The Travestern berthing in the snow at VOPAK London terminal. with the ATD tug (see page 6) Svitzer Brunel assisting. Photo: JCB

In This Issue

Incident Procedures Advice  UKMPA
Editorial  JCB
Whither Towage?  JCB
Let’s injure a “tuggy”  JCB
Chairman’s Report  Don Cockrill
Piloting the “A” Class subs  Graham Wood
Pilot cutter “JH Fisher”  David Raddings
ECDIS update  Kevin Vallance
T&TC Report  Jonathan Mills
The Autonomous Ship  JCB
Coastlines  JCB
DIARY DATE

The 125th UKMPA conference will be held in

London on board

HQS Wellington

25th & 26th September

UKMPA CIRCULAR: Incident Procedures

All members should have received UKMPA circular 1 - 2013 which details the procedures to be followed should they be involved in any incident. Compiled by Ken Pound (Meridian Insurance) and UKMPA legal adviser, Barrie Youde, the importance of this circular cannot be over emphasised. The following outlines the key points but all pilots should read the full document which, if you haven't already received it, is available on the members’ area of the UKMPA website.

A UKMPA member is obliged under law to report and co-operate fully with his or her Harbour Master and should the member be summoned by the CHA to attend an interview they are entitled to be accompanied by a third party (preferably a colleague pilot). Any interview with the Harbour Master/CHA should be undertaken in private with no third party (other than the colleague) present.

In the event that the Marine Accident Investigation Branch MAIB become involved, they possess statutory powers and the member is legally obliged to co-operate with them at all times. The MAIB’s authority is solely to gather all relevant facts of the incident, they do not possess the legal powers to prosecute.

Breath-testing by a police-officer following any marine accident is now enforceable so it would be highly inadvisable for a pilot to decline to take a breath test at any time if required to do so by a police officer. Random breath-testing may also be required by a CHA and refusal to take such a test might give rise to an internal disciplinary charge.

Police Interview: Should a member be taken into custody under caution, he or she is under no obligation to answer any questions and should seek immediate legal representation as is their right. In the event of an incident in Scotland the procedure remains exactly as above. I recommend Barrie Youde be notified immediately via the Chairman or a UKMPA Section Committee member. It is important that Barrie Youde is not contacted directly by members for assistance.

The Maritime and Coastguard Agency MCA is prosecuting body in the same way as the police force. A request for an interview under caution by the MCA should be declined for the same reason as for the police interview.

It is hoped that this explanation of procedures and your rights will be of assistance if you are unfortunate enough to be involved in any incident. The procedure / contact details in case on an incident are contained on page 17.
The relationship between UK pilots and towage goes back to the 1830's when the concept of attaching a specially designed small vessel to tow bigger ships was first introduced into Britain. These first tugs were steam powered paddle tugs which, rather than being used to manoeuvre vessels alongside berths or into locks (which was still mainly undertaken using winches, capstans and manpower) were generally used to tow vessels up and down rivers and estuaries which considerably reduced the delays resulting from having to wait for favourable tides and winds. We are fortunate to have a record of this era in the form of the painting of the warship Fighting Temeraire (apparently referred to as the Saucy Temeraire by her crew!) by JMW Turner which depicts the towage of the vessel from Sheerness to Rotherhithe for scrapping in 1838. Widely regarded as Turner's greatest work it was voted Britain's favourite painting in a BBC Radio 4 poll in 2005.

The wonderful resource of the Internet reveals that the tug was the wooden hulled Monarch which was built by Edward Robson of South Shields in 1833. At just under 20m long she was fitted with a 20HP single cylinder steam engine! The Monarch was acquired by John Watkins & William Ogilby in 1834 and served the port of London until she was scrapped in 1876. Unfortunately, I haven't been able to find the name of the pilot!

Despite the advent of screw propulsion in the 1840’s the world of towage was very conservative and paddle tugs were still being commissioned as the tug type of preference late as 1899. This was despite the evidence from what must be the most famous “tug of war” in maritime history between the screw propelled HMS Rattler and the paddle wheel driven HMS Alecto in 1843 which proved conclusively that screw propulsion was more efficient with the Rattler pulling the Alecto astern at 2kts!

The major issue currently affecting UK Pilotage is the Marine Navigation Bill (2) which is currently proceeding through the Parliamentary process, as detailed in Don Cockrill’s Chairman’s report on page 9. What has become evident since 2010 is that the government’s agenda of removing legislative burdens on commercial interests across many sectors is not only blinding politicians to coherent arguments against proposed changes but, more alarmingly, is seemingly generating an almost evangelical belief that self regulation rather than statutory regulation will improve safety!

This has been particularly evident during the debates on the MNB (2) where Clause 2 seeks to amend the existing restriction within the 1987 Pilotage Act that a Pilot Exemption Certificate (PEC) can only be obtained by the “bona fide” Master or First Mate to permit any “deck officer” to obtain a PEC! Many of the reasons for the need to change the existing legislation put forward by the Bill’s promoters are illogical nonsense yet the coherent, professional arguments submitted by Don and others who have written to MPs and Lords challenging the promoters’ statements have been dismissed as whinges from a group only interested in self preservation!

UKMPA President, Lord Tony Berkeley, has tabled an amendment at the Bill’s committee stage to have clause 2 removed from the Bill but, without the support of other MPs, this amendment is likely to be rejected. Given the level of interest shown to date by our MPs & Lords, as revealed in these photos, such support is unlikely!

At the time of going to press the committee stage discussions on amendments haven’t been completed so any developments will be distributed by UKMPA circular. JCB
The Voith Schneider propulsion system is based on an invention by Ernst Schneider, an Austrian who designed it for use as a hydro-electric turbine. Although it proved to be no improvement on existing turbines for hydro-electric generation, a chance meeting with the Voith company led to it being developed as a propulsion system where its enhanced manoeuvrability potential was realised and then proven by trials on Lake Constance.

The manner in which the system works is too complex to detail in this article but basically vertical blades mounted on a rotating plate are angled to generate thrust which can be directed in any direction. For those interested, information and animations can be viewed on the Voith website (www.voith.com).

The Soviet Union continued to build paddle tugs up until the mid 1980’s and some of these are still in use, their shallow draught enabling them to work in shallow rivers where conventional tugs are unable to operate.

**Voith Schneider Propulsion (VSP)**

The Voith Schneider propulsion system is based on an invention by Ernst Schneider, an Austrian who designed it for use as a hydro-electric turbine. Although it proved to be no improvement on existing turbines for hydro-electric generation, a chance meeting with the Voith company led to it being developed as a propulsion system where its enhanced manoeuvrability potential was realised and then proven by trials on Lake Constance.

The manner in which the system works is too complex to detail in this article but basically vertical blades mounted on a rotating plate are angled to generate thrust which can be directed in any direction. For those interested, information and animations can be viewed on the Voith website (www.voith.com).

In 1929 a German minesweeper became the first ever vessel to be fitted with VSP and this was followed in 1931 by the first commercial vessel called the Kempten, an excursion vessel, owned by the German State Railway Company.

The advantages of VSP came to the attention of the Southern Railway Company who had Britain’s first VSP vessel, the MV Lymington constructed by William Denny and Bros in Dumbarton in 1938.

Fitted with twin Voith units this vessel
served on the Lymington - Yarmouth service between the Isle of Wight and the mainland between 1938 and 1972. In 1974 she was purchased by the Scottish Western Ferries company and renamed *Sound of Sanda* serving on the Hunter's Quay to McInroy's Point run until 1989 when she was switched to ferrying cement lorries to the Faslane naval base until 1992. Since then, despite attempts to restore and preserve her, she was stripped of her engines and abandoned as a hulk on mooring buoy.

Despite the evident advantages for manoeuvrability, tug companies were slow to adopt the Voith propulsion system with, so far as I can ascertain, the first Voith tug being the *Stier* constructed for German owners in 1955. The UK was then quick to realise the advantages of the VSP with several companies commissioning them in the 1960’s. One of the major advantages of this type of tug is that with the drive units being placed forward, the risks of "girting" and capsize were dramatically reduced. Voith tugs are also referred to as "tractor tugs"

In the 1980’s the twin Voith configuration enabled more power to be delivered and thus facilitated their use on larger tugs and they rapidly started to replace the traditional screw tug as the tug of choice for ship handling and they also serve well as sea towage tugs.

In London I was still a junior pilot when the first Voith tug (*Waterloo*) arrived to join the Alexandra fleet in 1992, closely followed by the *Sun Anglia* in 1993.

I recall that when their impending arrival was announced there were mutterings from some of the old pilots that they would never be any use on the Thames because of the strong tides. How wrong they were! These craft rapidly proved themselves to be not only excellent tugs but also they were popular with the tug skippers, a factor that cannot be overlooked when considering safe tug operations!

For us pilots, the capability to put a tug on a single line on a centre lead aft and move it from one quarter to the other in a few seconds made for safer and easier ship handling so we were all delighted when more Voith tugs appeared and by 1995 we were normally allocated at least one Voith tug for manoeuvring. By 2000 all the Thames tugs were Voith tugs but currently, the new tugs being introduced by Svitzer towage (who currently manage the main Thames tug fleet) as the older Voith tugs are replaced are Azimuth drive tugs. The *Sun Anglia* (Latterly *Svitzer Anglia*) referred to above only left London last October and is currently for sale, laid-up on the Tees.

**Azimuthing Stern Drive (ASD)**

Also known as Z-peller tugs and sometimes “reverse tractor”, this type of tug is currently a very popular model due to its efficiency and economy when compared to the Voith. Although the azimuthing drive was developed by the Schottel company in the 1950’s it was the British company JP Knight who were the first company to introduce an ASD tug in Europe in 1981 with the Japanese built tug *Kinross* which is still in service at Invergordon.

With twin drive units that can be rotated through 360 degrees ASD tugs are very manoeuvrable and, at first glance, seem to represent a return to the traditional tug format. However, the difference is that

**The Svitzer Anglia in Gravesend Reach in 2010. Note that the tug is steaming stern first. This is the normal steaming mode for the Voith tugs in the river since the wash is less than that generated when steaming ahead.**

*Photo: David Berg*
on this type of tug the towing winch is fitted forward rather than aft. The advantages of this arrangement are two-fold. Firstly they protect against girt ing and capsize and secondly they can rapidly change from pulling to pushing mode when made fast alongside on the hull making them ideal for handling tankers and bulk carriers. When made fast on the stern they, along with Voith tugs, perform very well as escort tugs. The big drawback with this type is in their restrictions for use as a bow tug made fast on a centre lead forward. There have been several incidents involving the loss of control of an ASD tug whilst operating in the “bow to bow” mode and pilots operating with ASD tugs should all read the MAIB report into the Thorrngarth-Stolt Aspiration incident. The problem for an ASD tug operating in this mode is that the tug is allowed to drift more than a few degrees of the ship’s heading alignment when the ship is moving at speed through the water it can become impossible for the tug Master to recover the alignment and the tug will be swept around under the flair of the bow. There is a very dramatic photograph of this happening to the tug “Fairplay 21” on the Internet. Having stated that, there are some ASD tugs with skegs which provide enhanced directional stability when running astern which enables them to operate at higher speeds but generally the maximum recommended speed for these tugs to operate in the bow to bow mode is 4 - 5 kts and some tug companies won’t permit their ASD tugs to operate in this mode at all. The consequence of these restrictions is that this can make their use with container ships largely impractical when made fast anywhere other than on a centre lead aft. The reason for this is that container ships are designed to go fast between ports and the large engine and propeller configuration can result in “dead slow ahead” speeds as high as 11 knots. Also the hull design has a large flare on the bow and also a cut away on the stern which results in a very small section of parallel body for a tug to push up on thus making it very inefficient to use tugs in the “push-pull” mode on these ships. This is especially the case for the forward tug which frequently has to move so far aft to be in a position to operate that it’s frequently aft of the pivot point! The other problem with these containerships is that they often have no towing bollards fitted on the main deck aft of the fo’c’sle!

### Azimuth Tractor Drive (ATD) Tugs

Also referred to as Azimuth Tractor or Azimuth Forward Drive tugs, this design is basically a twin Voith tractor tug fitted with twin azimuthing drives instead of the Voith Schneider units. We have two ATD tugs in London and the tug Skippers’ like working with them and confirm that they handle very much the same as a Voith. The increased efficiency is revealed in the bollard pull which is 60 tonnes for these tugs compared with 52 for the similarly sized Voith tugs in use. I also understand that the running and maintenance costs are cheaper than for a VSP tug.

### Z-Tech

As can be seen from above this is a variation on the Azimuth Tractor design with twin azimuthing units located forward but in a less vulnerable position being protected by the skeg and presumably this makes them a shallower draught than the ATD tug. I don’t have much operational information on this class of tug but from the promotional data they are basically and ASD tug with the wheelhouse moved astern and reversed, the advantage of this being that they can work closer under the flair of a ship’s bow than an ASD. I have no information as to whether they experience similar problems to the ASD when working as a bow tug at speed but the large skeg would seemingly offer good directional stability. I am not aware of any Z-Techs working in the UK.

### Rotor©Tug

The Rotor©Tug is a very interesting tug developed by the Dutch company Kotug which incorporates 3 azimuthing drive units, two forward and one aft. I must admit that I only learned that such a tug design existed a couple of years ago but have discovered that the design dates back to 1999 when a Kotug engineer came up with the concept in response to a tender for tugs from Milford Haven. Although Kotug didn’t win the Milford Haven contract they decided to develop the concept and there are now many Rotor©Tugs operating in Holland and Germany. The exclusivity of the design and commissioning now lies with Robert Allan Ltd and Rotor©Tug is a trade mark of the Dutch KST company.

The initial reaction of most companies is why on earth do we need three engines? The answer is not just that they are obviously extremely manoeuvrable but also flexible as result of the three engine configuration. The ability to operate on one, two or three engines not only makes them extremely safe in the case of an engine failure but also offers considerable fuel savings. Harbour tugs are fitted with very powerful and fuel hungry engines but this power is only used for a small percentage of the time when involved in manoeuvring ships. For the majority of the time, harbour tugs’ engines are idling on stand-by so being able to run on one engine when not actually engaged in towing is a major economy, an important factor given the increasing cost of bunkers.

6 kts sideways! A rotor©Tug on trials
Since June 2011, ship handling courses have operated from our purpose built Ship Handling Lake in Timsbury, near Romsey, Hampshire - the only of its kind in the UK.

Timsbury Lake is set in 25 acres of sheltered woodland and is ideal for you to perfect complicated manoeuvres before putting them into practise. Warsash Maritime Academy can exclusively offer training using a combination of both Manned Models and our sophisticated Full Mission Bridge Simulator.

The lake boasts 19 jetties, a straight and curved canal, buoyed channels and a harbour with restricted access and a finger jetty. The fleet consists of 7 models, 4 remotely controlled tugs and a jack up oil rig.

Over 30 years of experience in manned model ship handling training has enabled us to develop a lake that meets the demands of today’s seafarer. Our expertise is as good as our facilities with lecturers and instructors all being past or present senior seafarers and pilots.

Contact our Course Administrator on +44 (0)1489 556163 for details on the following courses:

- Manned Model Advanced Ship Handling
- Manned Model Ship Handling
- Manned Model Shiphandling Twin Screw
- Pilots Combined Bridge Simulator & Manned Models
- Pilots Emergency Procedures
- Pilots Professional Development
- Ship Handling Appreciation
- Ship Handling Skills Assessment

EDDY Tug

One design of tug that is brand new is the EDDY tug. EDDY stands for Efficient Double-ended Dynamic' tugs and features two azimuthing drives, one at each end of the tug. Baldo Dielen Associates Ltd (BDA Ltd) created the design and SMIT has participated in the development and model testing program. Although no EDDY tugs have yet been commissioned the designers claim that the design will offer superior safety, performance and economy. There is a portfolio of several different sizes but it’s probable that the standard model will be a general purpose tug 30m long and around 60 Tonne BP. Being double ended it is anticipated that the handling will be entirely intuitive and independent from the direction the tug master is facing. Each end classifies as bow and tank trials indicate that the tug performs well in either direction in all conditions. A central skeg is designed to provide good directional stability and a substantial increase in line force when operating in the indirect towing mode. The proposed towing arrangement is a double-drum towing winch with two towing fairleads, one for close quarters ship handling and one for (indirect) escort towing. The single deck level accommodation is designed to offer better clearance when working under the flare of large ships. Running “light”, an economical, low wake, 12 knot speed is designed to be achieved using a single drive unit. It can generate push and pull forces in any direction, with minimum delay. When assisting under speed, high dynamic forces of up to twice the tug’s bollard pull can be generated both by the stern and the bow tug since they are designed to be as effective at the bow as at the stern which is aimed to address the need by tug operators to standardise their fleets without the need to choose between ‘ASD’ or ‘tractor’ type tugs.

The above information has been provided by BDA Ltd who inform me that they are optimistic that a firm order will be placed for the first EDDY tug soon.

RAVE tug

You wait a whole career for a tandem propulsion tug to be designed and then two turn up together! Like the EDDY concept, the RAVE (Robert Allen Voith Escort) has a drive unit fitted at each end of the tug but in this design the units are Voith propulsion rather than azimuthing drives. It is interesting to see a new design using Voith units but in recent years a fundamental re-engineering of the units has resulted in an increase in efficiency and the advantages of more precise control of thrust and faster redirection of thrust make it competitive for certain applications. The RAVE is a big tug of around 37m and, as its name suggests it’s designed for escort work. Again I am not aware of any RAVE’s having yet been commissioned but the concept is gaining a lot of interest. JCB (See page 16)
Like most things in the shipping world as ships have got bigger, officers, crews, pilots and tug skippers have had to adapt their skills to cope with new challenges to achieve successful ship handling outcomes. Unfortunately the methodology mind-set of ship owners and berth operators hasn't moved with the times so outdated mooring and line handling practices persist which are now posing serious risks of injury or even death to personnel. One such area is the centuries old heaving line whose efficient simplicity has seen it universally adopted as the primary means for passing moorings and picking up messengers etc. and a skilled AB can throw such a line a remarkable distance with great accuracy!

However, in the last 20 years the advent of ships with high freeboards such as car carriers and ever larger containerships has rendered passing lines by means of a heaving line a futile exercise in anything more than a gentle breeze. So, how has the maritime world adapted to this? Well, instead of looking at more modern solutions the answer has, in many cases, been to enhance the performance and range of the heaving line by inserting a heavy weight into the middle of the "monkey's fist"!

This practice poses particular dangers for tug crews as the tug closes in to pass the tow line. These dangers were highlighted in a presentation given to the Marine Safety Forum conference last December by Svitzer’s Health and Safety officer, Scott Ward, which is available online at the following link:


One solution is the use of a sand bag in place of the monkey’s fist and I know that the pilots in Harwich take such bags on board the larger containerships to give to the crew to use when making fast the tugs but even this can be inadequate in very windy conditions when the tug has to manoeuvre very close under the bow of the ship with the tug crew trying to catch the heaving line with a boat hook. The dangers for tugs operating close to the bow were highlighted in Henk Hensen’s article in the last issue (310) and the difficulties in catching the heaving line sent from the Stena Britannica was a contributory cause of the tragic loss of the tug Fairplay 22.

In 2013 there’s got to be a better way of passing lines! One solution is the use of compressed air line throwing apparatus. This isn’t new technology, since I can remember such a gun being used by a bunker tanker in the Red Sea in the 1970’s. These throw a re-usable plastic projectile a considerable distance and can be carried on board the ship or a tug. Ed Neale’s VLCC article in the last issue mentioned that these are carried on the tugs at Milford haven and are proving to be safe and effective. The abolition of the traditional heaving line for many maritime applications is long overdue!

JCB
Chairman’s Report

Don Cockrill

With the festive season now a distant memory the year has kicked off at full tilt. Not only are we dealing with the usual challenges of the British winter weather, with many of us having our professional skills tested in numerous directions daily but also the ongoing political issues both in the UK and the EU demand similar vigilance and effort to ensure the highest possible standards of navigational safety are maintained within our ports, despite the best efforts of certain commercial enterprises to undermine them for purely financial reasons.

The week before Christmas saw the Transport Select Committee oral evidence session which I attended. The transcript of that session is “must read” for all UKMPA members and is available on the UKMPA web site – Government/TSC. As I write, we are awaiting the TSC report.

The Marine Navigation (No.2) Bill is continuing its passage through the House of Lords having been passed up from the Commons amended only by the government’s altered wording of Clause 2 to “Deck Officer”. A wholly vague, dangerous and professionally (as well as legally) unacceptable wording. Subsequently, about 60 Peers who have expressed interest in Transport matters and or shipping were written to by myself on your behalf. Additionally, following my encouragement to you to do so, a number of pilots also wrote to Peers, two being referred to during the proceedings of the Second reading on 18th January. Despite all the irrefutable factual, professional and legal arguments put to the Lords by the Lord Tony Berkeley and the Lord Chidgey, their Lordships chose instead to listen and accept the misleading and spurious arguments propounded by the pro-government sponsors and supporters of the Bill. The transcript is available on the UKMPA web site – Government/Dft. As I write, the Bill progresses on to a full Committee stage, date to be confirmed.

To those pilots who made the effort to write to Peers (and MPs before-hand) the Association offers you our thanks. Those of you who for whatever reason did not write, either to your MP or a House of Lords’ member may wish to reflect on the ultimate effect such inaction may have on our profession and more importantly the safety of navigation within UK ports in the years ahead.

In the EU, the ports policy review held a Public Meeting on 18th January. A short summary paper of the findings of the Price Waterhouse Cooper questionnaires was published shortly before the meeting and can be found on the UKMPA website under the Government-EU tab. Meanwhile, issues all very relevant to UK pilotage are ongoing in the guise of competition, PECs and concessions.

Staying with European matters, all UKMPA members will have received the formal invitation to attend the 2013 EMPA conference in Malta April 24th - 26th, www.EMPA2013.com. All UKMPA members are invited to attend what promises to be a great event at a very special location.

Within our Association itself it is a pleasure to be able to report an increasing membership which will soon be enhanced with the addition of pilots from non-Dft authorised ports and Associate membership. Application forms for all three membership categories are available on our website, so if you have friends or ex-colleagues now working as pilots abroad or in the UK outside of the 1987 Pilotage Act jurisdiction who have expressed an interest in joining the UKMPA, please direct them to the website.

All members received circular 26.2012 advising of the subscription collection method change to Direct Debit and subsequently the associated paperwork. Hopefully by the time you read this you will have returned the Direct Debit form. Having a uniform system of subscription collection via 21st century banking methods not only saves the Treasurer significant time in not having to send out quarterly notices or chase late payers, (not to forget that he has (unacceptably) had to deal with 40 different systems of subscription collection) but it also saves us money – your subscriptions. That this change has caused some inconvenience to every member is understood but ultimately we all benefit from a streamlined collection system.

You will be aware that over the last few years Section Committee has endeavored to be less London centric and meet at locations around the country using the opportunity to discuss various issues with Local Secretaries and district association Chairmen. This year we will be visiting Belfast, Southampton, London (with conference) and Middlesbrough. In addition, I am happy to attend local general meetings (subject to my availability of course) to discuss any matters requested.

2012 was a significant year for the UKMPA which saw pilots playing significant roles in national events and within the international pilot community. In 2013 we must continue to look to the future to see how we can further enhance the impact of our Association on the safety of navigation within UK waters and further afield, educate our government administrators to the true reality of 21st century shipping operations, play a greater role in matters of European and International pilotage and strive to maintain and where possible improve the panoply of professional expertise that define a competent pilot.

Finally, from the way in which the Marine Navigation (No.2) Bill has progressed over the last seven months and taking into consideration the naive manner in which Pilotage is regarded by our national administrations and industry bodies, it is incumbent upon UKMPA members to strive to maintain safety navigational standards in UK ports. It is clear our government is not truly minded to do so effectively despite its rhetoric.

Without a collective countering effort (that means by you the membership) those unscrupulous operators in shipping who seek to maximise their profits at the expense of society will prevail and we will only have ourselves to blame for the consequences. Pay close attention to defective pilot ladders, be safe and above all take pride and enjoy protecting the environment and maintaining the safety and efficiency of navigation in our ports for the benefit of our nation.
Piloting the “A” Class Nuclear Submarines
Graham Wood (Barrow - in - Furness)

We are all used to being faced with new challenges in piloting as new trades and ship types arrive to test our versatility but very few of us are expected to pilot a totally new vessel constructed in secret with unknown handling characteristics in full view of the world’s media! This was the unique challenge handed to UKMPA member Graham Wood, when the decision was made to construct the navy’s new generation of nuclear submarines at Barrow. The following article is Graham’s account of his experience in piloting the Astute and Ambush submarines. The text has been vetted by the MOD so consequently lacks some of the elements that Graham would have liked to have included! Members will, of course, fully appreciate the considerable skills that piloting such unusual vessels with a totally unique towage arrangement that the operation required. As was aptly pointed out to me when I first started piloting VLCC’s with four tugs, “never forget that you are now piloting five vessels”!!

Barrow has a long and proud history of building submarines for the Royal Navy. The first of a new class of seven, nuclear powered, hunter-killer submarines, HMS Astute, emerged from BAE Systems’ Devonshire Dock Hall and onto the ship lift in 2007. After over two years at the fitting out berth she sailed for Faslane and acceptance trials in November 2009. HMS Ambush followed in September 2012.

Planning for the Astute “exit” (never referred to as departure or sailing) was well under way when I arrived in Barrow (ex-Humber, ex-Liverpool) in 2003. It is difficult to grasp, let alone describe, the vastness of the whole project and all the issues involved. I should also explain that my role here in Barrow is that of Assistant Harbour Master as well as Pilot, so that there was involvement in a wide range of preparations including a huge dredging programme. PEC tripping on various dredgers and the inevitable delays to normal commercial trade caused by restrictions on the use of dock/lock gates to satisfy the nuclear safety case stretched our marine and pilotage resources to the limit. There were countless other tasks.

Vessel Information
The submarines are 98m (LOA) x 17m beam at the aft hydroplanes which are always submerged and, being very important bits of kit, are marked for the dock passage by flags on poles. The submarine is conned from on top of the “fin” since visibility is restricted from the normal Control Room navigation position. Thermal underwear is therefore an absolute requirement!

My first involvement with Astute as a pilot was to attend the simulator at the MARIN Institute in Holland in early 2007. This was a simple set of exercises, using minimum personnel, just to prove that the Barrow Channel was adequate to deal with the vessel. It also introduced us to the Dutch “designed” pilotage/tug strategy for the exit from Ramsden Dock Basin and the Channel passage, using four Voith tugs. The many subsequent visits to MARIN, for both Astute and Ambush were always attended by a full RN navigation crew, tug skippers, BAE Systems staff and two pilots. My understudy for both ships was Mark Bray, a former Barrow Pilot now at Southampton.

Pilots were also involved at the launch of each boat, using local work boats to shift them from the ship lift to the fitting-out berth, and from the fitting-out berth to the basin dive hole (c.20m deep) in Devonshire Dock for trim/dive trials.

The Dock Transit (Draught 9.3m)
This leg which is about 1.5 miles is undertaken as a dead tow using three local Damen (10 tonne BP) work boats and two (3 tonne BP) shipyard boats. These comprise one head tug, two stern boats (tugs cannot “cross” the stern owing to the sub’s rudder fouling the lead), and the small shipyard boats made fast, which push/pull abaft the forward hydroplanes. The dock has to be pumped up to a level beyond the normal maximum (above cope level in places) to create sufficient depth of water in the channel which is just 24m wide at its narrowest point. Temporary leading marks are established to mark the channel at the critical points. The main problem areas are the Michaelson Bridge Passage (24m), the old Bucleuch Dock passage (about 35m) and the lock (200m x 30m). An (unpowered) centering/lead system is used to assist at Michaelson Passage and at Ramsden Dock Lock.

With Astute (Boat 1) the larger (Svitzer) Voith tugs planned for use in the exit from Ramsden Basin and the Channel passage, were also used in the dock – but solely as a rehearsal for making fast and letting go in the Channel. The tie-up for these is quite complicated, with each tug having four lines up to the submarine, all of which have to be capable of being released in the correct sequence. Since the channel configuration does not permit tugs to be permanently secured to the submarine, for the
first dock transit each tug had to make fast three times and let go twice, and none was involved at the critical points. As a result of lessons learnt from Astute this procedure was not repeated for the Ambush (Boat 2) exit. Also for Ambush, two of the larger tugs were used purely to stand by in case of emergency.

The Channel Transit (Draught 10.3m)
The sea channel is 8 miles long with a width of 90m at the inner and increasing to 140m at the outer end. The minimum required tide height is 8.5m; and subsequent tides must be rising; and weather criteria must be satisfied. A definitive graph (about 180 pages of it) covers all possibilities of tide and wind, and a Met Office man is on site for a week before sailing. Wave effect (pitch and heave) is a major consideration in the Outer Channel.

There is normally a planned delay of about 24 hours between arriving in Ramsden Basin and sailing to allow for various tasks, such as final storing and trim adjustments for the sea passage. However, owing to adverse weather forecasts, Ambush had to do it all in one day. This was a huge achievement by the shipyard staff.

The south side of the Basin and the dock entrance (36m wide) are lined with neatly tessellating fenders, a job that can only be completed when the outer gate is opened at about an hour before High Water (HW). Only then, and after a diving inspection to check that the gate (a “flap” gate which lowers to lie flush on the bottom) is locked in position, can the submarine proceed to sea at around 40 minutes before HW

This manoeuvre, and the tug disposition, was designed by Pieta Kluytenaar, a Dutch ship-handling consultant, in conjunction with MARIN. Essentially four Voith tugs are strapped alongside, two each side between the hydroplanes (a very tight fit). Then the whole job is moved ahead using the port side tugs to slide along the fendering. The after tugs are used to give headway and the forward boats for stopping/sternway.

Once clear of the entrance the submarine’s own power can be engaged but since she needs about three knots for steerage way, the initial turn to port (2 kts) is controlled by the stern tugs “pushing on” to steer since the forward tugs are effectively on the pivot point. The forward tugs are let go after the first turn is completed and the speed is increased to about four knots. The two remaining tugs are let go at about 1.5 miles from the dock entrance, once everyone is happy that all is well! The speed is then increased to eight knots for the remainder of the channel passage with all the tugs remaining in close escort. The Commanding Officer takes control once the tugs are let go.

For Astute departure, Svitzer supplied the four Voith tugs. These came from various ports round the country and a fortnight’s bad weather resulted in some late changes. This made life difficult since the tugs had to be fitted with temporary fendering (diving job) to protect the submarine’s sonar arrays. A further problem with the Astute was encountered when letting the stern tugs go in the Channel which resulted in the last ropes from both tugs having to be cut since an unwanted sheer had been imparted to the submarine, which caused some anxious moments!

This problem was rectified for Ambush, but the tug provider was changed to Serco as Svitzer could no longer guarantee to support the project. This switch also resulted in a change in tug types since regrettably, excellent as they are, nobody is building new Voith tugs and those that remain are ageing. As a consequence, “the plan” was modified to use two AFDs forward and two ASDs aft. The Serco tugs are also now permanently fendered for use on these submarines, which is saving a lot of bother.

Boat No.3, HMS Artful, is programmed to launch in 2013 and sail in 2014, by which time I shall have retired. I wish my successor all the luck and satisfaction that I have enjoyed when his turn comes round.
This year marks the 50th anniversary of the severe winter of 1962 -63 which lasted from December to March and saw major rivers such as the Thames and Humber freeze over. Despite the Arctic conditions trade continued and pilots continued to ensure that shipping movements suffered the minimum possible disruption. In the early hours the 12th January 1963 the Humber cruising cutter J H Fisher was on station 2 miles SW of Chequer Light. It was 03.50hrs and the Esso Glasgow's stem was embedded 2 feet into the cutter's hull at the engine room. At this point, pilot Ernie Sanderson climbed on to the Esso Glasgow's stem in his raincoat & pyjamas and headed for the bridge where he allegedly greeted the Captain by saying "Good morning Captain, we usually send the boat!"

During the next 1.5hrs the cutter drifted 5 miles with the flood tide and sank near to where the Mono Buoy is located today. I took other pilots to several ships in this 1.5hrs, "Semper Paratus" (Always Prepared, the Humber Pilot motto) we had carried on boarding! During this time I believe that only slight damage was found to have occurred to the port motorboat & its rigging and therefore after some attention the boat was lowered and used as a platform by Captain (Mike)Duncan, who was a man of large stature and strong physique and is thought to have jumped into the ice-cold sea to try stuff mattresses into the hole left by the Glasgow. When the sinking was seen to be inevitable, the Spurn Life Boat took all those remaining on board safely off, transferring the pilots onto the temporary pilot cutter!

Compiled by David Raddings.

This is just a small sample of the accounts collated by David. The full accounts can be accessed at: http://ebookbrowse.com/pilot-cutter-humber-jh-fisher-doc-d19252413

The following account is from David Walker who was an apprentice and the youngest person on board at the time:

"I remember that morning, it was a heavy snow blizzard and I'd just finished cleaning out the side houses (toilets), when all hell broke loose. Somebody had run forward to ring the bell like crazy, the alarm bells were ringing and then the Esso Glasgow's bow hit our port side and cut into the engine room. Mick Duncan, told some of us to drag all the mattresses up on deck, but this was stopped when she started to sink. He then ordered everyone to get off, so the starboard motor-boat and lifeboat were dropped by apprentices and pilots, and we cleared the ship as fast as we could. Whilst in the boats, we watched the Fisher slide down.

The next thing that I remember, was the Glasgow re-appearing out of the snow, and the crew had thrown rope climbing nets over the side, so we all managed to climb on-board her."

David omits to mention the freezing cold on that extremely dark winter's morn, but as a lad it must have been no less than frightening.

Martin Proud was a 3rd Class pilot at the time and recalls:

At 02.30hrs Saturday I was called for a ship but was then told it was the Esso Glasgow which was too deep for me and so I waited in the lounge. Later, I felt a collision bump, nothing much and headed for the port side Steerage door. It was 03.50hrs and the Esso Glasgow's stem was embedded 2 feet into the cutter's hull at the engine room. At this point, pilot Ernie Sanderson climbed on to the Esso Glasgow's stem in his raincoat & pyjamas and headed for the bridge where he allegedly greeted the Captain by saying "Good morning Captain, we usually send the boat!"

This less than noteworthy observation hardly reflects the gravity of the situation that befell those aboard. From 03.50hrs, in night's darkest hour, on that bitterly cold Saturday morning, with a blinding snowstorm raging, the Captain & crew were left fighting desperately to save their ship, while Pilots pulled together to keep their Service working in that ever traditional manner known only to them. Neither of the two statements actually reflects any of the real-life drama aboard the cutter. The following stories from those on board at the time may dispel the apparent presumption, that it was just a bump in the dark!

The following stories from those on board at the time may dispel the apparent presumption, that it was just a bump in the dark!
The Pilot Cutter, *J H Fisher* was launched on 19th December 1930, the last steam cutter built for the Humber Pilots. She had an LOA of 140 ft (42.7m) and was fitted with electric lighting and steam heating with accommodation for 36 pilots in 10 staterooms. Remaining in service on the Humber station throughout World War 2, *The J H Fisher* was not immune from attack and on March 7th 1941 she was at anchor close in shore to the west of Spurn Point when she was subjected to a low level bombing attack.

David Raddings' father, the late John Raddings was on board at the time and has left the following account of the attack:

“At about 12.30 pm having finished my dinner, I went up to the bridge to relieve the watch pilot, H. Carlisle. The weather was moderately clear and calm although the cloud ceiling was rather low. Suddenly I saw an aircraft appear from out of the clouds to the east, flying straight towards our ship. I said to my ship mate, who was on the point of leaving the bridge, Look, there Horace, here comes an attack. I mounted the ladder to the wheelhouse top, trained the Lewis gun on the enemy, and waited till the aircraft was at close range, then opened fire. The ammunition pan contained but a few rounds, so I was only able to fire a short burst. This must have been sufficient to distract the pilot because he released his bombs a fraction of a second too late. The two missiles passed over the cutter. The nearest passed between the funnel and the masts and in between the davits that lift the motor boat, which luckily was in the water. This bomb just cleared the deck margin by inches and hit the water at an angle, only a couple of yards from the ship’s side. Both bombs ricocheted and did not explode until they hit the water a second time. The explosion did little structural damage but the cutter was shaken badly and some internal damage and breakages were sustained.”

*SS “J H Fisher”*

David recounts that the apprentices lived in a cramped space in the bowels of the cutter!
The UKMPA Technical & Training Committee (T&TC) continues to be one of the most important groups within the UKMPA. The last meeting was held on board the HQS Wellington on the 15th November. The following account is edited from the full minutes submitted by T&TC Chairman Jonathan Mills (Medway), which are available for members on the UKMPA website.

RNLI Liaison
Given the similarity of operational requirements for pilot cutters and lifeboats, the UKMPA maintains close contact with the RNLI. John Nurser, who has been a regular attendee at the T&TC meetings for several years has recently retired and, although he wasn’t able to attend this meeting, RNLI’s Chris Squires will be continuing this long standing association. One area of joint interest has always been launch seats. Nick Lee (London) explained that there had been a number of arm rest failures on the PLAs new launch and the committee discussed the importance of seating, seat belts and Pilots’ posture in launch seats, it was agreed that Kab seats were not ideal and any alternatives were welcomed to the market.

Whole Body Vibration Monitoring
(see Pilot 308), This is becoming relevant to Pilots as monitors are developed and since some cutter operators are already using such monitors, there was a discussion on their benefit to Pilots.

IMPA.
Nick Cutmore (IMPA General Secretary) provided feedback from the recent IMPA Congress in London; which had been a wonderful showcase for the UKMPA. It had also been an opportunity to informally discuss piloting issues with other bodies. Nick stressed the importance for IMPA to have its members on various committees and lobbying through national envoys has also proved useful. The IMPA survey is still being evaluated and the results will be released in the future.

Portable Pilotage Units. With several UK ports either using these or considering their use a discussion was held on the use and accuracy of PPUs on large vessels in confined waters along with the need for comprehensive training.

PPE
Following correspondence between members before the meeting there was a brief discussion on the merits of Float-coats using buoyancy aids of the highest rating of 275N. It was agreed 275 only seem to be required if you are carrying tools or heavy equipment – possibly including PPUs. Pilots are reminded not to wear rucksacks over floatcoats and that carrying a PPUs should not impede a Pilots safe access.

Head Protection
Tim Wingate (Aberdeen) demonstrated the type of headgear used in Aberdeen. Their choice is the Prezl helmet used for sports such as cycling, kayaking and climbing, however, analysis of accidents involving pilots had revealed that headgear hasn’t so far been an element.

Clipping onto cutter rails
There is no agreed policy either nationally or district wise and the difficulties of introducing such a ruling were discussed especially given that new factors such as toxic shock resulting from harness use have been identified.

Peer Support
The committee was joined by Don Cockrill and John Pearn to discuss this issue. Setting up a stand-alone system would be highly complex so the UKMPA is going to look at professional counselling services available in the UK which offer both telephone and face to face help. Given the need for immediate post incident advice it was agreed to ask any chosen provider to provide this.

Azimuthing Control Devices
Tim Wingate showed a basic guide for using pod propulsion units in Aberdeen. Given the dearth of material regarding this propulsion system, the T&T C considered that such a guide could possibly be adapted for all pilots.

Boarding & Landing Code
This is currently being updated by Jonathan Mills’ and should be available by the end of February.

ECDIS & Training
ECDIS training is currently a major issue for the whole industry and the committee acknowledged the valuable practical input on the topic from Kevin Vallance (see page 13). For pilots it’s considered that only approved courses should be considered but that ECDIS should only be used as another aid to supplement traditional piloting skills.

Security.
Members welcomed the way Liam raised the subject at the last meeting and closer ties with security services are being developed in some districts.

Certipilot (See box below)
Martin Chatterton and Jonathan Mills, attended the first conference last July in Malta which proved to be worthwhile since it’s important that the UKMPA are fully involved in this project.

PEC
Assessment criteria in each district were discussed.

Human Element Advisory Group
Don Cockrill attended a recent meeting and recommended a regular T&T C member attend, SC will discuss the matter. Katherine Drevitt from Warsash has been in correspondence, Jonathan Mills and Chris Hoyle (Southampton) will keep in contact. Nick Lee discussed Project Horizon which looked at seafarers working hours, David Roberts felt that though the project gave a lengthy conclusion to its work it gave no recommendation on how to improve working rosters.

The Chairman thanked IMPA for hosting the committee and providing lunch. The meeting was closed at 1600. The next meeting is scheduled for 3 or 24 April 2013 provisionally in Bristol.

Once again, a long but very useful and fruitful meeting. I would personally like to thank all members of the T&T Committee for their unstinting work and enthusiasm.

Jonathan Mills

CERTIPILOT PROJECT
The aim of this project is: “Creating a framework for vocational training qualifications of maritime pilots. Through CERTIPILOT, for the first time ever, it will be possible to take into consideration formal, informal and non-formal learning of the Maritime Pilots. Moreover, the issue of recognition of qualifications is addressed in a holistic manner, thereby, not focusing just on one specific training programme.”

Further details can be found on the CERTIPILOT website: www.certipilot.eu

CERTIPILOT website:
I can recall that back in 1969 when I was a pre-sea apprentice and America landed a man on the moon the concept of unmanned ships proceeding between ports was a topical subject in the maritime press. During the last four decades the concept has simmered on the back burner without much impetus but recently there has been a considerable revival of interest in the concept. Last December a seminar on Autonomous Ship’s was organised by the Royal Institute of Navigation and one of my London colleagues attended and submitted the following report. JCB

Held at the Inmarsat HQ in London, around 50 delegates were present with a panel of 6 speakers. Most of the delegates came from technological firms and there were also academic persons from a few universities. Very few of the delegates came from the maritime industry, but there was a representative from the MCA.

The seminar consisted of several presentations by those with a professional interest in autonomous systems although none of them appeared to come from the maritime industry.

The idea of the seminar was to consider whether some of the technologies used in other areas of transport that are autonomous could be applied to ships.

The Technology Strategy Board (TSB) [an executive non-departmental public body, established by the Government in 2007 and sponsored by the Department for Business, Innovation and Skills (BIS)] is currently running a competition entitled Vessel efficiency: Piloting UK marine and maritime innovation. They are offering a prize of £8m towards Research and Development to the best proposal for a project which delivers viable solutions for more efficient marine vessels. A speaker from the TSB Knowledge Transfer Network outlined the scope of the competition. Further details on the TSB web site. http://www.innovateuk.org/content/competition/vessel-efficiency-piloting-uk-marine-and-maritime-.ashx

The seminar chairman, Dr. Andy Norris opened the seminar by explaining some of the bureaucratic obstacles that might prevent Autonomous ships. Firstly getting IMO approval would be a long drawn out affair since it might take 7 years from conception to implementation and as yet the matter is not even being considered(by IMO). Dr. Norris was also of the opinion that the COLREGS would have to have several amendments made to them in particular, rules with reference to sight, visibility, sound signals, and hearing. Again this would be a lengthy process. However, he went on to inform delegates that since the year 2000 several organisations have demonstrated automatic collision avoidance decision making processors designed for maritime use.

The speakers gave various examples and explanations particularly of autonomous aircraft. This gave the impression that there’s a thriving industry in this sector, much larger than I previously thought. Explanation was given about how the software that controls them and how collision avoidance is effected. Further presentations were made, firstly by an oceanographer concerning his underwater vehicle that was fitted with collision avoidance sensors which enabled it to navigate in the antarctic avoiding the ice, followed by a representative from a satellite company which illustrated some aspects of the autonomous control used. Later there was a presentation from Inmarsat who are quite clearly very excited about the business opportunities for the company that the advent of autonomous ships could bring since Inmarsat is the World’s leading marine communications company.

All these presentations generated an atmosphere in the room of “look, this is what has been achieved already with aircraft, underwater vessels and satellites, next on the agenda is shipping which should not be too difficult.”

Delegates were given a guided tour of the Inmarsat satellite control room, which looked a bit like mission control Houston!

At the end of proceedings, a panel was formed consisting of most of the speakers and all delegates were invited to put forward questions. The question I wished to ask was what was the panel’s view of things should a cyber-terrorist decide to attempt to infiltrate the system for controlling a super-tanker or a 400m Container vessel, resulting in loss of control of the vessel and an incident with the loss of a vessel and pollution. When I asked this question, there was a moment of silence before Andy Norris, agreed that was a very good point, and asked the panel to respond. The answers they attempted to give were a long way short of convincing, indeed it appeared that they really had not considered this factor and didn’t have an answer. Dr. Norris commented that a determined cyber-terrorist would be attracted to the biggest and most valuable targets, and shipping falls into this category.

After this the MCA representative advised the panel of some points that would need to be addressed such as:

- Reliability of the equipment,
- Uncharted areas of the World
- Reliability of communications
- Maintenance of the vessel
- Vessel in heavy weather experiencing hull stress and torsion

All of these factors will need to be considered in detail. Also there was the question of the Voice Data Recorder in the case of an incident. Dr. Norris had already commented that with respect to changes that would be needed to the COLREGS, when an unmanned ship is in conflict with a manned ship who has priority?

So as you can see there are plenty of serious points to consider when it comes to Autonomous ships.

The Royal Institute of Navigation are holding a further seminar on this topic in Southampton on February 21st.

Although embryonic, this agenda is currently being driven by technical experts who have little idea of how ships operate so the input of professional mariners is vital and will therefore be followed closely by the UKMPA. JCB
This quarter’s feature on tugs was collated from various sources and I hope that it has helped to update readers on the various types of tug, their advantages and limitations. Henk Henson provided me with some useful contacts but a particularly valuable resource was a presentation on tugs by the well known tug expert and author, Jack Gaston, who kindly gave me permission to plagiarise his work* and to use the picture below. Jack is a skilled model maker and he explained that his daughter presented him with the, originally static, duck display model as a challenge to transform it into a remote controlled model, which, as you can see, was achieved without problem much to the delight of Jack’s grandsons and, no doubt, all the onlookers at the local pond!

*TJack’s presentation can be accessed at:  

On January 14th a major fire broke out at Sheerness docks. Three of Svitzer’s tugs moored nearby were quickly on the scene and joined the fire brigade in tackling the blaze. Local Fire Officer Jamie Ashby was very grateful for the tug assistance and said that at least another two warehouses would have gone up without the impressive power and volume of the tug’s water cannon. He stated that it was the quickest he had seen a fire of that size put out.  

Photos: British Tug Owners Association website

As the Marine Navigation Bill sails through the Houses of Parliament and Lords and politicians blindly ignore logical and coherent professional arguments against the de-regulation of the PEC regime, I was delighted to observe that in my home port of Sandwich, traditional standards are being maintained on the river as the Master and his “bonio fido” Mate manoeuvre the river tour boat alongside the quay. Sorry!

AT LAST! ARCTIC CONVOY VETERANS ARE TO BE HONOURED WITH A MEDAL

Veterans of the Arctic convoys that supplied Russia with vital fuel, food and munitions during World War 2 are finally to be awarded their own medal after years of campaigning for official recognition of their bravery. A review of medals policy has concluded that the Arctic veterans should have their own medal. The announcement was criticised by some convoy veterans, who said it was tainted by the fact that it had taken so long to recognise the courage of thousands who had died while wrangling over protocols continued.

92 year old Commander Eddie Grenfell, said “it should not have taken 67 years to get the recognition of a star medal. We are pleased but not delighted. As soon as David Cameron came to power I reminded him of the promise. Only now has he got around to doing it. In the meantime God knows how many of my Arctic convoy chums have died waiting for these bloody politicians who have never heard a shot in their lives to make up their minds.”

More than 3,000 seamen were killed during the convoys with 85 merchant ships and 16 Royal Navy vessels sunk. Over 66,000 men sailed on the convoys, but only 200 are alive today.

However, veterans will not be able to receive their medals immediately. The Ministry of Defence has to draw up eligibility criteria before it will award the decorations, and that could take months.
Whatever your outlook... whatever the conditions... whatever your position...

Night or Poor Light Navigation

Confined Berthing Solutions

Channel Navigation

Poor Visibility Navigation

AIS Acquisition

Riser Monitoring

We have the solution for you

www.navicomdynamics.com

Navicom Dynamics
Precision Portable Navigation

Navicom Dynamics is proud to present the ChannelPilot MK2. Now with AMSA/USCG Compatible MF beacon DGPS option.
The original combination coat & lifejacket

first choice for professional mariners worldwide

- Featuring an integrated 150N lifejacket
- 100% waterproof, breathable fabrics with colour options
- Embroidered logos & crests
- Extensive options list
- Build-a-coat (to your requirements) on our website
- CE Approved

The coat that becomes a lifejacket in less than 5 seconds

Telephone: +44 (0)1983 282388   Email: factory@seasafe.co.uk

SeaSafe Systems Ltd,
Mariners House, Mariners Way, Somerton Business Park,
Newport Road, Cowes, Isle of Wight PO31 8PB England

www.seasafe.co.uk