, voir A. BERBOUCHE « Un procès politique dans la Marine royale : le conseil de guerre extraordinaire tenu à Lorient en 1783-1784 pour juger la défaite du comte de Grasse à la bataille des Saintes (12 avril 1782) », Neptunia n° 205, 1er trimestre 1997, p. 15-27 (et n° 206, p. 108).
6. Articles 164 et 102 de l'Ordonnance du 27 septembre 1776 (ISAMBERT, op. cit. t. 24, p. 178 et 165).
7. J. PILLET, Prévôts et Archers de la Marine, ouvrage dactylographié, s.l. (Lorient), 1957, p. 8. A. M. Lorient, 4° 231 (complété en annexe par un long extrait de l'étude réalisée en 1952 par M. Mostade sur La Gendarmerie Maritime de Lorient).
8. BOISMELE & RICHEBOURG, Histoire Générale de la Marine, Amsterdam & Paris, MDCCLVIII, Tome Troisième, Titre XIII, p. 158. Ce règlement avait été pris en interprétation d'un précédent du 23 septembre 1673 Sur la tenue du Conseil de guerre de Marine, pour le jugement des crimes qui pourront être commis, spécialement pour la punition des déserteurs (ibidem p. 156).
9. A.M. Lorient, 4° 75, p. 67-69.
10. ISAMBERT, op. cit. t. 20, p. 444. Expédient destiné à procurer quelques « finances » à un trésor royal exsangue.

11. ABOUCAYA, op. cit. p. 44.
12. PILLET, op. cit. p. 16.
13. A. M. Lorient, 4° 76, p. 327.
14. ISAMBERT, op. cit. t. 24, p. 165.
15. ENCYCLOPEDIE METHODIQUE MARINE, Tome Troisième, A Paris, Chez Panckoucke, Librairie..., MDCCLXXXVII, p. 256, au mot « Prévôtal » : « Dans la Marine française le Prévôt n'a pas de juridiction ; il ne siège même pas avec les Juges à moins qu'il ne soit gradué ».
16. Voir lieutenant-colonel MOTUT, « La Maréchaussée (XIIIe siècle - 1791) », Revue Historique des Armées, n° 4-1991, p. 3-14. Voir infra, note 72.
17. ENCYCLOPEDIE, op. cit. Tome Premier. MDCCLXXXIII, p. 66 : « Archers de Marine ».
18. ISAMBERT, op. cit. t. 24, p. 162.
19. Par exemple A. M. Lorient, 1. E4 97 f° 11, 7 janvier 1782 : signalement « du Nommé Pierre Bresse dit Bellerose déserteur du Régiment de Bourgogne Infanterie » qui se serait laissé engagé dans la Marine à Nîmes « le 16 novembre dernier avec une recrue de Novices Matelots qui doit arriver à L'Orient le 27 de ce mois (...). S'il s'y trouve (...) le faire arrêter, m'informer de sa capture et m'adresser son engagement original ; l'intention de ce Ministre (le marquis de Castries, secrétaire d'Etat de la Marine et des Colonies, parle du marquis de Ségur, secrétaire d'Etat à la Guerre) étant de le faire conduire à son premier Corps pour y être jugé contradictoirement, s'il y a lieu, sur sa désertion ».
20. A. M. Lorient, 1. E4 104 f° 43, 1 er février 1784 : demande d'informations « sur représentation à M. le Mal de Castries aux fins de découvrir ce que peut être devenu le Nommé Pierre Martin que l'on expose être parti de Paris il y a 3 ans et demi pour le dépôt de l'Orient en qualité de matelot novice volontaire. Monsieur Clouet (commissaire général de la Marine à Lorient) voudra bien faire vérifier, pour faire part de ce qu'il apprendra de son sort ; ou adressera, s'il y a lieu, son extrait mortuaire. On fait la même demande au sujet du Nommé François-Nicolas Bertier que l'on expose avoir été embarqué en août 1779 sur une Gouélette (sic) du Roy à l'Orient ».
21. A. M. Lorient, 1. E4 104 f° 171, 24 avril 1784.
22. Titre XXV, Des Sentences, Jugemens v Arrêts (ISAMBERT, op. cit. t. 18, p. 415-419).
23. Livre seizième. Du Conseil de Marine ; de la Justice de guerre ; du Conseil de guerre v des Peines. Titre CII. Du Conseil de guerre (A.M. Lorient, 4° 76, p. 323-330).
24. MCCLIX : « Les Officiers qui devront composer le Conseil de guerre, si l'accusé est Officier, seront l'Amiral, le Vice-Amiral, les Lieutenans Généraux & Chefs d'Escadre & les plus anciens Capitaines de Vaisseaux » (A. M. Lorient, 4° 76, p. 325). Ainsi, l'infortuné chevalier Yves-Joseph de Kerguelen Trémarec, capitaine des vaisseaux du roi, fut-il jugé à Brest du 13 janvier au 12 mai 1775 par un conseil de guerre présidé par le comte d'Aché, vice-amiral de France, et composé de deux chefs d'escadres ainsi que de huit capitaines de vaisseaux (A. M. Brest, manuscrit 171). Voir L. du ROSTU, Le dossier Kerguelen, Paris, Ed. Klincksieck, 1992, 160 p. in-12.
25. « Il aura séance avec voix délibérative à tous les Conseils de guerre qui seront tenus, pour juger les crimes et délits commis dans l'enceinte de l'arsenal, & siègera après le Président & les lieutenans Généraux » (Article CLXV du Titre VII, De l'Intendant, de l'Ordonnance du Roi Concernant la Régie e Administration générale e particulière des Ports et Arsenaux de Marine du 27 septembre 1776).
26. D'après le Traité de la Justice criminelle de France... par M. JOUSSE, Conseiller au Présidial d'Orléans. A Paris chez Deburre Père, Librairie... MDCCLXXI, Tome Premier, p. 36. Les peines corporelles dans la Marine seront supprimées par la deuxième République, le 12 mars 1848,

comme « blessant la dignité humaine », et remplacées par « un emprisonnement au cachot, de quatre jours à un mois » (S. ARNOULINS, Etude sur les supplices militaires à travers les siècles..., Paris, C. Carrington, Librairie-Editeur, 1907, p. 221-222. Voir aussi M. DELPEUCH, « Les curiosités de la discipline dans la Marine d'autrefois... », La Revue Maritime, 1902, t. CLIV, p. 1168-1193).

27. Le seul appel possible des sentences judiciaires militaires maritimes étant une intervention royale (à la demande du ministre), l'expédition des pièces du procès à Versailles revêtait une importance considérable ; les autorités portuaires pouvaient en effet, arbitrairement, l'accompagner d'une demande de « Grâce » et, en contradiction formelle avec l'Ordonnance, faire surseoir discrétionnairement à l'exécution d'une sentence de mort en attendant la réponse de la Cour. Jusqu'à ce que cette façon « humaniste » de procéder devienne légale. Voir notre article « L'oeuvre judiciaire pénale du maréchal de Castries, secrétaire d'Etat de la Marine et des Colonies du roi Louis XVI (1780-1787) », Neptunia n° 199, 3ème trimestre 1995, p. 38-54 (et n° 201, p. 68).
28. Pourtant le « Nommé René Paré, Journalier à la Boulangerie du Munitionnaire de la Marine », condamné à mort par jugement du tribunal de l'intendant du port de Brest, pour meurtre, le 3 juin 1780, était encore en vie trois ans plus tard : Le 7 juillet 1783, le garde des Sceaux, Hue de Miromesnil, transmettait à son intention au maréchal de Castries, des « Lettres de Rémission » portant « clémence » du roi (Archives Nationales, Marine, A.N.M. B3 753. Voir l'illustration p.21). Également jugé à la même époque par le conseil de guerre de Brest, le nommé Renaud Renault, soldat de Marine « convaincu d'avoir tué d'un coup de bayonnette, étant en faction, le Nommé Rolland Joachin Roaux dit Bonaventure, Pertuisanier qui conduisait des forçats aux travaux », fut condamné à mort ; mais les juges « trouvant dans les charges et informations de quoi donner lieu à soupçonner que le Pertuisanier tué pouvoît avoir été l'agresseur, avaient sursis à l'exécution jusqu'à ce qu'il plût à Sa Majesté d'expliquer ses intentions et dans l'espérance qu'elle daigneroît faire grâce au coupable » (A. M. Brest, 1. A 65 f 316, 20 octobre 1781). Le roi, « ayant égard aux motifs qui ont déterminé le Conseil », usera de clémence envers Renault et sa peine sera « commuée en celle des Galères pour vingt ans » (ibidem). Un autre criminel aura moins de chance : le 28 janvier 1784, le même garde des Sceaux, Miromesnil, écrira directement au chevalier de Fautras, major de la Marine à Brest : « J'ai reçu, Monsieur, votre lettre du 15 de ce mois, concernant le nommé. Pierre Lissandre, accusé du meurtre commis en la personne du nommé. Simon Fleignes. D'après l'examen que j'ai fait de la procédure, j'ai vu (» avec regret » ajouté) que les circonstances du délit étoffent trop graves pour faire éprouver à cet accusé les effets de la clémence du Roy » (A. M. Brest, 1. A. 99, f°183).
29. En 1790, François-Xavier Dejean, prévôt de la Marine à Toulon déclarait : « On sent dès lors tout le danger qu'il y auroît d'exposer aux lenteurs de la Justice ordinaire un Département dont le bon ordre dépend surtout de la célérité des procédures & de la prompte exécution des Jugemens. Ici, plus qu'ailleurs, on doit saisir cette vérité que plus la peine sera prompte & voisine du délit plus elle sera juste & utile ; que l'impression double & simultanée du délit & de la peine sera d'autant plus durable, qu'il s'écoulera moins de temps entre l'un & l'autre ; & qu'en rompant cette union par le retardement du supplice, la punition comme a dit un Auteur célèbre, seroît moins un châtiment qu'un spectacle » (Justice des Vaisseaux, des Arsenaux év des Chiourmes, par M. Dejean, Prévôt de la Marine à Toulon, A Paris, De l'Imprimerie Nationale, 7 mai 1790, p. 6). François-Xavier Dejean (1739-1818) : avocat au parlement de Paris, puis commis au greffe de la prévôté de la Marine à Toulon en 1755, avant d'en devenir le prévôt en 1765. On lui doit notamment deux mémoires, rédigés en 1790, qui constituent le testament de cette institution judiciaire d'Ancien Régime (A. M. Vincennes, dossier Dejean n°13).

30. Voir GUYOT, Répertoire Universel év Raisonné de Jurisprudence civile, criminelle, canonnique « béniciciale..., A Paris, Chez Panckoucke, MDCCLXXVII, Tome Quatorzième, p. 497 sq : «Conseil de guerre ».
31. P. HENWOOD, Bagnards à Brest, s.l.(Rennes), Editions Ouest-France, collection Université, 1986, p. 132.
32. L'intendant du port de Toulon, Pierre-Victor Malouet, dans ses mémoires, évoque le cas d'un forçat « qui avait donné un coup de couteau à un archer de la garde (et qui) fut condamné à être pendu. Au moment de l'exécution, le prévôt de la Marine et le prêtre qui l'assistait obtinrent de lui un aveu public et détaillé d'un autre assassinat ». Ce « testament de mort » permit de libérer (sur ordre du roi) un innocent du bagne de Toulon (Mémoires de Malouet publiées par son petit-fils le baron Malouet, Paris, E. Plon et Cie, 1874 (p. 210-211). Pierre-Victor Malouet (1740-1814) : nommé le 17 novembre 1781, il fut le dernier intendant de l'ancienne Marine à Toulon, avant d'accomplir une autre glorieuse carrière sous l'Empire. Voir G. RAPHANAUD, Le baron Malouet, ses idées, son oeuvre (1740-1814), Paris, A. Michalon, 1907, 304 p. in-8°. Et contre-amiral DUCASSE, « Pierre-Victor Malouet au service de la Marine », Revue Historique des Armées, n° 4-1990, p. 86-97. Également M.-Y. CREPIN, « Le chant du cygne du condamné : les testaments de mort en Bretagne au XVIIIe siècle », Revue Historique de Droit Français et Etranger, n°4-1992, p. 491-509.
33. Voir notre étude précitée, « Les institutions de la répression militaire maritime à la fin de l'Ancien Régime ».
34. Ibidem et A. CABANTOUS, La vergue et les fers, Paris, Tallandier, 1984, 252 p. in-12.
35. Ainsi, le 23 juin 1784, le tribunal prévôtal de l'intendant de la Marine à Rochefort jugeait un patron de gabarre pour « avoir volé et vendu onze saumons de plomb appartenant au Roi (...) ainsi que des copeaux de bois qui étoffent pour le service de l'équipage », et le condamnait « à servir Sa Majesté comme forçat à perpétuité dans ses Galères, préalablement battu et fustigé par l'Exécuteur de la Haute Justice dans les carrefours du port à l'un desquels il sera flétri d'un fer chaud ayant l'empreinte des lettres GAL » (A.N.M. B3 747, fos 5-8, 1er juillet 1783).
36. Voir notre étude, La justice militaire maritime de la France à lafin de l2lncien Régime, d'après la correspondance administrative du marquis de Castries (de 1780 à 1787), Centre de Recherches Historiques de l'Université de Rennes, 1993, et Services Historiques de la Marine de Vincennes, Brest et Lorient, 1994, t. 1, p. 43-49.
37. Le 27 septembre 1748, une ordonnance royale réunit le corps des Galères à celui de la Marine, transformant les galériens en forçats sur lesquels «l'Intendant de Justice, Police & Finances de la Marine & des Fortifications Maritimes » eut immédiatement police, puis juridiction en «Commission souveraine des Chiourmes ». Par exemple A. M. Toulon, 1. 01 : Mémoire en forme de Règlement servant d'interprétation Pour l'Ordonnance Du Roy du 27 septembre 1748, du 4 avril 1749. Sur la création des bagnes voir A. ZYSBERG, Au Siècle des Lumières, naissance du bagne (in Histoire des Galères, Bagnes et Prisons. XIIIè-XXè siècles), Toulouse, Bibliothèque historique Privat, 1991, p. 169-185 ; et les répertoires numériques de la série « O », Institutions de répression, des S.H.M. de Toulon, Brest et Rochefort. Voir aussi M. VIGIE, « Justice et criminalité au XVIIIe siècle. Le cas de la peine des galères », Histoire, économie et société, 3e trimestre 1985, p. 345-369.
38. Le bagne de Rochefort sera supprimé dès 1852, celui de Brest en 1858, tandis que le bagne de Toulon, réduit à un petit effectif de condamnés âgés, fermera ses portes en 1873 (ZYSBERG, op. cit. p. 228-229).
39. Voir par exemple l'illustration en page 21.

40. « Monseigneur, il est très vrai que les évasions de forçats sont fréquentes ; mais c'est un inconvénient attaché au parti pris de les employer dans le Port, de les disperser dans les divers atteliers et malgré l'abus qui en résulte, il seroît encore plus dangereux et même impossible de tenir constamment à la chaîne cette multitude de malheureux, de les priver d'air, d'exercice et des secours que leur procure la modique paye qui leur est accordée ; il est très probable que la majeure partie de ceux qui s'évadent ne rentrent dans la Société qu'avec tous les vices qui les en avaient fait exclure. Sans talens, sans propriété, obligés même de se cacher de peur d'être repris, que pourroient-ils faire d'utile et d'honnette ? ». Cette belle lettre des autorités portuaires de Toulon, le commandant de Fabry et l'intendant de la Marine Malouet (pour une fois d'accord), était adressée au maréchal de Castries le 23 novembre 1783 (A.N.M. B3 751 f° 193). La même année Jean-Claude Redon de Beaupréau, commissaire général et ordonnateur de la Marine à Rochefort, décrivait au ministre de Castries « les abus qui résultent de la confiance dangereuse qu'on accorde à des forçats auxquels on fait faire le service d'infirmier o (A.N.M. B3 747 fos 47-48, 26 juillet 1783) ! Sur le rendement économique des bagnes voir ZYSBERG, op. cit. p. 175-176.
41. « A Toulon le 22 9bre 1783. Dejean Prévôt de la Marine » (A.N.M. B3 751 f» 194). En 1791, au moment de la réforme du « Code pénal des Arsenaux », le prévôt Dejean devenu « Commissaire Auditeur & Rapporteur des Tribunaux maritime au Port & Arrondissement de Toulon », justifiait que « La Loi des Jurés » ait exclu les forçats de son champ d'application « parce que, séparés du corps social par la flétrissure d'un premier Jugement, il n'étoît pas raisonnable de les admettre à partager avec le Citoyen, un avantage établi pour lui seul » (Instruction Sur les Lois judiciaires & de Police, décrétées pour le Département de la Marine, & sur les devoirs des Jurés maritimes, De l'Imprimerie de Mallard, p. 3).
42. A. M. Toulon, 1 Al 228 f° 158, 20 juin 1776. Et pour Brest, HENWOOD, op. cit. p. 155 sq.
43. Toulon : arrêt du Conseil d'État du Roi du 24 mars 1749. Brest : arrêt du 5 septembre 1749. Rochefort : arrêt du 5 janvier 1767 (Voir l'illustration en page 22).
44. A. N. Brest, 2.0 16 f° 442, matricule 24122 : Jean-Baptiste Capitaine (...) garçon (de) profession cordonnier natif (de) (...) Lorraine (...) marqué des lettres GAL. Condamné la première (fois) à l'âge de 23 ans par Arrêt du Parlement de Paris le 18 8 bre 1777 aux Galères avie pour vol avec effraction et par autre Jugement de la Prévôté de la Marine à Toulon condamné le 7 janvier 1780 à avoir les oreilles coupées pour cause de son évasion de ce Port (le 28 juin 1779) ; ce Forçat ayant été repris il a été condamné de nouveau à être reflétri par autre Jugement prévôtal de la Maréchaussée de Lisle de France, à Paris le 8 février 1781 et à être reconduit en Galère pour crime de vol et pour s'être évadé de Toulon, par la chaîne de Paris à Brest le 15 juin 1781 ». Evadé encore de Brest le 11 janvier 1785, « des travaux dudit port », il y sera ramené le 15 juin 1786. Puis libéré le 14 frimaire 1793 grâce à une « abolition de Peine par le Tribunal Civil de Paris du 14 8bre 1793 ».
45. A. M. Brest, 2.0 16 f» 2, 18102 : « Jean-Baptiste-François Th. Daisnée de Forsan, garçon chirurgien natif de Rennes, condamné à cinq ans de Galères pour vol d'effets avec effraction » par arrêt du Parlement de Paris du 3 juillet 1781. Ce forçat noble (?) « marqué GAL », de 21 ans (en 1781), multirécidiviste de l'évasion condamné à vie (peine commuée par le roi en neuf ans), puis de nouveau « à vie o , s'évadera définitivement (de Brest) « le 27 9bre 1786 ».
46. A. M. Brest, 2.0 16 f° 559, 25958 : «Jacques Guillot (...) garçon sans métier » originaire du Mans, condamné par le Parlement de Paris et marqué GAL » le 16 juin 1778 pour « infraction de ban et violemment soupçonné de vol sur le grand chemin aux Galères à vie » à l'âge de 27 ans. Cet également récidiviste de l'évasion fut en outre condamné A. un an de double chaîne pour avoir été trouvé muni de faux certificats ». Il est déclaré évadé un 27 pluviose (année illisible).

47. A. M. Brest, 2.0 16 f° 2, 17465 : « Cy devant forçat n° 15851 » le nommé «Jean Batut dit Cacalon » (sic), forçat marié mais « sans métier » originaire de Cahors, condamné aux galères « à vie » et « marqué GAL » par arrêt du parlement de Bordeaux le 3 août 1773 (à l'âge de 37 ans) pour « assassinat et différens vols ». Evadé « du Fort » (Rochefort) le 18 mars 1777 ; repris et condamné A. avoir les oreilles coupées » par jugement prévôtal le 28 juillet 1779. Transféré à Brest et finalement « libéré le 2 fructidor an 3 ».
48. A. M. Brest, 2.016 f° 443, 24133 : « Antoine Revient (...) garçon sans métier, natif de la ville et diocèse de Metz (...) marqué des lettres GAL. Condamné à l'âge de 17 ans à S. Bruyère par Jugement prévôtal le 23 9bre 1762 à Soixante-dix ans de Galère pour vie errante et vagabondage, et pour vol avec effraction, et par Jugement de la prévôté de la Marine au Port de Brest en datte du 2 Xbre 1784 condamné aux Galères avie pour Crime d'Evasion du 25 7bre précédent (...). Évadé de Brest le 8 mars 1785 des travaux de ce port, il y a été ramené le 15 juin 1786 par la chaîne de Paris ». Il sera finalement « libéré le 10 8bre 1791 », à 46 ans, après 29 ans de bagne.
49. A. LEBIGRE, La Justice du Roi. La vie judiciaire dans l'ancienne France, Paris, Editions Albin Michel, 1988, p. 158.
50. Voir supra, notes 27-28.
51. A. M. Brest, 2.0 16 f° 171, 19167 : « Jean-Pierre Buffet (...) garçon cuisinier (...) âgé de 23 ans (...) marqué GAL. Condamné à Paris par arrêt du Parlement le 11 8bre 1781 sans dire pourquoi avie » (sic), fut pendu le 1er juin 1786. D'autres détenus étant aussi condamné ce même 1er juin 1786 « à assister au supplice du Nommé Buffet de qui (ils avaient) reçu un faux certificat ». Etaitce là son seul crime ? Trois ans auparavant, un employé des colonies coupable de malversation n'était, lui, condamné qu'à une peine légère, par lettre de cachet (Voir l'illustration en page 23).
52. C'est-à-dire laissées au libre-arbitre discrétionnaire des juges. Voir B. SCHNAPPER, « Les peines arbitraires du XIIIe au XVIIIe siècles. Doctrines savantes et usages français », Revue d'Histoire du Droit, Tjdschri Voor Rechtsgeschiedenis, t. XLI, p. 237-277, p. 237.
53. A. M. Brest, 2.0 16 f° 2, 17466 : « Jean-Baptiste Baron (...) cy devant soldat du Corps Roïal de Marine, Compagnie de Blanques », ancien charpentier natif de Valenciennes, âgé de 23 ans condamné par le conseil de guerre de Brest à 25 ans de « Galères » pour évasion, le 21 septembre 1780 ; évadé à nouveau le 28 février 1781, repris et condamné « au double » (50 ans) par jugement prévôtal de l'intendant, le 13 juillet 1782. Evadé sans être repris dès « le 3 aoust 1782 ».
54. Par exemple : « Tout forçat qui donnera un coup de couteau à un des Comites, Sous-Comites, ou Argousins et Sous-Argousins sera condamné à être pendu soit que le blessé meurt ou non » (art. 89 du Mémoire en forme de Règlement servant d'interprétation Pour l'Ordonnance Du Roy du 27 septembre 1748, du 18 avril 1749 - A.M. Brest, 1 L7 P12 -).
55. Justice des Vaisseaux, des Arsenaux & des Chiourmes... op. cit. p. 7-8.
56. « Cette peine se prononce contre les esclaves fugitifs qui, aux termes de l'article 38 de l'Édit du mois de Mars 1685 & de l'article 32 de l'Édit du mois de Mars 1724,, doivent être condamnés à avoir les oreilles coupées, s'ils sont en fuite pendant un mois & qui en cas de récidive pendant un autre mois, doivent être condamnés à avoir le jarret coupé » GOUSSE, op. cit. p. 56).
57. HENWOOD, op. cit. p. 144-145.
58. Par exemple, A. M. Brest, 2.0 16 f 248, 29396 : « Nicolas Bartard (...) garçon sans métier natif de (...) Metz (...) condamné à l'âge de 24 ans à Metz, par Sentences des Juges des Fermes le 27 février 1768 aux Galères a vie pour faux tabac en récidive et par autre Jugement de la Prévôté de la Marine à Brest du 5 8bre 1773 à faire amende honorable et à être suspendu

pendant une heure à une vergue (vraisemblablement sous les aisselles), vis-à-vis le Magasin général, et réattaché à la chaîne, pour s'être en s'évadant le 19 août de la même année (...) révolté contre les pertuisaniers qui étoffent à sa poursuite, et pour avoir jeté une pierre à un factionnaire ». Il avait eu la sagesse de ne pas utiliser ses fers contre le garde.

59. VIGIE, op. cit., p. 346 et 351 sq.
60. LEBIGRE, op. cit., p. 93.
61. [61] Article VIII : « La Loi ne doit établir que des peines strictement et évidemment nécessaires, et nul ne peut être puni qu'en vertu d'une Loi établie et promulguée antérieurement au délit, et légalement établie ». Depuis lors le principe nullum crimen, nulla poena sine lege s'applique en droit français.
62. Notamment celui des officiers de La Prévôté de la Marine à Brest, du 3 avril 1789, qui réclamait « pour porter dans tous les Jugemens le point de conviction convenable, trois degrés de juridiction » (sic) (A. et P. HENWOOD, Cahiers de Doléances de la ville de Brest, Brest, s.d., Centre de Recherche Bretonne et Celtique, p. 109).
63. PILLET, op. cit. p. 18.
64. Voir, par exemple, J. DANIGO, « Les doléances maritimes des paroisses de la Bretagne méridionales, de la Vilaine à l'Elorn, en 1789 », Mémoires de la Société d'Histoire et d'Archéologie de Bretagne, t. LIV, 1977, p. 135-154.
65. Justice des Vaisseaux, des Arsenaux & des Chiourmes... op. cit. p. 2.
66. Lieutenant-colonel POULHAZAN, « La Gendarmerie maritime de la Révolution à nos jours », Revue Historique des Armées, n° 4-1991, p. 75-88 ; p. 76.
67. H. RICHARD, « La réforme de la justice pénale maritime par l'Assemblée Constituante », 114è Congrès national des Sociétés savantes, Paris 1989, Histoire maritime, p. 7-25 ; p. 15, n. 44.
68. Voir l'annexe I. Si les officiers, gradés et archers de la prévôté de la Marine étaient légèrement mieux traités que leurs homologues de l'Armée (la « Prévôté des Maréchaux de France » dite communément « Maréchaussée »), ses personnels les mieux payés, procureurs et lieutenants d'une part, prévôts d'autre part, étaient au sein de la Marine positionnés respectivement au niveau de rémunération des lieutenants de vaisseaux et au-dessus des quarante plus anciens capitaines de vaisseaux, lesquels ne percevaient en activité de service que 3800 livres annuelles (d'après l'Ordonnance du Roi Pour régler les Appointemens & l'Uniforme des Officiers de la Marine du 1 er janvier 1786, Code Castries, fos 25-36). Les archers, eux, percevaient un salaire annuel correspondant à celui d'un second maître de manœuvre à la haute-paye, ou d'un maître-ouvrier à la basse-paye (50 livres mensuelles), embarqués (d'après le Règlements sur les Etats-Majors & Equipages, dont les Vaisseaux & autres Bâtimens du Roi seront armés, ensemble les Appointemens & Soldes de ceux qui doivent les composer du 1er janvier 1786, Code Castries, f° 320). ``Hors suppléments éventuels liés à la taille des bâtiments ou à l'exercice de responsabilités particulières.
69. Soit : 3 prévôts, 5 lieutenants, 15 assesseurs, 4 procureurs du roi, 5 greffiers, 5 exempts, 4 brigadiers et 80 archers (P. BOITEAU, Etat de la France en 1789, Paris, librairie Guillaumin et Cie, 1889, p. 296).
70. 24 000 livres annuelles chacun, hors pensions, rentes et supplément éventuel de « Traitement à la Mer », au 1er janvier 1787 (G. LACOUR-GAYET, La Marine militaire de la France sous le règne de Louis XVI, Paris. H. Champion, 1905, appendice XIV, p. 663). Mais le nommé Maurice Roger Vonnès, archer de la prévôté maritime de Lorient, destitué le 1er septembre 1782 d'une place « dans laquelle son inconduite le rendoît absolument nul (sic) (...). En considération de ses anciens services (et que) sa maladie (apparemment l'alcoolisme), la misère de la famille dont il est chargé, mettoient dans une situation capable

d'intéresser la pitié (...) sera admis à une demi-solde de 15 livres par mois dont il jouira sur le fonds des Invalides à compter du jour de sa retraite » (A. M. Lorient, 1. E4 102 f) 152 : lettre ministérielle du 16 juillet 1782).

71. RICHARD, op. cit. p. 16-25.
72. La « Prévôté des Maréchaux » avait été supprimée, comme toutes les juridictions d'exception, par les lois des 7-11 septembre 1790. Réorganisée par la loi du 26 décembre 1790, la police militaire de la maréchaussée devint « Gendarmerie Nationale » le 16 février 1791 (voir supra, note 16 et Répertoire du Droit Administratif... sous la direction de M.E. LAFERRIERE, Paris, Paul Dupont, éditeur. 1900, t. XVII, chapitre « Historique de la Gendarmerie », p. 399).
73. POULHAZAN, « La Gendarmerie maritime », op. cit. p. 76.

Chasse-Marée

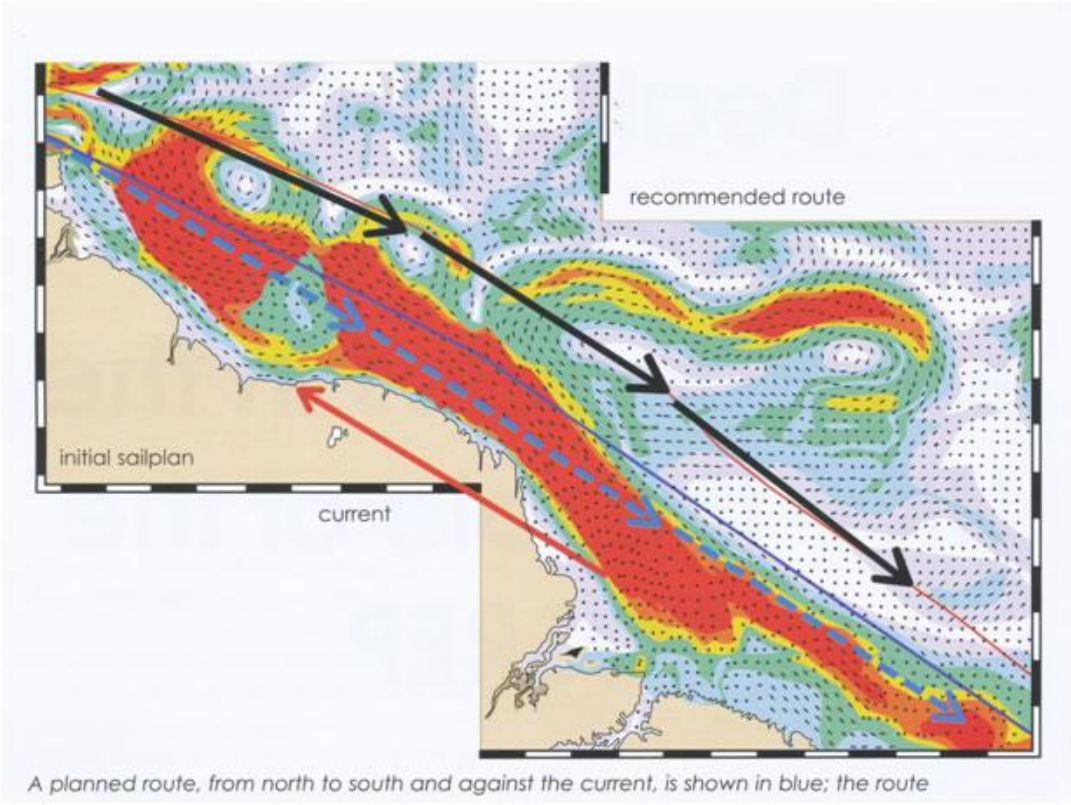
Inséré le 02/09/13 OPEN FORUM Enlevé le 02/10/13

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,



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

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

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

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.

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.

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.

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What about the human suffering caused by pirates?

by Captain Bjorn Haave, individual member, Vice President, IFSMA

Seafarers are not soldiers. They are ordinary people doing a job like any other worker and should have the same right to be protected against criminals at their workplace as any worker ashore.

During the past few years piracy has become a nightmare for seafarers and their families. 'Everybody', including the UN, is working to protect ships from being hijacked, but who is working on the protection of seafarers' health and sanity after they have been released from hostage situations?

We know that seafarers are being treated very badly whilst being held hostage. We also know that they can face a lack of food and water. Seafarers have been killed both while their ship has come under attack and while being held hostage.

This is something that gets little coverage in the news unless it is a pleasure craft that has been taken. We have seen an English couple taken hostage, the brutal murder of Americans and now the taking hostage of a Danish family.

While I have sympathy for the situation these people find themselves in I do not understand why the yachtsmen sailed into an area that is known to be infested with pirates. The people on the yachts were all aware of the piracy problems in the Indian Ocean and Somalian waters, so why on earth did they risk their lives and sail into the area? That is a mystery to me. I am sure that the people themselves have been wondering why they took such a decision. The main thing is that they get a lot of attention from the press. That is good, but when it comes to seafarers who are out there to make a living for themselves and their families, one rarely reads a word about their situation. No one seems to care when it comes to merchant seafarers.

I do think it important to mention that the only way for the criminals to get their money is to take the ships with the crew on board. Without the crew no money will be paid, so it is not the ship and cargo that the criminals are after but the people on board. The funny thing about this is that the insurance companies do not pay a ransom for a crew but for the release of a ship and its cargo.

At the moment more than 800 seafarers from a number of countries are being held hostage by criminals from Somalia - criminals that the world now likes to call pirates. These criminals are nothing but a gang of well armed murdering bandits who take merchant seafarers hostage to make money. They are no better than bank robbers or kidnappers anywhere in the world. Yet international society finds it very difficult to agree on the way in which to solve the problem, and in the meantime more merchant seafarers are being taken hostage.

The worst part of hostage taking, in addition to the risk the seafarers take when they enter such waters, is the uncertainty of their fate after being taken.

I would like to call upon international society to start thinking of the stress and fatigue the seafarers live with and of the seafarers' families and friends. We know that hostages are given no way to communicate with their families, or vice-versa. A hostage situation can last a long time, a period during which neither the seafarer nor the seafarer's family has any idea of the other's general wellbeing. Worse still, the family ashore won't even know if the seafarer is alive.

The world at large seems to carry on as usual. No one seems to care about how important seafarers are and that they are essential for the successful transportation of goods around the world. Even those people who should know better seem to shut their eyes to the seafarers' situation. What do shipowners, insurers and administrations around the world do in the aftermath of such a situation?

Do they follow up with the seafarer to make sure that he or she will be able to take care of themselves and their families? Do they know if the seafarer is going back to sea? Do they really care?

I am concerned that there will be many seafarers and their families who will suffer great mental stress in years to come and I am also sure that nobody will do a thing to help if we cannot get the public's attention regarding this situation. A study carried out in Bulgaria last autumn indicated that as many as 50 per cent of seafarers who had been held hostage did not go back to sea. Some of them felt forced to go back due to their economic situation but one can also expect some to leave the sea in the near future due to the post-traumatic stress caused by the hostage situation they experienced.

This is a very short paper and it is meant to be. It is just an attempt to bring forward what I think is the worst effect of this criminal behaviour called piracy.

My question to you my fellow shipmasters is this: How do we put the spotlight on the human aspect of piracy and hostage taking? How do we work to protect seafarers and their families from the mental stress they suffer in the aftermath of a hostage situation? Can we do anything more than just talk about it?

IFSMA

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"Coasters op kaarten"

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

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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Breaking Down The Cost of MARPOL

subject to MARPOL Annex VI. The Marine Environmental Protection Committee (MEPC) of the International Maritime Organization (IMO) adopted amendments to Annex VI and the nitrogen oxides (NOx) Technical Code, collectively referred to as Annex VI (Revised).

Annex VI (Revised) entered into force on July 1, 2010. These amendments include significant and progressive limits for sulfur oxide (SOx) and NOx emissions from marine engines and for the first time addressed emissions of Particulate Matter (PM).The amendments replaced the SOx Emissions Control Areas (SECA) by introducing the concept of Emission Control Areas (ECA) for SOx, NOx, and PM.

On March 26, 2010, MEPC at its 60th session adopted amendments to MARPOL Annex VI to designate the new North American ECA and at its 62nd session, July 2011, to designate the U.S. Caribbean Sea ECA. The North American ECA entered into force on August 1, 2011 and took full effect on August 1, 2012; the U.S. Caribbean Sea ECA entered into force on January 1, 2013 and shall take full effect on January 1, 2014. The boundaries of the North American and the U.S. Caribbean Sea Annex VI (revised) implements a three-tier structure for new engines.

• Tier I applied to a diesel engine that was installed on a ship constructed on or after January 1, 2000, and prior to January 1, 2011, and represents the 17 g/kWh standard, as stipulated in the existing Annex VI.

• For Tier II, NOx emission levels for a diesel engine installed on a ship constructed on or after January 1, 2011, would be reduced to 14.4 g/kWh.

• For Tier III, NOx emission levels for a diesel engine installed on a ship constructed on or after January 1, 2016, would be reduced to 3.4 g/kWh, when the ship is operating in a designated ECA. Outside a designated ECA, Tier II limits apply.

The Coast Guard has entered into a Memorandum of Understanding (MOU) with the Environmental Protection Agency (EPA) dated June 27, 2011, to set forth the terms by which the USCG and EPA will mutually cooperate in the implementation and enforcement of Annex VI to MARPOL as implemented by the Act to Prevent Pollution from Ships (APPS). The EPA has conducted an analysis of the expected economic impacts of Annex VI (Revised) on the markets for marine diesel engines, ocean-going vessels, and the marine transportation service sector.

The EPA examined the impacts of all components of the markets for marine diesel engines, ocean-going vessels, marine fuels and international marine transportation services. This included the cost of the Clean Air Act emission control program marine diesel engines for U.S. vessel owners and the costs of complying with the emission and fuel sulfur controls for all ships operating in the area proposed by the U.S. Government to be designated as an Emission Control Area (ECA) under MARPOL Annex VI. This analysis looked at two aspects of the economic impacts: estimated social costs and how they are shared across stakeholders, and estimated market impacts in terms of changes in prices and quantities produced for directly affected markets. Annex VI (Revised) requires each party to take all reasonable steps to promote the availability of compliant fuel in its ports and terminals. For ships using low sulfur fuel oil, separate fuel supplies may be carried for use while operating worldwide and within the ECA's. Table 1 below provides the fuel oil sulfur limits referred to in Annex VI

Table 1

Maximum allowable sulfur content
in fuel oil by weight

Global Sulfur Cap	
On and after 1/1/2012	3.50%
On and after 1/1/2020	0.50%
ECA Sulfur Cap	
On and after 8/1/2012	1.00%
On and after 1/1/2015	0.10%

With limited exceptions, including for certain public vessels, all vessels that operate in the North American ECA are required to be in compliance with the Annex VI (Revised) ECA fuel oil sulfur standard. Most vessels under 400 gross tonnage are likely already in compliance with the standard as the majority of these vessels operate using solely distillate fuel oil that meets the Annex VI (Revised) ECA fuel oil sulfur limit.

The total estimated costs in 2030 are approximately $3.1 billion. These costs are expected to accrue initially to the owners and operators of affected vessels when they purchase engines, vessels and fuel. These owners and operators are expected to pass their increased costs on to the entities that purchase international marine transportation services, in the form of higher freight rates. Ultimately, these costs will be borne by the final consumers of goods transported by affected vessels in the form of higher prices for those goods.

Table 2

Summary of Estimated Market Impacts – Medium Speed Tier 3 Engines and Vessels ($2006)

Ship Type	Avg. Propulsion Power	New Vessel Engine Price Impact (New Tier 3 Engine Price Impact)	New Vessel Fuel Switching Equip Equipment Price Impact	New Vessel Total Price Impact
Auto Carrier	9,600	$573,200	$42,300	$615,500
Bulk Carrier	6,400	$483,500	$36,900	$520,400
Container	13,900	$687,800	$49,200	$736,000
General Cargo	5,200	$450,300	$34,900	$475,200
Passenger	23,800	$952,500	$65,400	$1,107,900
Reefer	7,400	$511,000	$38,500	$549,500
Ro-Ro	8,600	$543,800	$40,500	$584,300
Tanker	6,700	$492,800	$37,400	$530,200
Misc.	9,400	$566,800	$41,900	$608,700

With regard to market-level impacts, the EPA estimates that compliance would increase the price of a new vessel by 0.5 to 2%, depending on the vessel type. The price impact on the marine transportation services sector would vary, depending on the route and the amount of time spent in waterways covered by the engine and fuel controls. For example, the EPA estimated that the cost of operating a ship in liner service between Singapore, Seattle, and Los Angeles/Long Beach, which includes about 1,700 NM of operation in waterways covered the EMC, would increase by about 3 percent. For a container ship, this represents a price increase of about $18 per container, assuming the total increase in operating costs is passed on to the purchaser of marine transportation services. The per passenger price of a seven-day Alaska cruise on a vessel operating entirely within waterways covered by the EMC is expected to increase about $7 per day. Ships that spend less time in covered areas would experience relatively smaller increases in their operating costs and the impact on freight prices is expected to be smaller. This analysis of the economic impacts relies on the estimated engineering compliance costs for engines and fuels. These costs include hardware costs for new U.S. vessels, to comply with the Tier 2 and Tier 3 engine standards, and for existing U.S. vessels to comply with the MARPOL Annex VI requirements for existing engines. There are also hardware costs for fuel switching equipment on new and existing U.S. vessels to comply with the 1.0% fuel sulfur limit; the cost analysis assumes that 32% of all vessels require fuel-switching equipment to be added (new vessels) or retrofit (existing vessels). Also included are expected increases in operating costs for U.S. and foreign vessels operating in the U.S. ECA and U.S. internal waters. These increased operating costs include changes in fuel consumption rates and increases in fuel costs. Estimated price impacts for a sample of engine-vessel combinations are set out in for medium speed engines, and Table 3 , for slow speed engines. These are the estimated price impacts associated with the Tier 3 engine standards on a vessel that will switch fuels to comply with the fuel sulphur requirements while operating in the waterways covered by EMC, for all years, beginning in 2016.

Table 3

Summary of Estimated Market Impacts – Slow Speed Tier 3 Engines and Vessels ($2006)

Ship Type	Avg. Propulsion Power	New Vessel Engine Price Impact (New Tier 3 Engine Price Impact)	New Vessel Fuel Switching Equip Equipment Price Impact	New Vessel Total Price Impact
Auto Carrier	11,300	$825,000	$48,000	$873,000
Bulk Carrier	8,400	$672,600	$42,700	$715,300
Container	27,500	$1,533,100	$63,900	$1,597,000
General Cargo	7,700	$632,900	$41,000	$673,900
Passenger	23,600	$1,385,300	$61,200	$1,446,500
Reefer	10,400	$781,000	$46,500	$827,500
RoRo	15,700	$1,042,100	$53,900	$1,096,000
Tanker	9,800	$744,200	$45,300	$789,500
Misc.	4,700	$453,600	$32,000	$485,600

Table 4

Newbuild Vessel Price by Ship Type and Size, Selected Vessels (Millions, $2008)

Vessel Type	Vessel Size Category	Size Range (Mean) (DWT)	Newbuild ($M)
Bulk Carrier	Handy	10,095 - 39,990 (27,593)	$56.00
	Handymax	40,009 - 54,881 (47,616)	$79.00
	Panamax	55,000 - 78,932 (69,691)	$97.00
	Capsize	80,000 - 364,767 (157,804)	$175.00
Container	Feeder	1,000 - 13,966 (9,053)	$38.00
	Intermediate	14,003 - 36,937 (24,775)	$70.00
	Panamax	37,042 - 54,700 (45,104)	$130.00
	Post Panamax	55,238 - 84,900 (67,216)	$165.00
Gas Carrier	Midsize	1,001 - 34,800 (7,048)	$79.70
	LGC	35,760 - 59,421 (50,796)	$37.50
	VLGC	62,510 - 122,079 (77,898)	$207.70
General Cargo	Coastal Small	1,000 - 9,999 (3,789)	$33.00
	Coastal Large	10,000 - 24,912 (15,673)	$43.00
	Handy	25,082 - 37,865 (29,869)	$52.00
	Panamax	41,600 - 49,370 (44,511)	$58.00
Passenger	All	1,000 - 19,189 (6,010)	$478.40
Reefer	All	1,000- 19,126 (6,561)	$17.30
Ro-Ro	All	1,000 - 19,126 (7,819)	$41.20
Tanker	Coastal	1,000 - 23,853 (7,118)	$20.80
	Handymax	25,000 - 39,999 (34,422)	$59.00
	Panamax	40,000 - 75,992 (52,300)	$63.00
	AFR Amax	76,000 - 117,153 (103,112)	$77.00
	Suezmax	121,109 - 167,294 (153,445)	$95.00
	VLCC	180,377 - 319,994 (294,475)	$154.00

The estimated price impacts for Tier 2 vessels is substantially lower, given the technology that will be used to meet the Tier 2 standards is much less expensive. Because the standards do not phase in, the estimated price impacts are the same for all years the Tier 2 standards are required, 2011 through 2015. The EPA maintains that these estimated price impacts for Tier 2 and Tier 3 vessels are relatively small when compared to the price of a new vessel , these range from about $40-$480 million. The program price increases range from about $600,000 - $1.5 million. A price increase of $600,000 to comply with the Tier 3 standards and fuel switching requirements would be an increase of approximately 2% for a $40 million vessel. The largest vessel price increase is for a Tier 3 passenger vessel or about $1.5 million; this is a price increase of less than 1% for a $478 million passenger vessel. The EPA concludes that price increases of this magnitude would be expected to have little, if any, effect on the sales of new vessels, all other economic conditions held constant.

The market impacts for the fuel markets were estimated through the World Oil Refining Logistics and Demand (WORLD) model. The expected price impacts are set out in Table 5. Note that on a mass basis, less distillate than residual fuel is needed to go the same distance (5 % less). The prices in Table 5 are adjusted for this impact. Table 5 shows that the regulatory scheme is expected to result in an increase in the price of marine distillate fuel, about 1.3%. The price of residual fuel is expected to decrease slightly, by less than one percent, due to a reduction in demand for hat fuel. Because of the need to shift from residual fuel to distillate for ships while operating in the waterways covered by the engine and fuel controls (the U.S. ECA and U.S. internal waters), shipowners are expected to see an increase in their total cost of fuel. This increase is because distillate fuel is more expensive than residual fuel. Factoring in the higher energy content of distillate fuel relative to residual fuel, the fuel cost increase would be about 39%.

The EPA used the above estimates of engine, vessel and fuel price impacts to estimate the impacts on the prices of marine transportation services. This analysis is limited to the impacts of increases in

operating costs due to the fuel and emission requirements. Operating costs would increase due to the increase in the price of fuel, the need to switch to fuel with a sulfur content not to exceed 1.0% while operating in the waterways covered by the engine and fuel controls and due to the need to dose the after treatment system to meet the Tier 3 standards.

The total social costs of the coordinated strategy are based on both fixed and variable costs. Fixed costs are a cost to society; they displace other product development activities that may improve the quality or performance of engines and vessels. In this economic impact analysis, fixed costs are accounted for in the year in which they occur, with the fixed costs associated with the Tier 2 engine standards accounted for in 2010 and the fixed costs associated with the Tier 3 engine standards and the fuel sulfur controls for vessels operating on the waterways covered by the coordinated strategy are accounted for in the five-year period beginning prior to their effective dates.

Table 5

Summary of Estimated Market Impacts – Fuel Markets

Fuel	Units	Baseline Price	Control Price	Adjusted for Energy Density	%Change
Distillate	$/ton	$462.00	$468.00	N/A	+1.30%
Residual	$/ton	$322.00	$321.00	N/A	-0.30%
Fuel Switching	$/ton	$322.00	$468.00	$444.00	+38.90%

Table 6

Summary of Impacts of Operational Fuel Cost Increases

Vessel Type	Vessel & Engine Parameters	Operational Price Increase
Container North Pacific Circle Route	36,540 kW 50,814 DWT	$17.53/TEU
Bulk Carrier North Pacific Circle Route	3,825 kW 16,600 DWT	$0.56/ton
Cruise Liner (Alaska)	31,500 kW 226,000 DWT 1,886 passengers	$6.60/per passenger/day

For 2030, the costs are estimated to be about $3.1 billion. It is expected that consumers of the marine transportation services will pay for these costs. Additionally, consumers will pay prices for the goods transported by sea. The EPA estimated annual monetized health benefits of Annex VI (Revised) in 2030 will be between $110 - $270 billion, assuming a 3% discount rate (or between $99 - $240 billion at 7% discount rate). EPA believes by 2030 emission reductions associated with the ECA will annually prevent: between 12,000 - 31,000 premature deaths, about 1,400,000 work days lost: and about 9,600,000 minor restricted-activity days. Furthermore, the EPA predicts the following important ecosystem benefits: NOx, SOx and direct PM reductions reduce deposition in many sensitive ecosystems, improve visibility – especially in Class I federal areas; and reduce ozone damage to many ecosystems throughout the U.S. The bottom line is every consumer will be paying more for the goods used in everyday life and more in taxes for governmental regulatory enforcement in order reduce NOx, SOx, and PM in the atmosphere.

Finally, under the law of unintended consequences, will this cause a consolidation in the industry? The larger carriers could absorb some of these additional costs, potentially squeeze out smaller carriers and then purchases these assets and make up profits on the back end. We are seeing a similar scenario playing out in the airline industry.

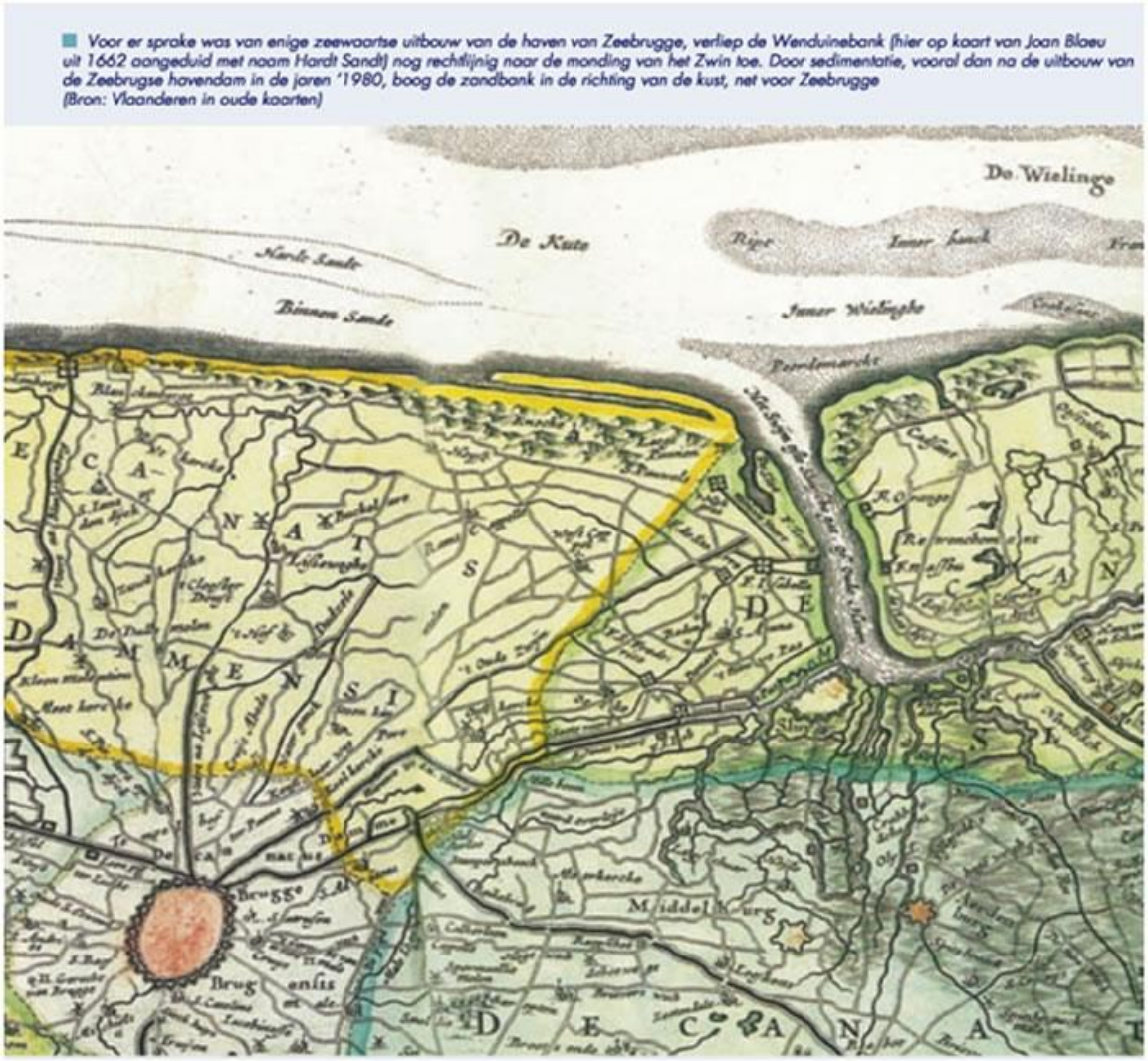
Source: Gary English of Forensic & Investigation Group, LLC.

Inséré le 10/09/13 HISTORIEK HISTORIQUE Enlevé le 10/10/13 WENDUINEBANK

Aan de naam Wenduinebank valt etymologisch niet veel te verklaren. Het is een zandbank gelegen tussen Zeebrugge en Oostende, dus vóór de kustgemeente Wenduine, waarmee alles lijkt gezegd.

Toch schuilt er achter deze zandbank menig verhaal en leert consultatie van oude kaarten dat deze ondiepte ooit anders werd benoemd.

DE ZANDBANK MET EEN ZWAK VOOR BRUGGE...



Voor er sprake was van enige zeewaartse uitbouw van de haven van Zeebrugge, verliep de Wenduinebank (hier op kaart van Joan Blaeu uit 1662 aangeduid met naam Hardt Sandt) nog rechtlijnig naar de monding van het Zwin toe. Door sedimentatie, vooral dan na de uitbouw van de Zeebrugse havendam in de jaren '1980, boog de zandbank in de richting van de kust, net voor Zeebrugge (Bron: Vlaanderen in oude kaarten)

Vandaag strekt de Wenduinebank zich langs de Belgische kust uit van BredeneOostende tot Zeebrugge, op nauwelijks vijf kilometer voorbij de laagwaterlijn en dit over een lengte van ca. 20 km. Vóór de aanleg van de eerste havendam van Zeebrugge (periode 1896-1907) had deze bank nog een doorlopende rechtlijnige structuur. Meer naar het oosten sloot hij aan bij de ondiepte Paardenmarkt, die aan de ingang van het toenmalige Zwin als het ware toegang verschafte tot het historische Brugge (zie kaart Blaeu uit 1596-1662). De bouw van de Zeebrugse buitenhaven halfweg de jaren 1980 stak daar echter bijna letterlijk 'een stokje voor': door die werkzaamheden kwam de

Wenduinebank ten westen van Zeebrugge aan de kustlijn te raken. De doorstroming van zand en slib in noordoostelijke richting werd belemmerd, waardoor een sterke sedimentatie ontstond. Die werd nog in de hand gewerkt door de algemene toename van slibconcentraties in de waterkolom ten gevolge van bagger- en havenwerken en een toegenomen erosie van de holocene kleilagen (Fettweis et al 2009). Door die brede, gekromde verbinding met het strand – vanaf Blankenberge tot Zeebrugge – wordt als het ware een kom of een val gevormd, waarbinnen heel wat zand en slib bezinkt. De Wenduinebank zelf is, met name aan zijn zuidwestzijde, vrij smal (breedte 1 km tussen de 6m-dieptelijnen). Net als zijn "buren", de Stroombank en Nieuwpoortbank, bezit hij een steile zuidflank en een zwakker glooiende noordhelling. Door het voortijdig breken van de golven op de ondiepe ruggen, vooral dan bij laagwater, vertoont het zandige topoppervlak weinig of geen micro-reliëf. Je vindt met andere woorden geen onderwaterduinen of zandgolven bovenop het zand-banklichaam. Deze bankvorm is typisch voor stormgegenereerde getijdebanken, zoals die aan onze kust ca. 7000 jaar geleden zijn ontstaan (Mathys 2009). Al zeker sinds 1801 – wanneer de eerste betrouwbare zeekaarten verschijnen – schommelen de minimale dieptes rond de 3 m LAT (d.i. 3 m onder het laagst mogelijke astronomische laagwater). De bank is dus als vrij stabiel te categoriseren.

Het was op deze zandbank dat het C- Power consortium – dat nu het windpark op de Thorntonbank exploiteert – aanvankelijk windmolens wou plaatsen. Daartoe diende het in 2001 een vergunningsaanvraag in voor de plaatsing van 50 molens voor in totaal 115 megawatt. De domeinconcessie werd verleend, de milieuvergunning echter niet. Hierdoor verplaatste het consortium zijn werkzaamheden naar de Thorntonbank.

OUDERE NAAMGEVING ZINSPEELT OP HARD OPPERVLAK

Als toponiem verschijnt Wenduinebank voor het eerst op de zeekaart "Reconnaissance hydrographique de la Côte Nord de France" uit 1801. Deze kaart is samengesteld door de bekwame Franse hydrograaf en marineofficier Charles-François Beautemps-Beaupré (1776-1854), die ook wel als de grondlegger van de moderne hydrografische kaart wordt beschouwd. Ook op de kaart van Stessels uit 1866 is sprake van de Banc de Wenduine. Op oudere, 17 de eeuwse zeekaarten – o.a. die van Henricus Hondius (1636), vJoan Blaeu (1662) en Johannes van Keulen (1681-84) – heet de ondiepte Hart Sandt.

Net als de oude naam Hart Sandt (voorkomend op 17de eeuwse zeekaarten, zie o.a. hierboven), wijst ook het toponiem gebruikt voor de Wenduinebank op de Kaart der Blankenbergse Visscherij uit 1890, nl. Hindersteens, op de aanwezigheid van hard materiaal (St-Pieterscollege/ St-Jozefhandelsschool).

Dit wijst erop dat het harde, vaste oppervlak door de naamgevers werd ervaren als een typisch kenmerk van deze bank. Interessant is dat ook op de Kaart der Blankerbergse Visscherij – in 1890

getekend door Jozef Ponjaert, leraar aan de visserijschool, die daarvoor steunde op andere kaarten en op informatie van vissers – de Wenduinebank een naam draagt die verwijst naar zijn harde bovenvlak.

Hij heet daar Hindersteens. Met steens wordt aangegeven dat de bank zo hard is als stenen. Voor het eerste deel, hinder, komen verschillende verklaringen in aanmerking, zoals geldt voor de eerder in dit tijdschrift behandelde naam Hinderbanken (zie De Grote Rede 17, 2006, p. 22-23). Misschien moet het begrepen worden in de zin van 'belemmering' en werd de bank zo genoemd omdat hij hinderlijk was voor de visserij.

In die betekenis is het woord hinder inderdaad inheems in de West-Vlaamse dialecten. Hinder kan echter ook 'achteraan gelegen' betekenen, zodat de bank ook genoemd kan zijn naar zijn ligging gezien vanop zee: hij ligt dicht bij de kust, dus achter alle andere hindernissen. Verder heeft zich uit het bijwoord hinder in de Vlaamse visserstaal klaarblijkelijk een zelfstandig naamwoord ontwikkeld met betekenis 'kust, wal'. Dat schrijft althans De Bo bij het trefwoord HINDER in zijn Westvlaamsch Idioticon. Als voorbeeldzinnen geeft hij: "Naar den hinder varen. Van den hinder steekt men af in zee. Zij waren nog drie uren van den hinder als 't onweer losbrak. Den hinder in 't oog krijgen." Mocht Hindersteens met dit woord zijn gevormd, dan drukt de naam uit dat de bank dicht bij de "hinder", d.i. de wal, gelegen is.

De Grote Rede

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Inséré le 12/09/13 BOOKS BOEKEN Enlevé le 12/10/13

New Guide on Collisions

The 'A' rated 170 million GT North P&I Club has just published a new loss prevention guide for watchkeepers on how to avoid collisions at sea. Designed specifically for use on ship's bridges, it focuses on what the Club considers to be the most important 'rules of the road' in the International Regulations for Preventing Collisions at Sea 1972 (COLREGS).

In his foreword to *Collisions: How to Avoid Them,* the Hon Mr Justice Nigel Teare, Admiralty Judge at the Royal Courts of Justice in London, says, 'Despite all the impressive electronic assistance designed

to enable deck officers to avoid collisions, collisions still occur. The answer is, and always has been since radar was first introduced, that the rules of navigation set out in the COLREGS must still be applied by deck officers.

'This short and compact guide therefore has a vital and necessary role. It reminds mariners of the basics of the COLREGS and that they must be kept well in mind and obeyed notwithstanding the profusion of equipment on the modern bridge. That equipment does not avoid collision - it is merely an aid to collision avoidance. What avoids collisions is compliance with the COLREGS,' says Teare.

The guide focuses on the 12 regulations North considers are most often misinterpreted and applied. These are: responsibility, look-outs, safe speed, risk of collision, action to avoid collisions, traffic separation schemes, overtaking, head-on situations, crossing situations, action by give-way vessels, action by stand-on vessels and conduct of vessels in restricted visibility.

According to the Club's head of loss prevention Tony Baker, 'We believe these rules are the key to collision avoidance as we see them breached time and time again when collisions occur. The guide demonstrates how these rules fit together and how the interpreting and applying each of them can be influenced, sometimes wrongly, by the vast mass of information now available from electronic aids to navigation.'

The guide also includes illustrated case studies of recent major collisions, plus fold-out charts for plotting developing situations. 'The case studies and the questions they ask are intended to be the starting point for wide-ranging discussions on all aspects of collision avoidance by bridge teams,' says Baker.

Copies of the guide are being circulated to all North's Members and entered ships. Non-Members can buy them, along with all of North's other loss-prevention publications, from marine bookshops or directly from the Club's distributor Anchorage Press, http://www.anchoragepress.co.uk/.

For further information contact: Andrew Glen or Tony Baker +44 191 232 5221

Inséré le 12/09/13 NIEUWS NOUVELLES Enlevé le 12/10/13

Suez Canal closure risk again in the spotlight

Recent political unrest in Egypt has again raised the spectre of the Suez Canal closing. However, if it were to be suddenly closed tomorrow, it would not be a train smash for the container industry. Vessel schedules could be immediately adjusted to minimise delays. The low probability of the Suez Canal closing has increased due to the threat of terrorist activity from either the ousted Muslim Brotherhood party or one of its rivals for power. However, there are still more than enough container ships to cope with the extra distance of sailing between Asia and Europe around the Cape of Good Hope, with transit times remaining little longer due to their reserves of speed. As calculated in March, average container vessel speed only has to be increased to 22k in each direction to avoid the loss of time, still leaving a safety margin against a top speed of between 24/25k. Vessels sailing from Asia to Northern Europe continued to be run at an average speed of only 19k in June, but on the way back the average decreased slightly from 14.9k to 14.8k, despite the price of fuel in Rotterdam dropping from around $650/tonne to $615/tonne, although it increased to $630/tonne at the beginning of July, and will increase again should the canal be closed. Partially offsetting this fuel saving, the Suez Canal raised its tolls by 2% in May. According to the latest information from the Suez Canal Authority, vessels continue to take between 12-16 hours to transit the artery using its convoy system that requires vessel speeds to be reduced to between 11-16k, depending on ship type and size.

Moreover, the canal remains as popular as ever; in fact, more so now that additional vessels between Asia and the East Coast of North America are being routed via Suez instead of Panama

(since May). Although the total number of container vessels transiting the canal in the first three months of the year reduced by 6.7% compared to the sameperiod last year, down to 1,479, their average size increased by 0.6%, up to 121,522 net tons. Northbound containerised cargo reduced by 0.5%, down to 48.5 million tons, whereas southbound cargo fell by a higher 2.4%, down to 47,381 tons, which was surprisingly well balanced bearing in mind Europe's chronic trade imbalance with Asia (measured in teu). To help put this into perspective, two-way trade between Asia and Europe reached a massive 20.1 million teu last year, compared to 5.2 million teu to/from the Indian Subcontinent/Middle East, and 688,000 teu to/from Australasia/Oceania. As shown in the table below, it is still possible for a schedule deploying 13,100 teu vessels travelling at 22k in each direction between Asia and Northern Europe to deviate around the Cape in approximately the same time as via Suez at current speeds (averaging 19.1k westbound and 14.8k eastbound). However, after taking into account the saving made by avoiding Suez transits, shippers would have to pay an extra westbound and eastbound deviation surcharge of around $58/teu and $222/teu respectively (assuming IFO fuel price of $630/ton), although ocean carriers would probably want to distribute this more evenly. In the case of a 10,000 teu vessel, the extra cost would be $66/teu and $248/teu respectively (Both very approximate calculations ignore the extra cost of diesel, and savings made by avoiding anti-piracy convoys through the Gulf of Oman. Schedules operating from the Far East to Mediterranean would be more difficult to maintain due to having to enter the Mediterranean via the strait of Gibraltar instead of Suez. However, assuming port rotations were adjusted accordingly, and some transhipment, services could still be maintained via the Cape with the same number of vessels. As shown in the table below, 8,000 teu vessels would incur a westbound and eastbound deviation surcharge of approximately $137/teu and $339/teu respectively, but, here again, ocean carriers would probably want to distribute this more evenly. The further complication of replacing the capacity provided by vessels stopping off in the Mediterranean en route from the Far East to Northern Europe remains, but direct services still currently have enough spare capacity for this. The maintenance of schedules between the Indian Subcontinent/Middle East and Europe would also still have to be dealt with as explained previously. **Dewry's View** The Suez canal is a key component in Asia-Europe container trade, and is becoming more important for Asia-US East Coast trade, too. If it were to be suddenly closed tomorrow, container vessel schedules between Asia and Europe could be immediately adjusted to minimise delays by simply increasing speed to 22k in each direction. Shippers would have to pay a hefty surcharge to cover the cost of deviating around the Cape of Good Hope, however. **Source: Drewry Maritime Research**

Inséré le 14/09/13 Dossier Enlevé le 14/10/13

Fuel savings – high as a kite

In order to stay competitive in a challenging market and to meet the increasing number of national and international regulations with regards to emission reduction, more and more shipping companies are searching for effective measures to reduce their fuel oil consumption.

Amongst the numerous options available on the market is a form of propulsion support that has been effectively used in the shipping industry for centuries – wind power.

Reederei Wessels was the first to implement the kite propulsion system

Although crossing the oceans under sails is a long outdated method of transport, SkySails, a Hamburg-based company specialising in the research and development of auxiliary wind power propulsion support systems and vessel performance management, has developed a towing kite to be deployed on modern oceangoing commercial cargo vessels.

The Hamburg-based company equipped the first vessel, Reederei Wessel's MV Michael, with a first generation SkySails system at the end of 2007. Since then the propulsion support solution has been tested under real-life conditions, the results of which have led to further developments in the technology.

At the moment, SkySails is finalising the product development for SkySails Generation III, which features a towing kite of 400m2 capable of creating tractive forces of up to 16 tons.

The first system of the pre-series will be installed on MV Aghia Marina, owned by the Greek shipping company Anbros Maritime and under long-term contract with US charterer Cargill Ocean Transportation.

With its continuously evolving towing kite solution, SkySails aims to provide renewable energy propulsion support, while at the same time reducing both fuel oil consumption and greenhouse gas emissions (GHG).

According to the company's own field studies, the potential cost savings are substantial; the company states that at a price of US$ 0.06/kw, 1 kwh of SkySails power costs half that of a kw produced by the main engine.

On the environmental side, the International Maritime Organisation (IMO) has published estimates suggesting that towing kite technology has enormous potential to reduce greenhouse gas emissions, by up to 100 million tons every year.

The SkySails propulsion support system consists of three main components: a towing kite with a rope, a launch and recovery system, and a control system for automated operation.

The solution is controlled through a software-based system, which the company installs on a control panel on the bridge.

In addition, although it might seem absurd to think that the handling of the kite should require use of the satellite communications system, modern communication technology nevertheless plays an important role as the availability of live weather data is essential for the effective deployment of wind propulsion systems.

In order to maximise the effectiveness of the kite, live weather data obtained via satellite is needed to adapt the voyage planning aspect of the system in cooperation with staff onshore during the voyage, according to changes in the weather situation.

Real-time information on vessel performance

In order to support shipping companies in efficiently saving fuel oil consumption and sustainably reducing their vessels' greenhouse gas emissions – in short, to improve the vessels' operational efficiency – SkySails has developed the SkySails Performance Monitor.

The software-based decision support system automatically provides shipping companies' head offices, and the crew on board, with real-time information on vessel performance data.

In addition, it combines this real-time vessel performance data with additional economic information and offers practical recommendations to the officers on board.

The solution features a monitoring device, which is installed on the ship's bridge.

This display provides the captain with a variety of information on vessel performance, such as the actual ship speed (in knots), the actual fuel consumption (in kg/nm), a graph that visualises actual ship speed and actual fuel consumption over the past 60 min, the optimal ship speed (in knots), the actual fuel consumption rate (in t/ day) and the fuel consumption over the last 24 hours (in tons).

The suggested optimal ship speed is calculated on the basis of the prevailing conditions, which are continuously compiled and computed in real-time. In addition, the calculation takes into account other essential information, such as bunker price, operating costs and charter rates, which are fed into the system by the on-shore staff.

The display offers a range of nautical data to the master, such as position and speed of the vessel, or the weather situation with regards to wind and waves. The SkySails Performance Monitor can also be customised according to the user's specific needs, to collect additional information such as rudder position or torque, as well as data from the main engine and the generators.

The SkySails Performance Monitor display is divided into three sections, of which the main section contains all relevant parameters for monitoring the fuel oil consumption. Data is collected in short, ten-minute intervals.

The recommended economical speed is displayed as a green line in the 'Ship Speed' chart, whereas the speed curve of the last 60 minutes is shown as a black line.

All of the collected and compiled data is automatically sent to a specified recipient onshore once per day, for example the shipping company's head office.

The solution also includes the SkySails Data Management & Analytics service, which automatically creates an end of voyage report containing all collected data. This report is sent via e-mail to the shipping company's head office at the end of each voyage.

This compiled data can be used for a number of purposes, such as to analyse and optimise ship operations through comparison with other vessels in the same fleet.

Benefits

The implementation of the SkySails Performance Monitor aims to deliver a number of advantages for shipping companies. The company promises not only significant fuel savings, but also substantially reduced greenhouse gas emissions.

In addition, the software systems can be used to provide data monitoring and analyses that can form the basis for the implementation of the Ship Energy Efficiency Management Plan (SEEMP), which is one of the mandatory measures adopted by the IMO in 2011 to reduce the emission of greenhouse gases that stem from international shipping.

It is hoped that the decision support system will provide greater transparency of the ship's performance through the compilation and computation of a large amount of performance relevant information.

In addition, SkySails strives to offer both ad hoc decision support, for ship owners, operators and crew, and the basis for retrospective performance analyses that can detect room for improvement and optimisation.

Apart from the implementation of a fleet-wide, systematic fuel-saving approach, shipping companies can also use Performance Monitor data in order to determine what corrective actions are suitable and to assess if these were taken effectively.

In addition, all information needed for the preparation of the voyage report is automatically compiled and communicated to shore, which should decrease the additional workload on crews created by regulatory demands.

The information from the monitoring software can help to increase awareness among crew and shipping company employees with regards to the optimisation of ship operations and fuel efficiency improvement, as well as emission reduction.

First users – Reederei Wessels

German shipping company, Reederei Wessels is continuously on the lookout for efficiency improvements and has also looked into a variety of solutions to optimise its ship operations.

Apart from using special paint for the underwater part of the vessel or nozzles that improve the vessel movement during the voyage, Reederei Wessels was the first shipping company worldwide to test the SkySails towing kite propulsion support.

As early as 2007, Reederei Wessels introduced the use of a 160 m2 kite on its MV Michael, a geared 3600 dwt multi-purpose vessel, in cooperation with SkySails.

A comprehensive testing period was completed successfully in 2009, and led to the installation of the SkySails SKS160 Kite System on other new buildings, such as the MV Theseus, MV Telamon and MV Peleus.

Reederei Wessels says it is satisfied both with the results of the towing kite implementation and the daily handling and maintenance of the system.

“We are proud to say,” says Arno de Groot, IT manager at Reederei Wessels, “that we are the first shipping company who is using this kind of technology.”

“The positive results of the MV Michael A were the reason that Reederei Wessels decided to install the technology on further ships. Of course, one of the progresive effects of this sort of propulsion support is the emission reduction of our vessels. Green shipping is something that is very important for Reederei Wessels.”

The implementation of the towing kite propulsion support technology has led to a significant reduction of fuel oil consumption across the participating vessels, with Reederei Wessels witnessing a saving of 10 to 15 per cent on the MV Michael alone.

In addition to the towing kite system, Reederei Wessels has also implemented the SkySails Fuel Performance Monitor, which had been developed as a result of the companies’ joint SkySails SKS160 towing kite experience.

“There were several reasons why we chose to implement the SkySails Fuel Performance Monitor,” explains Mr de Groot.

“One of our key drivers was that we wanted to obtain valuable assistance of the human element. We also wanted to sensitise the ship’s officers regarding the continuously rising fuel oil costs.”

With the installation of the software solution being scheduled and executed during two days of general cargo operation, no extra time needed to be spent on the implementation. To simplify the process further crew were also trained on the use of the Fuel Performance Monitor within that time frame.

Reederei Wessels says it is pleased with the overall smoothness and simplicity of the implementation process, though for further reference or in order to clarify questions a detailed manual is available and SkySails has set up a 24-hour helpline for support.

There are a number of hardware components and additional prerequisites required for the implementation. For example, vessels using the fuel monitoring system need to be equipped with a fuel computer as well as a flow meter and sensors. A further prerequisite is adequate internet connectivity. The satellite communication system needs to be able to transfer large attachments of up to 60 kb. In order to cater for all necessities, Reederei Wessels uses both Inmarsat FleetBroadband and Fleet33 as satellite communication devices.

Data usage

Reederei Wessels is satisfied with the system and the way it is operated via a display on the bridge indicating a number of operating parameters, including vessel speed, fuel oil consumption and additional navigational data, remarks Mr de Groot.

The shipping company is also benefiting from the Fuel Performance Monitor recommendations for economically optimised ship operations.

“The core function of the SkySails Performance Monitor is to calculate the ship's efficiency, from data containing a number of different parameters,” notes Mr de Groot.

“We are pleased to have deployed a software system that enables us to optimise our vessel’s routes effectively.”

“The performance monitoring device records the amount of fuel oil consumed during a voyage and matches this with the conditions under which the consumption took place, such as speed, current and wave height. This information is very valuable for the master.”In addition to optimised routes, the SkySails Performance Monitor calculates the so-called profit speed.

“This is a commercial aspect,” explains Mr de Groot.“The calculation takes into account the vessel speed, the route and the estimated arrival time at the destination port. According to this information, the vessel's earnings are calculated. The master can read off the display if a speed reduction would save costs and make his decisions economically.”

The SkySails software solution also supports Reederei Wessel’s reporting system by providing a set of standard forms for voyage and position reports for the ship operator. This, says Mr de Groot, has notably simplified the data collection process for the crew on board.

In addition to standard forms, users can create individual reporting forms according to their specifications. Reederei Wessels has made use of this opportunity and created individual reporting forms for the fuel oil consumption and position reports, which are sent to the shipping company’s broker, Arkon Shipping.

In addition, explains Mr de Groot, more detailed reports with all available parameters are sent to the owner at regular intervals.

Aside from these operational benefits, the software implementation has also benefitted the crew onboard the Reederei Wessels ships, says Mr de Groot.

“We have had a very positive reaction from our crew,” he says. “Especially the fact that less manual input is required is very appreciated.”

“This saves time and provides good additional decision support. According to the voyage parameters the system evaluates if the earnings are higher when going faster or slower and makes recommendations accordingly.”

Mr de Groot points out that the included one-off training on the system upon installation has been sufficient for the crew. New members of the seagoing staff are henceforth instructed by the master of the respective vessel.

Reederei Wessels, says Mr de Groot, is also satisfied with the SkySails support department, which assists the customers whenever necessary.

“The support hotline is available 24h a day,” explains Mr de Groot. “The support collaboration is excellent.”

Having been the first to adopt this technology, Reederei Wessels says it has worked on modifying and updating the Performance Monitor software in conjunction with SkySails.

“Close contact to the developers,” explained Mr de Groot, “made it easy for us to improve the system to the company’s requirements.”

“We have changed to a software solution so that the master has now the possibility to enter the density at 15°C (kg/m3), for example 991.0 when using Fuel RME180. The individual bunkered quality is considered.”

Since the implementation of performance monitoring on the first vessels, Reederei Wessels has closely monitored the financial benefits of the system, and field studies on the MV Theseus have led to interesting results with regards to the cost-saving potential.

Over a test period of 152 days, the vessel was able to achieve cost savings of €49,100, compared to the regular fuel costs of €348,100. This equals 14 per cent, or cost savings per calendar day of €323.

BBC Chartering

German multipurpose and heavy lift ship operator, BBC Chartering, had been following the development of the SkySails technology for some years before adding a 9,821 dwt multipurpose ship fitted with an auxiliary wind propulsion system by SkySails to its fleet in 2011.

“As a consequence of Beluga Shipping’s demise in 2011,” says Raymond Fisch, senior vice president, BBC Chartering, “we had the chance to integrate the MV BBC SkySails and market it as part of our vessel portfolio.”

In conjunction with the onboard kite system, a software application is used to monitor fuel performance

“This allowed us to test the technology and experience its application.”

BBC Chartering, says Mr Fisch, is satisfied with the comparatively small amount of additional effort required for daily handling and maintenance.

The towing kite system is fully automated, he says, and after training the existing crew can operate the system without additional support.

However, as Mr Fisch points out, the operation of the system onboard the vessel is only one part of the equation.

“Our efforts,” he notes, “push also at improving the collaboration and communication between ship-owner, crewing partner, operator and commercial management, so each party perceives the benefit of using the propulsion support and is hopefully motivated to support the kite-launching when this makes sense.”

The BBC Chartering vessel uses the towing kite’s auxiliary propulsion support whenever the wind conditions allow.

BBC Chartering is anticipating a significant reduction in fuel oil consumption through the implementation of the towing kite solution.

“We are expecting a reduction of 10-15 per cent, once the system is in full operation,” explains Mr Fisch.

“If the weather conditions are favourable, we expect this to contribute even up to 2,000 kW engine load relief. This technology not only helps us save on fuel oil costs, but also supports our environmental policy with regards to emission reduction.”

BBC Chartering took over a SkySails-equipped ship following the demise of Beluga Shipping in 2011

As the current system is being upgraded by SkySails, the chartering company is looking forward to testing the effects of these changes in the future. Although BBC Chartering is anticipating a substantial benefit from the upgrade of the technology, notes Mr Fisch, there is currently not sufficient data to confirm all numbers.

Should the outcome of a test period be positive, BBC Chartering does not rule out implementing the towing kite technology on further vessels. However, Mr Fisch notes that wind propulsion is only one of numerous opportunities to increase energy efficiency in the shipping industry.

“We regard wind as one of these opportunities,” he says, “and expect that intelligent solutions will play a role in supporting future ship propulsion.”

“As a commercial operator of a MPV/ HL fleet we have an interest to charter in fuel efficient and modern tonnage from vessel owners that apply ‘forward thinking’ technology.”

Changing attitudes

In addition to testing the benefits of the towing kite propulsion support, BBC Chartering has also embarked on the implementation of the SkySails Fuel Performance Monitor.

Now that the technical manager of the vessels has installed the required hardware, the chartering company is expecting information generated by the system to be put to work. The objective, says Mr Fisch, is to integrate the relevant data generated by the Fuel Performance Monitor system into the company’s operating procedures.

The main driver for the chartering company to install this new software was to create a behavioural effect through visible performance monitoring.

“As we can only improve what we can measure,” says Mr Fisch, “this tool offers an interesting means of communicating and managing vessel performance, especially regarding fuel oil consumption and carbon emissions.”

The installation of the required hardware was performed without complication during port operations. However, Mr Fisch explains that the hardware installation is the smallest challenge.

The core challenge, he says, is to put the system to use successfully and integrate the software and its results into the vessel management process, rather than following a mere hardware oriented installation process.

Although BBC Chartering is keen on fully utilising the Fuel Performance Monitor, the chartering company takes a realistic view in terms of when it expects the system to yield the first results.

“We simply don’t now know how long it will take to put the system to work effectively so that each party involved can take away expected benefits,” notes Mr Fisch.

Seagoing staff on the BBC vessel have reacted positively to the implementation of the new technology.

Mr Fisch recalls that the initial interest of crew during training and handling exercises was positive. However, he also points out that, from his commercial point of view, the Fuel Performance Monitor needs to attract the attention of all parties involved.

Only then, he says, can the company avail itself of the full potential of the system and optimise operations successfully.

BBC Chartering, although so far pleased with the outcome of the SkySails system, is still in the process of customising and adapting the solution to company specific requirements.

“We are still working on specifying the data requirements, such as for voyage and noon reports,” explains Mr Fisch.

“We aim at using the given features as much as possible, in order to minimise the amount of work put into the modification of the software.”

“As it looks today the system possess the flexibility to be used without having to change the software fundamentally. Certainly we will know more once the process of using the data has been defined and fine-tuned.”

DigitalShip

Inséré le 16/09/13 NIEUWS NOUVELLES Enlevé le 16/10/13

Delayed deliveries come to the aid of a beleaguered market

On their own, the delivery of the glut of tankers ordered around 2008, before the current crisis, would have been enough to pressure owners’ earnings, but in today’s environment of falling oil demand growth and a weak economic outlook, the pinch has become a squeeze.

However, a breath of fresh air for tanker owners, has been the slower than expected tanker deliveries this year.

The year-to-date (end of October) slippage rate is about 20%, much higher than the traditional level of around 5%. This has been influenced by shipowners employing a variety of measures to delay deliveries. Tactics include outright cancellations, foregoing options, taking delivery of a different vessel class, or inspection delays, said McQuilling Services in a recent report.

The impact of these actions is evident. At this point in the year, we would have anticipated that about 80%, or 190 ships out of 228 would have delivered from yards. However, through October the number of tankers delivered was 151.

Additional support to the fleet balance has come from an elevated deletion profile. Year-to-date we would have expected that 55 of our forecast 66 vessels would have been demolished but this number currently stands at 64. Furthermore, recently, our proprietary data showed that three additional VLCCs had been sold to Pakistani breakers for demolition, as market conditions weigh on owners, McQuilling said.

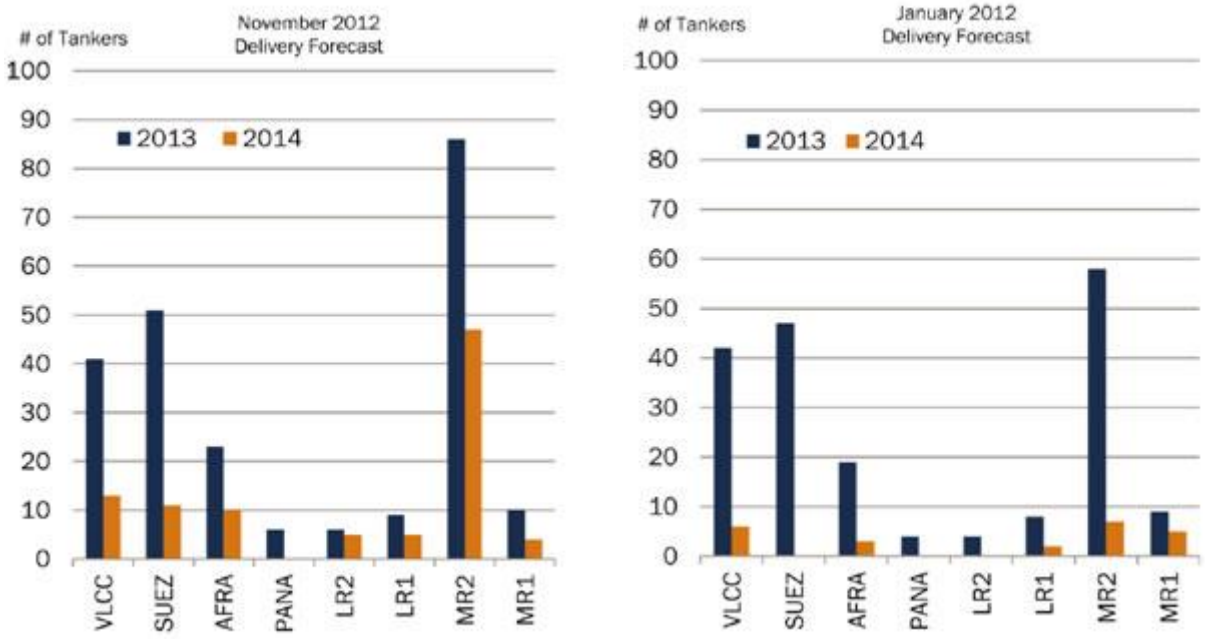


Figure 1. **Source: McQuilling Services**

Despite these seemingly positive developments regarding the balance of the trading fleet, it appears that the oversupply shows no signs of disappearing. In preparation for McQuilling's Tanker Market Outlook 2013-2017 the consultancy said that it had started to examine how the orderbook will develop in 2013 and 2014, as these years have the greatest influence on short term tanker rates. To undertake this exercise, McQuilling said that the company examines the delivery schedules of tankers in its proprietary database for 2013 and 2014 and compares it to the January assessment (Figure 1). At this point of the year, the financial health of shipyards, or owners, which will account for some vessels being delayed, is not being assessed. In addition, classifications for clean product tankers are not being assigned.

Historically, about 2% of LR2 and LR1 are classified under the IMO 1 or 2 categories while for MR2 and MR1 vessels, these numbers are 30% and 50% respectively.

As previously mentioned, tanker owners have been allowed some respite in 2012 from previous year's orders as the delivery profile has been slower than anticipated. While this may have provided some support this year, a negative consequence is that barring any massive shift in the rate of scrapping, these tankers will simply hit the water at a later date, further boosting tonnage supply.

The lion's share of these deliveries in the cases of January 2012 and November 2012 were expected in 2013 (Figure 1) and experience tells us that all of them will not transpire, spreading previous year's orders throughout the forecast period. This is particularly true for the earlier years in the forecast period, McQuilling said.

In previous years, it appeared that the VLCC, Suezmax and MR2 tanker classes would potentially feel the most pressure. Given their dominance in seaborn trade, this development was predictable.

MR2 susceptible

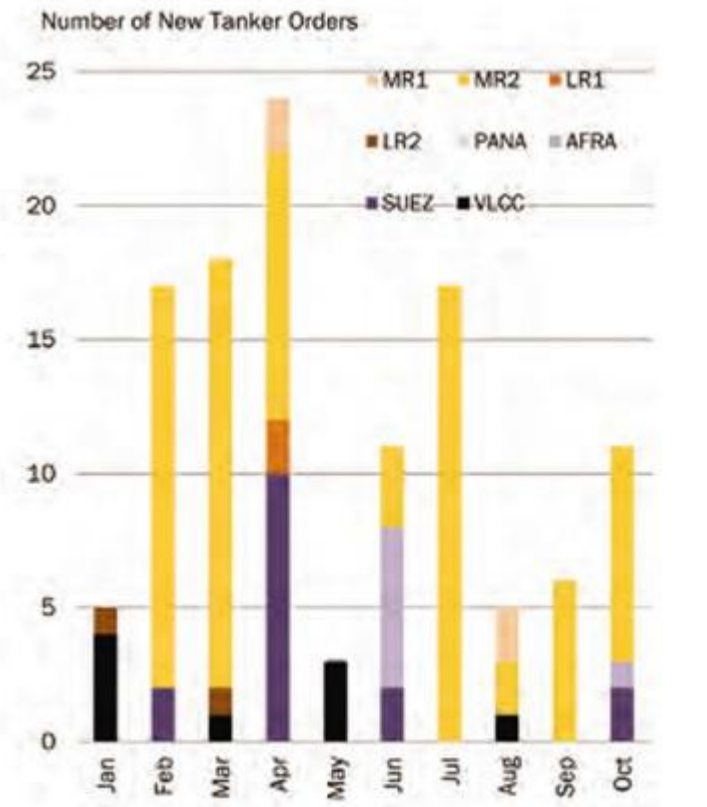


Figure 2. **Source: McQuilling Services**

In last January's Tanker Market Outlook, McQuilling cautioned that the MR2 market was starting to look susceptible to a supply imbalance during the forecast period. This situation is looking increasing likely to transpire. Throughout the first 10 months of the year, 77 MR2 tanker orders were placed, with no IMO classification having yet been assigned (Figure 2). While these vessels are unlikely to hit the water until the latter half of the next forecast cycle, or perhaps even later, it will be compounded by the already high delivery expectations for 2013 and 2014.

In the January 2012 estimate for next year and 2014, MR2 deliveries were already given at 65, but given the very low yard deliveries recorded so far this year, the delivery profile has increased by as much as 50% in this November's estimate (Figure 1).

When examining tanker contracting though end-October 2012, it appears that ordering activity has returned to more traditional levels. The majority of tanker classes have single digit orders, with the exception of the previously mentioned MR2 activity. The low contracting volumes come as little surprise given the state of the tanker market and difficulty most owners face securing financing. These reduced contracts combined with the expectation that fleets will consolidate, due to market pressure, should help balance the tanker market over time, McQuilling said.

Barring any major shift in global economic growth, or oil demand, tanker owners are going to continue feeling the pressure from the robust ordering activity of previous years. While the reduced rate of deliveries, combined with elevated scrapping has likely provided some support to owners' bottom lines this year, fundamentals will remain pressured in the short term, the consultancy concluded.

Inséré le 20/09/13 HISTORIEK HISTORIQUE Enlevé le 20/10/13

The Passage to Cathay

The search for the North West Passage began in the 16th century. It was still going on 300 years later.

SIR Humphrey Gilbert, soldier, scholar, geographer and colonizer, put the case in a book called Discourse: `Learned men and painful travellers have affirmed with one consent and voice that America is an Island ; and there lyeth a great sea between it, Cathaya and Greenland, by which any man of our country that will give the attempt may, with smaller danger, pass to Cathaya, the

Molucca, India and other places in the East in much shorter time than either the Spaniards or the Portugais doeth or may do.'

It was a typically Elizabethan statement, expressed at a time when England was just discovering the enormous possibilities of the sea that surrounded its shores, and trying to make up for time that had been lost to its trading rivals, particularly Spain and Portugal, who had divided the great trading routes of the world between them.

England was too small to challenge such established monopolies directly, but was ambitious enough to want to share in the wealth that its rivals were trying to preserve for themselves. The idea of ignoring the old routes, of steering north instead of south, and west instead of east appealed to the character of late 16th-century England.

The result was one of the most remarkable stories in the history of exploration : three centuries of endeavour, marked with suffering, hardship, triumph and terrible tragedy, a largely British obsession that was pursued long after its original aims had been proved to be impracticable. It was the search for the North West Passage.

Attempts had already been made to get to the Spice Islands by by-passing the Spaniards. In 1497 an Italian called John Cabot persuaded King Henry VII to send him on an expedition across the Atlantic. He reached Newfoundland, but it was not until 1576, when an ex-pirate called Martin Frobisher, inspired by Gilbert and his theories, left Deptford in a 30-ton ship named the Gabriel, that the quest for the Passage really began.

Frobisher had little idea of what to expect, although it was generally believed that the Passage (then referred to as the Strait of Anian) would be a short, narrow channel, something like the Strait of Magellan.

The Gabriel reached the shores of what was later to be called Baffin Land, but instead of a channel, Frobisher found a land-locked bay. He turned for home, determined to return the next year.

Apart from a captured Eskimo, he also brought back some samples of rock which he was convinced

contained traces of gold.

For two years, as a result, Frobisher gave up searching for the Passage and hunted for gold on the barren and goldless shores of Baffin Land. He brought more rock samples home, and when it was at

last established that the rock was worthless, he retired from exploring and was later killed fighting the Spaniards.

The death of Sir John Franklin and his entire party was the greatest tragedy of the North West Passage. Here the ice closes in around the Erebus, *one of the two ships in the expedition. (National Maritime Museum)*

The hunt for the Passage was carried on by others, the most famous of whom was also to become the Passage'sfirst great martyr.

Little is known about Henry Hudson's early career, but he was an expert seaman, and he firmly believed in the possibilities offered by the northern route to Cathay. This conviction was partly based on a theory that was believed by some explorers well into the 19th century.

The theory was that, because tne sun shone at the Poles for five months continuously, the climate must be milder there. It was noted, moreover, that seawater froze most quickly nearest the land. h was believed that this was because of the presence of fresh water brought by rivers. Around the Pole, where the water was deep and the land far away, the sea would be saltier. It was known that there was a barrier of ice in northern waters, but once this was crossed, so the theory continuel, the explorer would find a Polar Sea which would lead him straight to Japan.

Hudson tried to get past this ice barrier in 1607, sailing up the east coast of Greenland, but failed. The next year he tried another route, and sailed east as far as Novaya Zemlya before the ice again forced him to turn back. In 1609, this time with Dutch backing, he tried again, but gave up almost immediately, and sailed across the Atlantic to America, where he discovered the site of New York and the Hudson River.

In 1610 he sailed on the Discovery, and that summer reached further than anyone had gone before. By the autumn, the Discovery was deep in Hudson's Bay, whose enormous size and wide entrance were to entice searchers for the Passage for centuries to come. As the year neared its close, ice began to appear, and soon the Discovery was frozen in.

The crew thus became the first explorers to spend a winter in the ice, and a miserable winter it was. They had been expecting to return home at the end of the autumn, and consequently were short of food, and unprepared for the bitter cold. Hudson's leadership seems to have been indecisive, personal differences began to appear, and as the winter wore on and conditions deteriorated, some of the crew began to think in terms of mutiny. When the ice melted the next spring the situation was beyond Hudson's control : he was seized, together with his son and a handful of loyal crew members, put in a long boat and cast adrift—to die.

The tragedy, though it did not halt the search for the Passage, tended to overshadow the voyages that followed, and clouded the reputations of those who had survived. One of them, Robert Bylot, made several voyages which should have qualified him for recognition as one of the greatest of the early explorers : he further investigated Hudson's Bay, and penetrated Davis Strait and Baffin Bay (William Baffin was his pilot). But Bylot was always remembered only as one of the men who had abandoned Hudson.

Interest in the North West Passage began to falter. The search was taking too long, and now that the English were developing colonies and trade in the Americas the East was no longer so vital. The Hudson's Bay Company, founded in 1690, was an indication that even the icy wastes of the northern lands contained wealth of their own.

There were spasmodic voyages in the early years of the 18th century (one expedition vanished without trace), and interest slowly revived, partly as a result of the discoveries of the Dane, Vitus Bering. Working on behalf of the Russians, he set off in 1733 with an expedition that numbered thousands, including women and children. The immense caravan wound its way across Siberia, and eight years later Bering reached a strait at the end of Asia, and sighted America on the far side.

Parry's 1819 expedition passed through Lancaster Sound and reached Melville Island, within sight of Banks Land to the south; but heavy ice prevented further progress and the crews of Hecla *and* Griper *had to cut their way through the pack to winter in Winter Harbour. The next summer the ice was still too thick—and it was over 100 years before a ship at last got through. (Mary Evans Picture Library)*

The knowledge that there was a gap between the two continents, and the realization that the Russians were showing interest, spurred the British on. Between 1770 and 1772, Samuel Hearne, a Hudson's Bay Company employee, made his way overland to the shores of the Arctic Ocean, and in 1778 Captain James Cook sailed through the Bering Strait and pushed north. He found his way blocked by a huge mass of floating ice, and turned south again, to Hawaii and death. In 1789 a Scotsman named Alexander Mackenzie followed the course of the Mackenzie River to the sea ; like Hearne, he concluded that the passage could not start in Hudson's Bay. The entrance, therefore, must lie further north.

The French wars occupied Europe for the next two decades, but by 1815 the British were ready to start the search again, and were, moreover, in a better position than ever to do so. They had a huge and efficient fleet, they controlled most of the land mass of the far north, and they also had the will.

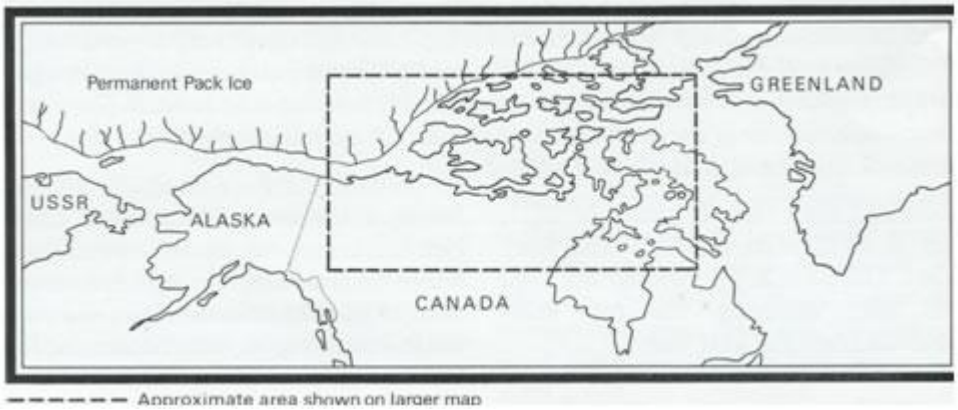
By then, however, the motive for the hunt had changed. Nobody now believed there would be any commercial advantage, for the hazards and difficulties of the voyage would rule it out as a trading route, even if it existed. Besides, the British had by then already gained control of the old routes to the Far East.

The British were really determined to conquer the Passage for the same reason that they later wanted to climb Everest because it was there.

The new era opened in 1818, and the plan was far more ambitious than anything previously considered. Commander David Buchan and Lieutenant John Franklin were to sail up the east coast of Greenland, while Commander John Ross and Lieutenant William Parry sailed up the west. They were then to find a way through the ice barrier, and sail across the Polar Sea on the other side (the Tudor theorists still had many adherents) towards the Bering Strait.

Buchan and Franklin were unable to make any impression on the ice on their side, but Ross and Parry penetrated Baffin Bay, and started to explore a deep inlet that ran towards the west. It seemed promising—perhaps it was the entrance to the Passage itself—but after a short while Ross stopped and turned about. He explained afterwards : 'I distinctly saw the land, around the bottom of the bay, forming a connected Chain of mountains with those extended on the north and south sides. . . . I tacked to join the Alexander.'

The crew of the Alexander, Parry's ship, were astounded at this decision. Parry said it came were much to our surprise indeed, as we could not see anything like land at the bottom of the inlet.'



Bock in England, the controversy increased. Ross seemed to be alone in his belief, and the armchair supporters of the search for the Passage, led by Sir John Barrow, an Admiralty official who was for decades the leading proponent of Arctic exploration, criticized him bitterly for not going on.

In 1819 an expedition was sent off to end the debate by exploring the inlet, and it was led by Parry. The snub to Ross could hardly have been more pointed.

The expedition was carefully planned. By now, the Admiralty knew enough about the Arctic to realize that the Passage would not be discovered in one summer. Parry's ships, the Hecla and Griper, were stoutly-built bomb ketches, strengthened to resist the pressures of the ice, for it was intended that they should spend the winter months in the Arctic, and continue the search when the ice melted the next summer.

At the same time, Franklin was to lead an expedition overland from Hudson's Bay and explore the northern coastline of the mainland of Canada.

Parry's voyage was successful beyond anyone's expectations—perhaps the most successful of all the voyages to the North West Passage. His two ships not only discovered that there were no mountains at the bottom of the inlet now named Lancaster Sound-but they sailed right through, past Barrow Strait, into Melville Sound and on again to another strait that lay within a few hundred miles of the Pacific. They passed the 110 degree line of longitude-earning a £5000 bonus in the process-and

reached Cape Hay. They could see Banks Land to the south, and a passage leading to the west. And then the ice stopped them —not just ordinary pack ice, that formed each winter and then thawed in the summer, but a massive, permanent sheet as impassable as land itself.

The two ships wintered off the coast of Melville Island, but the ice barrier remained the next year, and Parry reluctantly headed for home.

Franklin had different luck. He reached the sea, at the mouth of the Coppermine River, but his party suffered terribly from cold and hunger. Meanwhile, Parry had sailed on his second voyage.

Since the route past Melville Island seemed to be permanently blocked by ice, the new attempt was made via the north of Hudson's Bay. Two ships, the Hecla and Fury, left England in 1821, and in 1822 reached Hecla and Fury Strait. Once again, ice blocked the way, and after wintering, the two ships returned home the next year.

Parry had charted hundreds of miles of coastline, and had ruled out two possible routes to the Bering Strait. In 1824 he sailed again, this time determined to explore Prince Regent Inlet, which he had entered briefly on his first expedition. This time the ice not only blocked his way, but damaged Fury so severely that she had to be abandoned. With only Hecla left, he had to return to England.

Franklin's disappearance prompted the dispatch of numerous search parties—and one of them, led by Commander Robert McClure in HMS Investigator, *almost got through the Passage itself before the ice became too thick. The painting is by Lieut. S. Gurney Cresswell, a member of the crew, and gives a chillingly authentic impression of the Arctic winter. (National Maritime Museum)*

These failures only intensified the Admiralty's determination to succeed. In the same year, 1824, three other expeditions set out, one to the Melville Peninsula, which Parry had reached in 1821, a second through the Bering Straits from the Pacific, and a third, under Franklin again, to the Mackenzie and along the coast. This time Franklin had more success. He reached the border of Alaska, while a colleague, Dr John Richardson, went east, and explored the Coppermine River. The two sea expeditions had scant success. Many of the blank areas on the map had been filled in, but the North West Passage remained as elusive as ever, and nobody could yet be certain where it even began.

The next to try was the forgotten man of the previous decade, Sir John Ross. Unable to secure the backing of the Admiralty, he turned to a wealthy distiller named Felix Booth, whose name can be found to this day both on bottles of gin and maps of northern Canada.

Taking a 150-ton paddle steamer called Victory, he set off in 1829 to explore Prince Regent Inlet. He wintered off the coast of what he called Boothia, and on a sledge journey glimpsed the sea on the other side of the peninsula.

In 1830 he took a canoe across the sea to King William Land, and to the north saw ice which, he reported on his return home in 1834, `consisted of the heaviest masses I had ever seen in such a situation.'

At the same time, he suggested that King William Land was probably joined to Boothia further south, and this suggestion was later accepted as fact, particularly when in 1839 George Simpson and Peter Dease actually crossed the strait separating the two without realizing it. The ice and snow were so thick they believed they were walking across land. This belief was to have tragic consequences within a few years.

Throughout the 1830s the search went on, mainly from the landward side. In the process still more blank areas were charted, and by the 1840s only one substantial region remained unknown : the huge expanse that lay south of Melville Island, west of Boothia, and north of the mainland. The geographers and sailors studied the reports, looked at their maps, and agreed. The Passage must lie somewhere in that vast unknown.

One last effort, it seemed, was all that was necessary. Sir John Barrow, as usual, was the leading advocate, and he told his colleagues : `England, by her neglect of it, after having opened the East and West doors, should be laughed at by all the world for having hesitated to cross the threshold.'

This argument had its effect. The Admiralty decided that the new expedition would have one objective-to get through the North West Passage. Exploration and charting, let alone scientific studies, were to be secondary.

At this stage Sir John Franklin reappeared. In 1845 he was 59, and most Arctic explorers were young men. Nevertheless, his experience, fitness and enthusiasm were decisive, and his offer to lead was accepted. Fortnum and Mason's supplied food for the officers, nearly 3000 books were taken aboard the Erebus and Terror, and full of hope they set sail.

Nothing was heard of the expedition the next year, but this was not unusual. Ross's second expedition had lasted five years, after all, and he had been given up for dead two years before the Victory finally broke free of the ice. By the end of 1847, however, the Admiralty became concerned. Something, it seemed, had gone wrong, and with great energy their lordships set out to find out what.

In 1848, parties converged on the Passage area from east and west, and others soon started out from the mainland of Canada. It was not until 1850, however, that the first traces were found : a cairn, then winter quarters, and the graves of three of Franklin's men on Beechey Island, in Barrow Strait.

In 1851 another Glue was discovered, although its significance was not appreciated at the time. Dr John Rae, of the Hudson's Bay Company, found timbers from a European ship floating far to the south, off Victoria Island. He also noted heavy ice coming down from the north west, and thought that it probably came from the direction of Melville Island. The consensus was, however, that the timbers were too far south to have come from the Erebus or Terror, while the importance of the ice sheet was not recognized at all.

The hunt for Franklin diverted attention from the search for the Passage itself, and yet one of the would-be rescuers almost achieved the journey from ocean to ocean which seamen had been trying to accomplish for so long. Commander Robert McClure, in HMS Investigator, left England in 1850 to search for Franklin from the Pacific side. He reached Banks Land and next year probed north, until the ship came up against the same massive wall of ice that had stopped Parry in 1819.

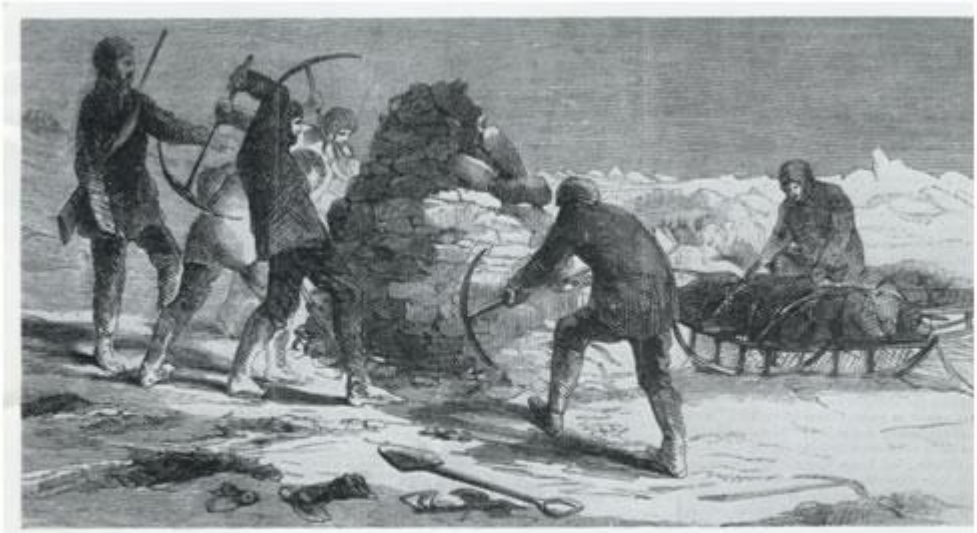
It reached a height of 100 ft. It was impossible to break through but, towing the Investigator with the ship's boats, McClure slowly worked his way round the edge of the sheet, taking advantage of gaps that occasionally appeared.

Far ahead, across the ice, the crew could see Melville Island. Briefly the ice opened : there was just a chance that the Investigator could get through. But McClure wondered about the approaching

winter, and what would happen if the ice closed around the ship. He decided to winter off Banks Land.

The ship was within sight of the Passage itself, and McClure actually crossed the ice, on foot, and reached Winter Harbour, where Parry had wintered 30 years before. But next spring the Investigator could not move and as the months passed the situation became more and more serious. Food was running short, and the crew were becoming infected by scurvy. McClure decided that the Investigator would have to be abandoned by the majority of her crew, but in April 1852, before they could leave, a figure was seen approaching them from across the ice : Lieutenant Pym, of the Resolute, which had set out in search of McClure, as he had set out in search of Franklin.

The Investigator's crew was saved, and for a while McClure toyed with the idea of waiting, another winter if necessary, and again trying to break through the immense ice wall that separated him from the Atlantic. But his crew were too weak, too diseased, and reluctantly he abandoned his ship and returned home on board the Resolute.



The mystery of Franklin's fate was at last settled by an expedition led by Captain McClintock in 1857–59: here, members of a sledge party open a cairn on King William Island containing a letter which gave details of the death of Franklin, and the abandonment of the two ships Erebus *and* Terror. (*Mary Evans Picture Library*)

The years around the middle of the century were dominated by the hunt for Franklin. There was little hope that the party might be alive, and the searchers themselves showed quite exemplary dedication one ship, the Enterprise, under Captain Richard Collinson, spent 54, years in the northern archipelago, an achievement which a commentator has called 'one of the greatest voyages in the maritime history of Great Britain.'

The conditions that these men lived in were as good as the Admiralty could make them-much had been learned during the previous centuries-but one is still impressed at their determination, their enthusiasm, their unquenchable spirit, and good humour, particularly during the winter months when there was little to do but wait for the ice to melt (and pray that it would).

To fill the time-particularly the three months when the north was in permanent darkness-various diversions were organized, and a good picture of what life was like can be found in the pages of Arctic Miscellanies, published in 1852. It consists of extracts from a newspaper called the Aurora Borealis, which was produced by the crew of the Assistance during 1850-51. The ships established schools for the men, at which subjects such as arithmetic, navigation, seamanship and music were taught. The crews spent four hours a day doing exercises, and before the nights grew too dark, went skating or played football on the ice. Hunting was a popular diversion : between June and December 1850, the Aurora Borealis noted, the Intrepid and Assistance bagged six Polar bears, 16 foxes, 1430 little auks, and a host of other creatures. While the ships were iced in, crew members would go off on exploring trips, and a veteran left the

following description of one of these jaunts : `Walk 13 or 14 miles through deep snow in as many hours. You are unable to get through the luncheon of frozen pork ; your feet becoming too cold to stand still, and fingers so numbed as to be unable to hold a knife. Endure sundry frostbites throughout the day, sufficient to keep you in a constant state of alarm about your nose ; just before encamping tumble into a crack in the ice and wet both legs ; wait two hours for your pemmican supper, by which time you will be cool all over ; devour it in two minutes and lay down in a blanket bag and shiver all night.'

As the nights lengthened, linger posts were erected so that the men could find their way to and from the ships. Guy Fawkes Night was celebrated, and despite the absence of ladies, dances were held. The officers of the Assistance established a theatre, and staged a number of wellreceived plays. The temperature dropped, to around —47 deg F : at this temperature a cup of boiling water thrown into the air simply explodes into a cloud of minute ice particles. By the end of the winter the temperature rose, but the ice was so solid that it was July or later before the ships could free themselves.

It was small wonder that the editor of Aurora Borealis wrote of the Islands where the Assistance anchored : 'It might safely be asserted that more desolate, miserable, uninteresting and frightful regions do not exist on the surface of the globe.'

By the middle of the 1850s, when the Admiralty was involved with the problems of the Crimean War, it had been reluctantly accepted that Franklin and his party were dead. Relics that almost certainly came from the two ships had been found, and the Eskimoes had told John Rae of a party of white men who had been seen trekking south, only to die one by one.

But it was not until Captain Francis McClintock sailed in the pleasure steamer Fox in 1859 that the nature of the tragedy was established.

The survivors of the Franklin expedition tried to drag the ships' lifeboats, laden with food and equipment, with them to safety. Appalling conditions proved too much for them: as the title of this painting by W. T. Smith says, 'they forged the last links with their lives.' (National Maritime Museum)

Using sledges drawn by dogs, McClintock made for King William Land, and there the Eskimoes told him of two ships that had been caught in the ice some years before. He found silver cutlery that must have come from Franklin's expédition, and finally discovered even more conclusive proof--a skeleton, with enough blue rags attached to identify it as the remains of a British seaman. Another member of the Fox's crew had meanwhile found a cairn containing two messages on a single sheet of paper.

One, dated May 1846, stated that the Erebus and Terror had wintered at Beechey Island (which was already known). The second said that the two ships, after moving south, had become trapped in the

ice. By mid-1847, 24 men, including Franklin, had died. The survivors, despairing of ever freeing their vessels, abandoned them in April 1848.

McClintock continued the search and found a ship's boat, on a sledge, containing two skeletons. It was also loaded with 40 lb of chocolate, and an enormous amount of equipment, including four heavy cooking stoves, pickaxes, curtain rods, four feet of iron lightning rod and other material so useless that one can only wonder at the mental condition of the men who had hauled it so far and then, exhausted and dying, been forced to leave it behind.

For those who remained alive, the Eskimoes, it was now agreed, had already provided the answer. They had told Rae that they had seen about 40 white men, dragging boats, near King William Land.

`From the appearance of the men,' Rae reported, 'all of whom looked thin and, with the exception of an officer, were hauling on the drag ropes of the sledges, they were supposed to be short of provisions, and they purchased a small seal from the natives. At a later date in the same season, but previously to the breaking up of the ice, the bodies of some 30 persons were discovered. . . . '

McClintock had solved the mystery of Franklin's disappearance, and he was also sure what had caused the tragedy : the same sheet of ice that had stopped both Parry and McClure, and had been spotted by Ross a quarter of a century before ; an ice sheet spawned in the grim waters of the Beaufort Sea and then pushed annually through the gap between Banks Land and Melville Island and southwards until it was halted by the shores of King William Land.

It was the accepted belief that there was no channel between King William Land and Boothia which had doomed the Erebus and Terror. McClintock wrote : `Had Sir John Franklin known that a channel existed eastward of King William Land . . . I do not think he would have risked the besetment of his ships in such heavy ice to the west of it ; but had he attempted the North West Passage by the eastern route he would probably have carried his ships safely through to the Bering Straits.'

During the course of the search for Franklin the last unknown regions of the Passage route were charted, and it was generally agreed that the search was over. Just who had discovered the Passage was uncertain, although public sentiment gave the prize posthumously to Franklin. But at this point the British, who had been plugging away at the North West Passage for three centuries, seemed to lose interest. They had found the Passage, but they did not sail through it. Perhaps the huge effort that had followed Franklin's disappearance had led to boredom with the whole thing.

It was a Norwegian, Roald Amundsen, who finally achieved what so many men had died for. In 1903, he left Oslo in a 47-ton yacht called Gjoa, and in 1905 reached Alaska. He did it by following McClintock's suggestion and sailing between King William Land and Boothia—the passage which Franklin believed did not exist.

Footnote : The ice barrier which stopped Parry and McClure, and crushed the Erebus and Terror, was finally crossed by the St Roch, a Canadian police boat, in 1944. In 1956 the ice-breaker Labrador also succeeded. But they were lucky.

In 1969 the 114 000-dwt ice-strengthened tanker Manhattan, trying to find an economically viable route from the east coast of the United States to Alaska, endeavoured to force its way through. For 12 hours it battered the ice in the McClure Strait. Then, on September 11, the attempt was abandoned. The Manhattan turned south, to challenge and defeat the ice where it was a less formidable obstacle.

Inséré le 20/09/13 BOOKS BOEKEN LIVRES Enlevé le 20/10/13

“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.com

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Inséré le 22/09/13 NIEUWS NOUVELLES Enlevé le 20/10/13

Flying the flag of liability: LISW holds major debate on abandonment

Posted: 10 Sep 2013 04:29 AM PDT

The abandonment of seafarers remains a pivotal issue in implementation of the Maritime Labour Convention (MLC), as disputes over the costs and liability for repatriation mean seafarers rights are not always assured – this according to maritime consultant and Ship Management International columnist Michael Grey, who this morning, chaired a panel debate on this regulatory hot potato.

London International Shipping Week is a time to celebrate our industry but we should also use this time to question some of its darker aspects and, as Mr Grey said – new provision within the MLC which makes flag states liable for repatriation costs, represents a vital move towards putting seafarers rights into practice. He said: "The MLC is here, but it needs to be properly enforced in order to work. I am positive it will be monitored by the International Labour Organization (ILO) but cash strapped flag states will be grateful to have experts in the field."

Experts in question who were present at the debate included the Reverend Canon Ken Peters, Director of Justice and Welfare, The Mission to Seafarers, who said that although the MLC may point the finger of liability at flag states, the practical work on the ground -from gaining the trust of abandoned crew members to putting them on a plane home – will always remain a burden of charities such as The Mission to Seafarers, as there are simply no other forces at work who can provide the practical assistance these seafarers desperately require.

Canon Peters said: "The real test of the MLC is not it simply coming into being, but how effective it really is on the ground. In many cases, I'm afraid to say it will be business as usual – there will still be abandonment, flag states will be liable, but in practice who will perform the repatriation? There is simply no one else.

"Seafarers who overstay their visas are classed as illegal immigrants and we need real people, present on the waterfronts; we need people who are trusted by the seafarers, particularly because seafarers believe that if they leave ship, they will lose their wages but this isn't true. Seafarers trust port chaplains, not port officials. I hope flag states recognising their responsibilities now will not be cowed by the task."

Cleopatra Doumbia-Henry, Director, International Labour Standards Department, ILO, was also a major presence in the debate and she confirmed that globally, 183 ships are currently listed as

abandoned. She also noted that repatriation of seafarers has been a major concern in the industry for decades, with the ILO having adopted its first convention (#23) on repatriation in 1926.

“The MLC is a consolidation of existing requirements but it adds an important element relating to the financial security of ships, particularly where repatriation is concerned, as a mandatory requirement,” she said, adding that the issue of financial security and coverage is, from an insurance perspective, “the greatest issue in moving the MLC forward”.

David Purdy, Executive Director, Willis FINEX, discussed his company’s new insurance product which aims to plug this gap. Following an abandonment owing to insolvency, Willis’s FLIER product (Flag Liability Insurance Against Exposure for Repatriation) offers full coverage for all legal liability associated with medical costs and repatriation – as will be the responsibility of flags under MLC.

Mr Purdy said: “The problem is, there is no speedy process of getting abandoned seafarers home. If we, as an insurer, get involved, the quicker we can assist in getting the abandoned seafarers home, then the less expensive it will ultimately be for The Mission to Seafarers.

“Its vital to get people who are working on the ground involved early. If a vessel is abandoned and the owner can’t be traced, then there is much reliance on the expertise of people such as Canon Peters who know all the processes involved. The rights of seafarers should not be hindered by trying to decide who is ultimately responsible and as an insurer, we can step in and assist.”

He added that the entire product has been built around getting seafarers home, allowing them to make claims as individuals. For each vessel flying under a flag which has invested in the FLIER insurance product, a Certificate of Insurance (as provided on behalf of a Moody’s A-rated insurer) will be supplied, providing evidence of financial security. “Unfortunately, sometimes, the ownership of ships can be a dark art and figuring out who is responsible can be a lengthy process – that veil often isn’t pierced at all. But we can help with this product,” Mr Purdy concluded.

Inséré le 26/09/13 NEWS NIEUWS Enlevé le 26/10/13

More single hull tankers leave the fleet

A few weeks ago, Ship Finance International announced the sale of three single hull VLCCs, following the earlv termination of their long-term charters.

Although these units have been employed outside the tanker market on long-term storage contracts for some time, it does once again put the spotlight on what impact (if any) the remaining SHs have in today's tanker market.

Analysis undertaken by Gibson Research showed that just 223 single hulls tankers of over 25,000 dwt remain in the fleet as of the middle of September, which represented about 5% of the total tanker tonnage.

Only seven flag states had 10 or more SHs on their respective registers. Excluding Panama and Liberia, Indonesia has 31 SHs, China (21) and Brazil (13). Petrobras remains the largest owner of SH tanker tonnage with 13 vessels.

Closer scrutiny of the accompanying table shows that of the remaining 33 VLCCs, just five continue to trade. More significantly, 16 units are employed in long-term projects mostly storing fuel oil in the Singapore area. A further seven are laid-up in waters around Labuan.

With the inclusion of the three Ship Finance vessels (reported sold to Petrobras for possible conversion to FPSOs), as many as 10 SH VLCCs are destined for conversion to FPSO/FS0s*.

By comparison, the Suezmax fleet is now 98% double hull with just eight 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.

While Gibson's analysis stops short of a complete breakdown of the fleet, many of the smaller tankers are known to have had no reported movements for several years. Owners are able to continue to trade these tankers until the end 2015 and there are several examples where owners have declared that this is their intention.

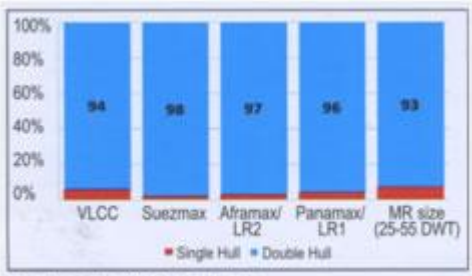
On the other hand, several owners have put up the 'for sale' signs with little prospects of finding a buyer, or indeed even realising a scrap value.

Gibson said that for some time, its view has been 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.

VLCC disaster

Remaining with the VLCC market, Gibson said that it is rare that the underlying level of trade can increase by around 10% in less than a year and at the same time, returns collapse to near non-existent levels, but this is what has happened to the Middle East VLCC sector.

Over the past nine months, Middle East OPEC production has increased by 2 mill barrels per day (plus 10%) and yet VLCC TCE earnings on TD3 (at 15 knots) have fallen from $30,000 per day to sub-zero. Even if vessels slow-steam, the earnings are only just covering fixed operating costs of around $11,000 per day.



Tanker Fleet Hull Profile.

So, despite more Middle East crude cargoes, the simple answer is 'there are far too many VLCCs' and worse still, there are a lot more still to be delivered. However this is portrayed, it is disastrous for VLCC owners. At the same time, it is not in charterers long term interests to see low returns threaten their operations.

There are no easy answers to these fundamentals, but either demand bas to rise even faster, or somehow owners have to remove tonnage, Gibson said.

On the demand ride, more long haul MEG/western destinations would help, but with the US and European economies "looking down the barrel of a gun" this cannot be relied upon.

This means turning to supply, with slowsteaming a first step. Although slow-steaming on the laden leg is limited because any lengthening of voyage time incurs a cost to the charterer on the capital tied up, these constraints are not there when ballasting.

At around nine knots, a VLCC in ballast consumes less than 30 tonnes per day, compared with around 55 tonnes per day at 13 knots. In this case there will be a cost saving of around $200,000 on a VLCC ballast leg from Japan to the Middle East, BUT the more important aspect is that at these super-slow speeds there will be an effective cut in supply of some 1015% and so rates/earnings will be higher. On paper this is a 'no-brainer', but in the real world this is not quite so easy. There is always the temptation to chase a cargo from some way out; also, if an owner operates at these super-slow speeds it will help everyone else — even those that don't engage in the practice. Nonetheless, if enough owners stick to slow-steaming it will help their market.

Single Hull Fleet (SH)	Still Trading	Laid Up	Long Term Storage Projects	Unknown/Not Moving/Other
VLCC - 33	5	7	16	5
Suezmax - 8	3	1	3	1
Aframax - 30	15	6	3	6

Source – Gibson Research.

The challenge going forward will be to resist speeding up in a rising market, thereby removing the very support created by slowsteaming. However, in the current market owners have to do something.

Beyond slow-steaming, there is the option to lay-up. At the moment it is too early to take tankers out on a semi-permanent basis, with the concern about losing approvals and missing the chance of a market pick-up, especially in 4Q11 and 1Q12. If there is no significant market upturn over this winter, then lay-up will be a much botter topic in 2Q12. Either way, VLCC oversupply is something we are likely to be talking about for some time, Gibson concluded.

* The analysis excludes tankers already under conversion, as they are deemed to be already out QI' the tanker markets.

Inséré le 28/09/13 BOOKS BOEKEN Enlevé le 28/10/13

Brown's Rule of the Road Manual.

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

Bij **Brown, Son & Ferguson Ltd** verscheen recent **'Brown's Rule of the Road Manual**. The rule of the road at sea'.Het betreft de negentoiende editie van die uitgave. Oorspronkelijk geschreven door H.H. Brown, werd het boek nu herzien en uitgebreid door Saurabh Sachdeva F.I.C.Sc. M.Sc. M.N.I. Master Mariner. Deze recentste versie van dit onmisbare handboek omvat nu ook de S.T.C.W. 2010 Manila Ammendementen, het meest recente M.C.A. Deck Officer Orals syllabus en meerdere I.M.O. 'routeing measures' en 'guidance notices', gedragsaanbevelingen voor een veilige vaart. Het geactualiseerde I.A.L.A. bebakenings- en markeringssysteem werd nu opgenomen met volledig nieuwe diagrammen in kleur.Een publicatie dat op geen enkel (zeil)schip zou mogen ontbreken! "**Brown's Rule of the Road Manual**" (ISBN 978-1-84927-037-3), werd op handig formaat als hardback uitgeven. Het boek kost £45.00. Aankopen kan via de (gespecialiseerde) boekhandel of rechtstreeks bij de uitgeverij Brown, Son & Ferguson Ltd, 4-10 Darnley Street, Glasgow, G41 2SD, Scotland (UK). E-mail: info@skipper.co.uk

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Inséré le 30/09/13 HISTORIEK HISTORIQUE Enlevé le 30/10/13

De Grote Oorlog en...

De catastrofe van de IMO, zogezegd een Belgisch schip

Zeer vaak worden de pagina's van ons tijdschrift gewijd aan recente historische maritieme gebeurtenissen. Ik bedoel hiermee uit WO IL Maar hierdoor verdringen dit conflict en de andere die erop volgden overal ter wereld, heel wat feiten uit WO I naar de geschiedenisboeken. Een bewijs hiervan: wat weet u over de catastrofe van bewijs in 1917?

In de maand december 1917 stonden de Canadese media vol van artikels over het cataclysme dat de haven van Halifax trof op 6 december; het was de meest afschrikwekkende catastrofe veroorzaakt door de mens vóór de atoombomontploffingen in 1945. Radio en pers spraken die dagen van : «... een Frans munitietransportschip, de Mont Blanc, is in aanvaring gekomen in de haven van Halifax met een Belgisch schip, de Imo, heeft vuur gevat en is ontploft; daarbij vielen 2.000 doden en werden duizenden anderen gewond. De ontploffin veroorzaakte een vloedgolf en een schokgolf zo krachtig dat ze bomen brak, spoorlijnen verwrong en gebouwen vernietigde, waarbij de brokstukken over honderden meters werden weggeslingerd...»

Laat ons meteen stellen dat er een fout zit in dit verhaal: de Imo onder bevel van kapitein Haakon From, was namelijk geen Belgisch schip maar een Noorse cargo bevracht door de `Commission for Relief in Belgium' om ons land en het Noorden van Frankrijk via Rotterdam te bevoorraden. Het relaas van de gebeurtenissen : In die oorlogsdagen was de belangrijkheid van haven van Halifax sterk toegenomen. Het wemelde er van schepen bestemd voor transport van troepen, bevoorrading en materieel naar Europa. Hier werden ook de trans-Atlantische konvooien gevormd. Om strategische redenen werd dan ook het toegangskanaal beschermd met netten tegen vijandelijke onderzeeërs en schepen.

Emergency relief hospital in the YMCA, Halifax, Nova Scotia
PANS, Lola Henry collection, number 1979-237.8, N-7024

Op 5 december lag de Imo, op ballast, tenanker in de Bedfordkom. Het was avond en de gezagvoerder was vol ongeduld aan het wachten om naar New York te vertrekken; een laattijdige inspectie had hem inderdaad gedwongen zijn vertrek uit te stellen tot 's anderendaags 's morgens. Tezelfdertijd lag voor de haven, komende van New York, de Franse stomer Mont Blanc te wachten; zijn kapitein, A. Le Medec, wachtte op de toestemming om de rede op te varen waar hij een konvooi met bestemming Bordeaux moest vervoegen. Hij was ongerust over de vertraging want vier dagen voordien had hij, naast `diversen', ook 2.367 ton springstof en picrinezuur, 250 ton TNT (trinitrotolueen), 62 ton schietkatoen en 246 ton benzeen geladen voor de geallieerde legers in Europa. Hoewel het de bemanning verboden was rookgerief, lucifers en alcohol aan boord te hebben, was de Mont Blanc een echte drijvende bom!

Op de ochtend van 6 december begon de Mont Blanc de haven binnen te varen terwijl op hetzelfde tijdstip de Imo het anker lichtte om uit te varen, en dit te midden van heel wat scheepstrafiek. Alea jacta est!

Het is algemeen bekend dat de meeste maritieme catastrofes veroorzaakt worden door een opeenvolging van kleinere gebeurtenissen. Zo moest de Imo bij het binnenvaren van de haven het enge linkerkanaal nemen omdat een gesleept vrachtschip het rechterkanaal versperde. Anderzijds merkte de Mont Blanc, om diverse redenen, in het drukke havenverkeer de Imo slechts op toen hij al tot 3/4 mijl genaderd was en tot de vaststelling kwam dat zijn zuid-oost koers een 'collision course was'. Hierop volgden aan beide kanten in grote verwarring fluitstoten, onbegrepen signalen en ongepaste roerorders. De Imo stopte zijn machines maar als gevolg daarvan dreef hij af naar het midden van kanaal waar beide schepen in aanvaring kwamen. De Imo liep slechts weinig schade op en maakte zich los. Maar door de botsing sloegen er vonken over naar de Mont Blanc, en enkele minuten later vloog de benzeen aan dek in brand en sloeg het vuur over naar de drieduizend ton springstof in de ruimen. Om exact 9 uur, 4 minuten en 35 seconden, op deze 6 december 1917, ontplofte de stad, waarbij 2.000 doden en meer dan 9.000 gewonden vielen en 12.000 huizen werden vernield.

Halifax, expositiegebouw na de explosie

De Mont Blanc, waarvan de bemanning erin geslaagd was in extremis het schip te verlaten, vloog in de lucht; een gigantische vlam van 1.600 meter steeg op waardoor een van de eerste door de mens veroorzaakte paddenstoelwolken werd gevormd. De kracht van de explosie veroorzaakte een vloedgolf van meer dan twee meter boven het hoogwaterpeil waardoor de Imo op de oevers van Dartmouth, een voorstad van Halifax, werd geslingerd; kapitein From en de havenloods kwamen hierbij om maar de rest van de bemanning werd gespaard. Meer dan 2,5 km2 van Halifax werd met de grond gelijkgemaakt; ramen sprongen tot in Truro, Nova Scotia, op 100 kilometer daar vandaan terwijl een anker van de Mont Blanc werd teruggevonden op 5 kilometer van de haven. Sinds mensenheugenis was voordien de mijnexplosie van Nanaimo in 1887 de grootste niet-natuurlijke ontploffing ter wereld.

Op het proces voor de Maritieme Commissiwerden de kapitein van de Mont Blanc en de havenloods veroordeeld voor onvrijwillige doodslag. In mei 1919 zou echter in hoger beroep gesteld worden dat er vergissingen begaan waren aan beide kanten en dat de verantwoordelijkheden dus gedeeld waren.

Onder de 2.000 slachtoffers van deze verschrikkelijke catastrofe viel ook een held, een zekere Vince Coleman. Gealarmeerd door een eerste ontploffing nam deze telegrafist het risico zich naar zijn kantoor te begeven om een bericht te sturen naar twee passagierstreinen waarvan hij wist dat ze op

weg waren naar het station North Street. Hij overleefde de ontploffing niet maar de treinen konden tijdig stoppen en de passagiers ontsnapten aldus aan een waarschijnlijke dood; zo had een man, gehuwd en vader van twee kinderen, zijn Leven geofferd om dat van 700 anderen te redden!

Vandaag vormen de kanonnen en het anker van de Mont Blanc, een monument in de stad, op de plaats waar ze teruggevonden werden, terwijl andere herinneringen tentoon zijn gesteld in het Maritime Museum of the Atlantic in Halifax.

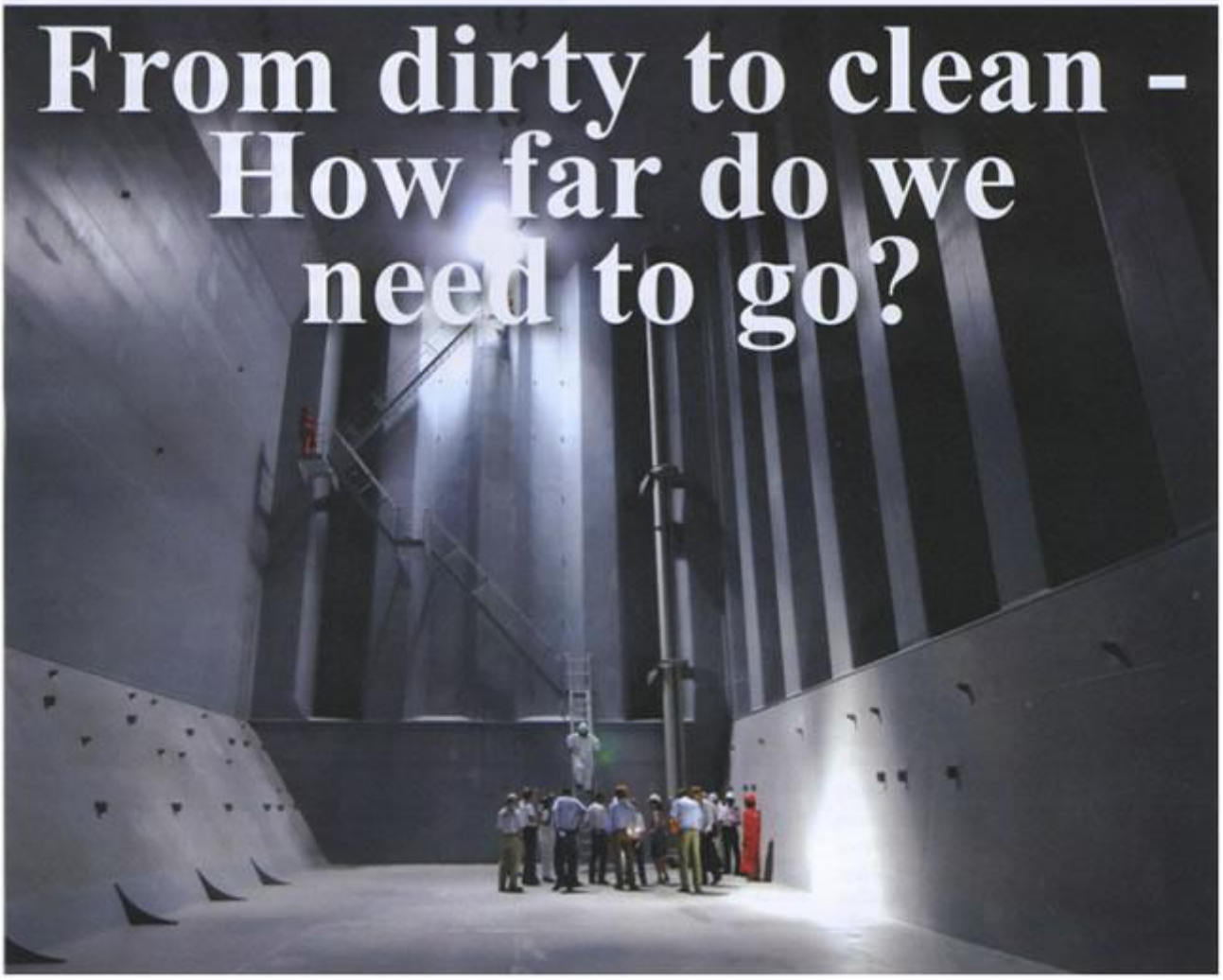
Het past deze feiten in herinnering te brengen, maar dan wel geplaatst in hun juiste context.

Saint Bernard du Spuikom
Bron: De Wimpel 3de trimester 2010

Inséré le 28/09/13 OPEN FORUM Enlevé le 28/10/13

In an article published last year, I discussed the impact of the design of modern tankers on their ability to change from dirty to clean cargoes (See TANKEROperator, August/September, 2010, page 61).*

I noted that the primary objective for most operators is always to carry out these operations in the shortest possible time frame, using the smallest volume of cleaning chemicals or materials.



Indeed, the need to carry out any tank cleaning operation in the most time efficient manner, utilising the minimum volume of cleaning chemicals, also fats the developing `environmentally aware' footprint that many shipowning/chartering companies are following, by saving fuel and reducing the volume of disposal of detergent based cleaning materials into the seas.

Another challenge facing operators in this trade pattern seems to be the reluctance of the clean cargo charterers to accept a vessel with dirty as last cargo, irrespective of the design of the vessel, or the extent of the tank cleaning.

The reason for this is quite obvious; residues of the dirty cargo that may be retained on the vessel after the tank cleaning operation is completed, have the potential to discolour the clean cargo and as there is no apparent method of accurately estimating the extent of this discolouration, the natural reflex is to prevent rather than invite a potentially very costly claim.

Having said that, many vessels do switch from dirty to clean, so there are clearly cases where vessels successfully load a clean cargo when the previous cargo was dirty. In some of these cases the charter party agreement may incorporate a `colour-drop' clause, which allows for some discolouration of the fully loaded clean cargo, within acceptable limits. But, accurately defining these limits is not a precise science and there will always be some risk for the charterers and of course the owners of the vessel, who ultimately take responsibility for the final (export) quality of the loaded cargo.

As I concluded in my last discussion, if the owners of a vessel cleaning from dirty to clean are willing to take that responsibility for ensuring the clean cargo will meet the charterers quality specifications based on their own experiences, research and knowledge of the capabilities of their fleet, surely this will ultimately lead to greater flexibility both for the owners and charterers of such vessels?

Marinvest Shipping Marinvest Shipping of Gothenburg recognises and accepts responsibility when company vessels change from dirty to clean. Indeed, ail of the modern fleet of tankers trading in this area were specifically designed with the DNV classified Easy Tank Cleaning (ETC) notation in mind, because it was understood that the corrugated bulkhead design of the cargo tanks, in particular, would minimise the clingage of previous cargo residues.

With reduced clingage and optimised tank cleaning capability, the challenge of switching from dirty to clean would not only become more manageable, it would also become a far more realistic proposition for charterers of such tonnage.

Marinvest also realised that having the most appropriate choice of vessel was only part of the challenge. A greater understanding of the mechanism of what happens when a black oil cargo is discharged would allow a more accurate calculation of the expected discolouration of any clean cargo, which in turn would encourage the development of new and innovative approaches to tank cleaning from dirty to clean cargoes in the future.

The most critical points were considered to be:

1. The amount/extent of residual black oil remaining on board after discharging and tank cleaning.
2. How quickly and to what extent white oils become discoloured with black oils.
3. Is the discolouration process linear or logarithmic? (It has to be expected that there will always be a finite amount of black oil remaining on board a vessel after tank cleaning, but of course this black oil will become extremely well diluted in the clean oil during loading. If this dilution process is linear, it becomes far more straightforward to calculate the expected discolouration of the clean oil when all cargo tanks are fully loaded).
4. Quantification of the extent of the discolouration. (The main issue that needs to be overcome surrounds the quantification of the colour of the 'pure' black oil and the fact that it does not actually have a defined value. If black oil had an arbitrary colour value of say 1,000, and it was known that this colour diluted linearly, it would be easy to calculate the maximum volume of black oil that could be absorbed into the clean oil and still maintain the export specifications of the clean oil. But of course, black oil does not have a colour value and that is what makes this problem so challenging).

One of the less obvious benefits of the DNV ETC notation is that the cargo tanks have a relatively low surface area to volume ratio (typically 0.4 — 0.6). Essentially this means that any residual black oil remaining on the surface of the cargo tanks after tank cleaning will be diluted to a much greater extent when that tank is fully loaded with clean oil.

Furthermore, a lower surface area physically reduces the volume of residual black oil in the cargo tank after cleaning. So overall, there is less residual black oil and greater dilution, both of which are clearly advantageous for the process of switching from dirty to clean.

Marinvest also employed the services of L&I Maritime (UK) Ltd, to set up a laboratory based project to investigate the discolouration potential of clean oil with black oil, in accordance with points 2), 3) and 4) above.

In summary, this project looked at the discolouration of two samples of clean oil with different colours, with varying amounts of black oil. The discolouration of the clean oil was measured on the ASTM colour scale using a portable colour comparator (in accordance with ASTM D 1500).

Test Sample	ASTM Colour (comparator)	Absorbance
0.5 CPP	0.5	0.175
0.5 CPP / 0.01% (w/v) black oil	closest to 0.5	0.210
0.5 CPP / 0.02% (w/v) black oil	Equally between 0.5 - 1.0	0.240
0.5 CPP / 0.05% (w/v) black oil	closest to 1.0	0.345
0.5 CPP / 0.1% (w/v) black oil	closest to 1.5	0.520
0.5 CPP / 0.2% (w/v) black oil	closest to 2.5	0.860
0.5 CPP / 1% (w/v) black oil	> 2.5	Off scale

Starting with clean oil having a given colour of 0.5 ASTM (termed 0.5 CPP):

Test Sample	ASTM Colour (comparator)	Absorbance
1.0 CPP	1.0	0.450
1.0 CPP / 0.01% (w/v) black oil	closest to 1.0	0.495
1.0 CPP / 0.02% (w/v) black oil	Equally between 1.0 - 1.5	0.525
1.0 CPP / 0.05% (w/v) black oil	closest to 1.5	0.630
1.0 CPP / 0.1% (w/v) black oil	closest to 2.0	0.810

Starting with clean oil having a given colour of 1.0 ASTM (termed 1.0 CPP):

The discoloured clean oil samples were also analysed using a visible spectrophotometer measuring absorbance at a fixed light wavelength over a path length of 25 mm, but it was understood, that the clarity of these samples (or lack of it), would directly impact the absorbance readings and these results would most likely not be definitive. The following results were noted:

The results proved to be very interesting and showed a clear indication that the discolouration of the clean oil with the black oil appeared to be more linear than logarithmic, for both the visual comparison and the light absorbance readings.

It is very difficult to define the trend further than this, because it is known (and therefore has to be accepted) that the ASTM colour standard does not represent precise colours; rather, each ASTM colour represents a small range, such that it is quite possible for two samples with visibly different colours, to both have the same ASTM colour reading.

But knowing the discolouration is linear is extremely important because it provides more confidence when dilutions of discoloured clean oil are being calculated.

Furthermore, the results of the laboratory work also indicated that each addition of 0.05% by volume of black oil to the clean oil resulted in an increase in colour (colour drop) of approximately 0.5 ASTM colour units. This information on its own is extremely useful to calculate the theoretical colour drop for any clean cargo, loaded directly after a dirty cargo.

Marinvest believed that a better understanding of how clean cargoes become discoloured provides far greater knowledge to monitor the discolouration during the loading process. Typically when a vessel loads a clean oil cargo directly after a black oil cargo, first foot loaded samples will be drawn and analysed. These samples are very often discoloured, but the extent of this discolouration should be far easier to relate to the export specifications of the clean oil and this will provide greater confidence to decide whether it is possible to continue loading or not. In the future, there is no reason why vessels will not be able to carry out on board testing of cargo samples (using the same portable comparative colour measuring device used in this investigation) in order to monitor the discolouration of the clean cargo during loading.

The model

So if it is theoretically possible to calculate the extent of the discolouration of a clean oil cargo with black oil residues, it should be possible to modify this approach by quantifying the volume of black oil

residues that are retained on board a vessel after cleaning and predicting the extent of the discolouration of the clean oil cargo, before any cargo is loaded onto the vessel.

This model could allow a vessel to stop cleaning earlier than would normally be anticipated and could also impact the choice and volume of cleaning chemicals used. Indeed, this is one of the approaches that Marinvest investigated, using one of the 75,000 dwt tankers with DNV ETC notation as a target vessel.

Typically, when cleaning from black oil to a clean oil cargo, the following cleaning operation would be expected:

1. All cargo tanks and lines well drained and stripped back to an ROT (or similar), adjusting ballast to ensure optimum trim and list where appropriate.
2. Six hours seawater washing with two fixed and two portable tank cleaning machines per tank. Start the washing at 50 deg C and continue heating up to 70 deg C.
3. Clean through ail cargo lines and crossovers.
4. Eight hours hot seawater washing with two fixed and two portable tank cleaning machines per tank. After approximately one hour, start injecting an IMO approved solvent based emulsifying cleaning chemical over a period of an hour, but typically 1 x 200 litre drum per tank.
5. Drain all lines and drops back to the tank and clean for another two hours with hot seawater.
6. Gas free and visual inspection. If the tank is not clean, steps D) and E) can be repeated, alternatively manual spot cleaning with an IMO approved emulsifier or degreaser may be sufficient.
7. Freshwater rinsing to remove the seawater residues.

If the cleaning is successful and no steps have to be repeated, this process would normally take seven days and consume approximately 3,000 litres of cleaning chemicals, assuming the vessel has 12 cargo tanks and two cargo tanks can be cleaned simultaneously.

The cost of this cleaning can be estimated as follows:

Time: Seven days at $15,000 per day = $105,000.

Cleaning Chemicals: 3,000 litres at $3.50 per litre = $10,500.

Bunkers: Each pair of cargo tanks is cleaned for approximately 16 hours with hot seawater, during which time the boiler is being run to produce the steam to heat the water. Auxiliary engines (A/E) provide the power for the tank cleaning machines.

The boiler and A/E both run on HFO and the consumption is based on 16 x 6 hours = 96 hours to clean the entire vessel.

The A/E consume approximately 1.5 tonnes HFO per day = 6 tonnes.
The boiler consumes approximately 10 tonnes per day (depending on seawater temperature) = 40 tonnes.
46 tonnes of HFO at $680 per tonne = $31,280.

With these figures in mind, it quickly becomes apparent why more efficient tank cleaning procedures are continuously being sought and why unnecessary tank cleaning/over-cleaning is so damaging to tanker owners and operators.

After the first hot washing cycles, the cargo tanks will become free of liquid ROB.

If it is now considered that the vast majority of the ROB black oil is removed by the temperature and pressure of the washing water during the first hot washing cycles (and this can be visually monitored) it could be assumed that the use of cleaning chemicals is not actually necessary and is primarily undertaken to make the cargo tanks looks visually cleaner, without actually removing significant additional black oil residues. Marinvest believed that the largest and most significant risk to the clean oil cargo is from liquid black oil ROB, not surface discolouration. Therefore, if ail liquid black oil ROB can be removed from the cargo tanks during the first round of hot seawater washing, it is really only the cargo lines that pose the greatest risk of contaminating the fully loaded clean oil cargo.

It is known that after the first hot washing cycles, the cargo tanks will become free of liquid ROB (as the picture above indicates) so the contamination potential from the cargo tanks will be restricted to the surface discolouration only, and it is possible to quantify this contamination based on the surface area of the cargo tanks.

As already noted, one of the characteristics of a vessel holding the DNV ETC notation is a relatively low surface area to volume ratio (typically 0.5). If it is then assumed that less than 25% of the internal surfaces of the cargo tank are discoloured by a layer of 1 mm of black oil (and from experience this is probably well in excess of what is actually observed, because it is really only the horizontal plates and lower sloping hopper Bides that are most at risk from clingage), it is fair to assume that this layer reflects the clingage of the black oil after the hot washing is complete. This clingage can be converted into a volume of black oil that will be completely diluted into the fully loaded cargo of clean oil.

Experience also suggests that there will be a maximum of 0.5 cu m of liquid oil remaining in each line after hot washing, with the crossovers free from any liquid oil.

If the volume of black oil associated with the clingage (after hot washing only) and the maximum expected volume of black oil in the lines are added together and this volume of black oil is assumed to be in the tank at the start of loading the clean oil cargo, the expected discolouration of the clean oil can be calculated.

Table 1 on the right refers to a typical 75,000 dwt tanker with DNV ETC notation and shows the 98% loaded capacities, surface areas (assuming a surface area to volume dilution of 0.5) and theoretical volume of black oil retained on the surface of each tank that is representative of the 1 mm layer of oil that is assumed to be remaining on 25% of the surface after hot washing:
Now if the volume of black oil representing clingage is added to the (maximum) volume of oil that

can be expected to be trapped in the cargo lines and this total volume of black oil is assumed to be fully absorbed into the clean oil cargo, the following discolouration calculations can be made on the first foot and fully loaded volumes (see Table 2).

In all cargo tanks, if the assumptions are correct, there will be approximately 0.02% of black oil fully diluted into the clean oil cargo after loading to 98% capacity.

In other words and in accordance with the generated laboratory data, the expected colour drop of the clean oil cargo will be approximately 0.2 ASTM colour units, if the cargo tanks are cleaned just by using hot water. This colour drop is theoretical, because the ASTM colour scale is measured in intervals of 0.5 colour units, so what does become apparent is that cleaning with hot water alone may actually result in no reported colour drop, because of the size of the ASTM colour scale.

The cost of the cleaning process is also significantly reduced:

Time: Four days at $15,000 per day = $60,000.

Cleaning chemicals: 0 litre at $3.50 per litre = Zero.

Bunkers: Each pair of cargo tanks is cleaned for approximately 16 hours with hot seawater, during which time the boiler is being run to produce the steam to heat the water. Auxiliary engines (A/E) provide the power for the tank cleaning machines.

The boiler and A/E both run on HFO and the consumption is based on 8 x 6 hours = 48 hours to clean the entire vessel.

The A/E consume approximately 1.5 tonnes HFO per day = 3 tonnes.

The boiler consumes approximately 10 tonnes per day (depending on seawater temperature) = 20 tonnes.

23 tonnes of HFO at $680 per tonne = $15,640.

Moving forward

It is accepted that a large part of this discussion is theoretical and the actual results achieved on board a vessel may be different. But the theory is based on a scientific approach and the assumptions of how much liquid black oil ROB will be retained on board are purposely worst case scenarios.

With this in mind, it is the opinion of Marinvest and L&I Maritime that it will be possible to develop and carry out tank cleaning operations in the future that consume less fuel, less cleaning chemicals and less time and still meet the demanding quality specifications of the shipped cargoes.

The key to the success of such a project is an understanding that most vessels switching from dirty to clean massively over-clean in order to ensure the quality of the clean cargo meets the required specifications; yet seemingly the use of cleaning chemicals is cosmetic rather than essential to the success of the operation.

Perhaps, a far better approach would be to accept that the clean oil will become discoloured during the early stages of the cleaning operation, but accurate monitoring of this discolouration (knowing that the dilution of the discolouration is linear and how much black oil can be absorbed) will provide the necessary assurances that the fully loaded clean cargo will be within the required quality specifications.

Furthermore, the ETC notation specifies that vessels should be able to maintain washing water at a temperature of 85 deg C and it is firmly believed that increasing the temperature of the hot washing from 70 deg C to 80/85 deg C will remove even more liquid black oil ROB, thus reducing the volume of black oil that will ultimately be absorbed into the fully loaded next cargo of clean oil. This can only reduce the discolouration potential of the clean oil cargo.

The above photograph was taken from a Marinvest vessel and shows samples of condensate loaded onto the vessel directly after a dirty cargo. The middle sample is taken from the vessel's manifold at the start of loading and the samples on the left side and right side represent the first foot samples drawn from the vessel's slop tanks, which would be expected to show the greatest level of discolouration. Clearly the discolouration of the first foot samples is negligible (if at all) and the vessel went on to successfully load the full condensate cargo, without any reported deterioration in the quality.

The reality would seem to be that switching from dirty to clean in a vessel designed to meet the DNV ETC notation, is now a far more realistic proposition than it was before the ETC notation was introduced. It should be accepted that the first clean cargo after a dirty history will be gas oil, and it should also be absolutely possible to expect that the discolouration of this gas oil cargo will be so slight that it may not even register on the ASTM colour scale.

Furthermore, once the vessel has loaded and discharged this first gas oil cargo, there is absolutely no reason why the vessel cannot be treated as completely clean, rather than having to carry two more cargoes of gas oil, before other (water white) CPP cargoes can be loaded. Bearing in mind the requirement to load three intermediate gas oil cargoes before a water white cargo can be loaded was introduced a long time before vessels were specifically designed to meet the ETC notation.

So surely, as the operational performance of the vessels continues to improve, the requirements governing these vessels should evolve at the same pace? Always considering that the final responsibility for the quality of the fully loaded cargo lies with the owners of the vessel anyway.

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*This article was written by Guy Johnson, director L&I Maritime (UK).

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