

flash

W I N T E R 2 0 1 5 I S S U E 2 4

ANTARCTICA BY A TRINITY HOUSE YEOMAN

A former cadet's journey south to the ice

NETHERLANDS MARITIME SAFETY

How the Dutch manage their aids to navigation

MARINE ACCIDENT INVESTIGATION BRANCH

How marine accidents are investigated



Trinity House

Master – Her Royal Highness The Princess Royal KG KT GCVO

Corporate Board as at 1 October 2015

- Captain Ian McNaught MNM (*Deputy Master*)
- Simon Sherrard Esq DL (*Rental Warden*)
- Captain Nigel Palmer OBE MNM (*Nether Warden*)
- The Rt Hon The Viscount Cobham DL
- Captain Roger Barker FNI
- Captain Nigel Hope RD* RNR
- Captain Stephen Gobbi JP MA LLB
- Rear-Admiral David Snelson CB FNI
- Commodore Bill Walworth CBE MNM RFA
- Commander Graham Hockley RN (*Secretary*)

Lighthouse Board as at 1 October 2015

- Captain Ian McNaught MNM (*Executive Chairman*)
- Captain Roger Barker FNI
- Captain Nigel Palmer OBE MNM
- Jerry Wedge Esq
- Mrs Dawn Johnson
- Professor Peter Matthews
- David Ring Esq
- Jon Price Esq (*Secretary*)

MANY THANKS TO EVERYONE WHO CONTRIBUTED NEWS, features or pictures to another issue of *Flash*, and thanks of course to all staff and members of the extended fraternity of Elder and Younger Brethren who make Trinity House such an interesting place to work and – I think – to read about.

Just as we have readers from all over the world, our ongoing series looking at lighthouse authorities and aids to navigation providers from across the globe continues in this issue with a fascinating look at Dutch maritime safety.


We also have a report from one of our former cadets – known as Yeomen – as he joins a ship travelling to Antarctica, and it's great to hear another success story from this vital but relatively little-known aspect of Trinity House's work. I'm happy to say that we can expect to hear much more from the Yeomen as they start their careers in the maritime sector, whether afloat or on shore, in future issues.


We welcome contributions from anyone and we're open to suggestions and feedback. Please get your submissions to me for the next edition of *Flash* by 18 March 2016.

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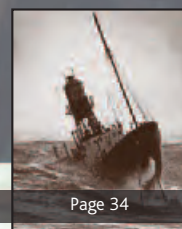
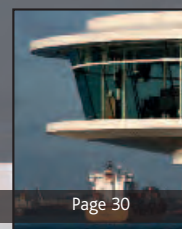
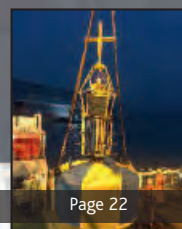
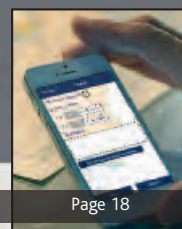
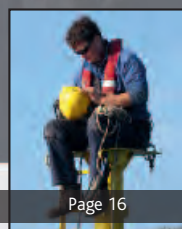
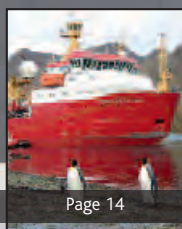
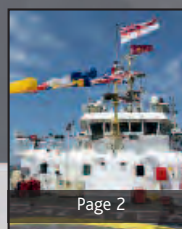
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COVER IMAGE: Deployment of buoys from the deck of THV *Galatea*. Image by James Reid ©Trinity House 2015.





AS WE APPROACH THE END OF ANOTHER BUSY YEAR AT TRINITY HOUSE, I'd like to highlight briefly retirements and appointments of key members of the Corporate Board and the Lighthouse Board. In February, Commodore Jim Scorer stepped down as Director of Operations, a post which he had held since 2007; having now relinquished his role as a member of the Corporate Board – I'd like to thank him for his significant contribution to Trinity House charities' activities and look forward to seeing him at meetings of the Court and future fraternity functions. Another departure from the Corporate Board in November will be that of The Rt Hon Viscount Cobham who was admitted in 2003. Throughout his time on the Board his wisdom and knowledgeable approach to the many hurdles encountered in property stewardship, be they in finance, staffing matters and the law or elsewhere, were truly welcome. His knowledge of the charitable sector has been of particular value to the Corporate Board and, again, I look forward to seeing him at future events.



Image by Roger Barker © Trinity House 2015

Lord Cobham's successor on the Corporate Board is Malcolm Glaister who will be sworn in at the November Court. After an early career in the Royal Navy he went into banking in the City of London in 1971; he has a wealth of experience at numerous levels in many sectors and is an accomplished ocean yachtsman.

As I write we are preparing to welcome Commodore Rob Dorey as Director of Operations. He brings to Trinity House his experience of worldwide seagoing operations after many years of service with the Royal Fleet Auxiliary where he achieved the pinnacle of a career as Commodore or head of service of that highly respected organisation. He too will be sworn in at the November Court.

I know that you will join me in wishing our new arrivals well.

Turning to operational matters we have this year been working closely with our colleagues in the other General Lighthouse Authorities to move to a single GLA helicopter contract, which comes into effect on 1 December. The GLAs have also been working with the consultants appointed to carry out the review of the GLAs' future fleet requirements, the outcome of which is expected in the New Year.

Following Trinitytide this year I was once again able to take part in the Annual Visiting Committee of Inspection, the VC. This year it was conducted in the south-west and west. Such audits provide an assurance to the Corporation that our aids to navigation satisfy our statutory undertakings as a General Lighthouse Authority and are of best service to the mariner. At the same time the inspection team is able to see first-hand that our maintenance, financial, safety and environmental commitments are being met. It was a pleasure throughout to witness the professionalism of our dedicated maintenance teams, both afloat and ashore, in ensuring for another year that we keep our aids to navigation maintained to the very highest international standards required.

To conclude I would like to take this opportunity of wishing you and your families all the best for the forthcoming festive season and for the New Year and to thank you once again for your support throughout 2015.

A handwritten signature in blue ink that reads 'Ian McNaught'. The signature is written in a cursive, flowing style.

a review of the last six

JUNE 2015



Photos: ©Adam Smith

Royal Yacht Squadron bicentenary

As part of the Royal Yacht Squadron's Bicentenary Fleet Review on 5 June, the Deputy Master and ship's company of THV *Galatea* were privileged to make welcome on board HRH The Master and HRH The Duke of Edinburgh (Immediate Past Master and Admiral of the Royal Yacht Squadron), as the Duke conducted a review of the yachts belonging to members of the RYS who commemorated their bicentenary from their HQ in Cowes Castle.

CADET TRAINING

On 30 June the Jubilee Sailing Trust and Trinity House announced their new cadet training programme at an event in SV *Tenacious* at West India Docks in London. The first cadet to be taking part in the joint three year programme, Matthew Banks from Cornwall, will study for a Foundation Degree in Maritime Studies at the Warsash Maritime Academy. This will allow him to gain the necessary knowledge before joining *Tenacious* for unique practical seamanship training on the UK's largest square rigged sail training tall ship; he will then broaden his sea experience with sea time on board different types of ship, including a tanker, container vessel, ferry and cruise ship. As part of this unique

cadetship programme, he will also complete additional training in the traditional arts of ship rigging, sail making and boat building. The Trinity House Merchant Navy Scholarship Scheme provides financial support for young people seeking careers as officers in the Merchant Navy. Cadets, aged between 16 and 18½ years old, undertake a three or four year programme split between nautical college and time at sea in a variety of British-managed vessels. The Trinity House Merchant Navy Scholarship Scheme is funded as part of our role as the UK's largest endowed maritime charity, providing welfare and training and promoting the importance of safety at sea.

Duncan Souster, Chief Executive of the Trust commented: *'We are thrilled to be welcoming such a promising cadet to the JST and thank Trinity House for their sponsorship. This is a truly unique opportunity for everyone involved and we hope to be able to build on this success and bring new cadets into the JST every year.'*

Commander Graham Hockley, Secretary to the Corporation of Trinity House added: *'The Trinity House Cadet Scheme always aims to give its members a broad experience of vessel types during their time at sea and we are delighted that this programme will add tall ships to the range of vessels where our cadets can learn their profession.'*



Left to right: Commander Graham Hockley, Secretary of Trinity House; Captain Simon Catterson, Captain of SV *Tenacious*; Matthew Banks, Deck Officer Cadet; Captain Nigel Hope, Director of Maritime Training at Trinity House, all photographed in SV *Tenacious*.



Left to right: Matthew Banks, Deck Officer Cadet; Captain Nigel Hope, Director of Maritime Training at Trinity House; Thomas Dutton, Deck Officer Cadet.



Above: SV *Tenacious* at West India Docks.

months at TRINITY HOUSE

JULY – SEPTEMBER

GLA Fleet review

We are currently participating in a review of the fleet requirements for all three General Lighthouse Authorities, in partnership with the Department for Transport (UK), the Department of Tourism, Transport and Sport (Ireland) and the Lights Advisory Committee (representing light dues payers).

To assist in identifying and analysing the options for the future of the fleet over the next ten years, Houlder Ltd have been appointed to act as consultants. We are delighted that such an experienced company is on board; one which has a demonstrable track record of similar work in the public and private sector and has made available a team with a wide range of skills including fleet management, marine engineering and strategic thinking.



The Houlder team, led by Simon Harris, commenced work on the project in early August and proceeded to visit each of the main GLA work bases and all seven of the service vessels in order to build a good understanding of our work and enable the review team to produce a thorough, accurate and authoritative document.

FLEET PLANNING AND MANAGEMENT – SCOTTISH SUPPORT

In July the Northern Lighthouse Board vessel *Pharos* suffered damage and as a result was out of service for a month which meant a revision of our plans for the period with THV *Patricia* and THV *Galatea* swapping coasts two months earlier than originally planned.

Patricia steamed around the south coast after changing over No22 Lightvessel at Sunk Inner with THV *Alert*, completing buoy shifting as she went.

Galatea was tasked with uplifting materials needed for engineering project work in Oban before steaming round Scotland from the west to the east coast, in order to support Scottish helicopter operations at the Isle of May.

Whilst we were reprogramming there was a need to ensure we could provide risk response cover for *Pharos* which meant carefully positioning the GLAs' remaining vessels around the coast to enable each GLA to respond to an emergency within stipulated time frames.

Meanwhile, the plans of NLB's vessel *Pole Star* were revised to enable her to complete some buoy work for us in the Irish Sea during this time. *Pole Star* is unable to support helicopter operations as she has no helideck, but this collaboration meant that our maintenance programme continued nicely while we helped out our Scottish colleagues and continued to manage our combined fleet with efficiency.



Above: Northern Lighthouse Board vessel *Pharos*.

Right: THV *Alert* completing buoy shifting.



OCTOBER

New helicopter for GLA operations

On 7 October helicopter operator PDG took ownership of a new EC135 helicopter with call sign G-GLAA. This machine has been purchased specifically to support the three General Lighthouse Authorities' (GLA) helicopter services contract. Handover was carried out during the Helitech exhibition at the London ExCel Centre and attended by Captain Ian McNaught, Executive Chairman of Trinity House.



Above: G-GLAA, the PDG owned EC135 helicopter in flight.

For the three GLAs this is a significant step towards the commencement of the new contract on 1 December 2015. The helicopter will carry out transport and utility operations including personnel transfers and logistics missions between operating bases, lighthouses and support vessels at sea.

Operation of a collaborative helicopter services contract will bring significant financial savings for the three GLAs operating across the UK and Ireland – the Commissioners of Irish Lights, the Northern Lighthouse Board and Trinity House – when compared to the three separate contracts that have been in operation until now and will lead to smoother operational planning and improvements through the adoption of best working practice across the three GLAs.

Captain Ian McNaught commented: 'This new helicopter and the support from PDG will see that helicopter operations across the three General Lighthouse Authorities become more efficient, more cost-effective and continue to make a positive contribution to supporting our network of vital aids to navigation and keeping mariners safe at sea. The ongoing cost reductions and the close working between Trinity House and our sister GLAs are something we are very proud to report.'

A new Elder Brother – Malcolm Glaister BSc MCSI

We welcome **Malcolm Glaister** who has been elected as an Elder Brother and will be appointed to the Corporate Board in place of The Rt Hon The Viscount Cobham who will be retiring after the October Board meeting. Mr Glaister will be sworn in at the November Court.

He was born in 1968, and spent his early years in the Lake District and Suffolk. He was educated at Woodbridge School in Suffolk and at Hertfordshire and Essex High School in Bishop's Stortford, Herts. At the latter he was one of 18 boys in the sixth form at an otherwise all girls' grammar school. He graduated from the University of Durham with a BSc (Dunelm) in Natural Sciences and is a member of the Chartered Institute for Securities and Investments.

His early career was in the Royal Navy in which he joined BRNC Dartmouth in 1987. Early appointments included navigating the Hunt Class mine countermeasures vessel HMS *Dulverton*¹ and as officer-of-the-watch in the type 22 frigate HMS *Coventry*². He was Flag-Lieutenant to Admiral Sir John Brigstocke, Flag Officer Surface Flotilla and graduated from the

Royal Naval Staff College, Greenwich in 1995. His naval service culminated in command of HMS *Blackwater*³, a River Class patrol ship, then part of the Northern Ireland Squadron, which he then handed over to the Brazilian Navy.

He left the Royal Navy in 1997 to go into the City and for three years was Head of Sales and Marketing Project Team at GE Capital. Malcolm is now the founding partner and Chief Executive Officer of Farm Street Partners LLP, a wealth management, merchant banking and asset management business based in Mayfair, authorized and regulated by the Financial Conduct Authority.

Farm Street Partners' advice covers public and private equity, commercial and residential real estate, strategic investments and fundraising. Prior to founding Farm Street Partners in 2012, Malcolm was responsible for private banking for Lloyd's Banking Group's wealthiest clients. He was on the executive committee for the UK and international wealth businesses. Malcolm joined Lloyd's Banking Group in March 2009 from AIG Investments where he was responsible for European private client business in private equity,

real estate and hedge funds.

For eight years prior to this, Malcolm was at JP Morgan Private Bank in London where he was head of family offices and a senior private banker for the larger UK domiciled clients. Earlier roles at JP Morgan included Chief Operating Officer at the private bank and head of change within the asset management businesses.

Malcolm and his wife Rosie live at Ramster, a small country estate near Chiddingfold, on the Surrey-Sussex border, with a wedding venue, farm and wonderful rhododendron and azalea gardens open to the public. He has three young children, all keen riders and sailors.

When time allows, he is an enthusiastic racing yachtsman, competing regularly at Cowes and in international regattas. He is a member of the Royal Yacht Squadron and a liveryman of the Worshipful Company of Shipwrights.

Malcolm and Rosie run a number of charity fund-raising events at home, focussing on military and medical charities.

- ¹ Now part of the navy of Lithuania as *Kursis*.
- ² Sold out of service to the Romanian Navy. Commissioned as *Regele Ferdinand*.
- ³ Sold to the Brazilian Navy as *Benevente* (P61).



A new Director of Operations – Commodore Robert Dorey MA RFA



We welcome **Commodore Robert (Rob) Dorey** MA RFA who has been elected as an Elder Brother and appointed Director of Operations in succession to Commodore Jim Scorer RN who retired with health complications at the end of February this year. Commodore Dorey will be sworn in at the November Court.

He will also be a member of the Lighthouse Board and of the Corporate Board. Until recently Commodore Dorey was Commodore of the Royal Fleet Auxiliary (COMRFA), Head of Service and Assistant Chief of Staff, Afloat Support, in Navy Command HQ. He led the organisation of 1900 staff and thirteen ships, their operational outputs, the procurement of future capability and the sustainability of the organisation in support of the Royal Navy.

Commodore Rob Dorey joined the RFA in 1980 commencing his training at Warsash College of Maritime Studies. At sea as an Officer Cadet and later as a bridge watchkeeper, navigator and operations officer he deployed to the South Atlantic, Caribbean, Mediterranean, the Gulf and the Far East in ships which have included tankers, ammunition ships, amphibious ships and warships. This included service in the Falklands, Adriatic and Gulf campaigns. He qualified as a Master Mariner in 1990, a Specialist Navigator in 1994 and successfully completed the Advanced Command and Staff course in 2003 with a Master's Degree in Defence Studies. As Executive Officer he served in *Sir Bedivere* following her life extension programme, *Sir Geraint* on a Gulf deployment in the Mine Counter Measures support role and *Orangeleaf* as Gulf Tanker. He also completed the final year of the build and then sea trials of *Wave Knight*.

Staff experience has included UK and NATO Maritime Battle Staff with COMUKTG including periods embarked in HMS *Illustrious* and HMS *Invincible* during operations in the Adriatic; and USS *Mount Whitney*. He served as Flotilla Navigator to the COMRFA and following attendance at Staff Course, had a period with Director of Equipment Capability, Expeditionary Logistic Support (DEC, ELS) including work on the Military Afloat Reach and Sustainability (MARS) business case. He then completed an appointment to Joint Commitments

in the MOD in London which included covering the military aspects of the Indonesian Tsunami response and the military support to relief efforts following Hurricane Katrina in the US.

Selected for promotion to Captain in 2004, he has commanded *Sir Galahad*, *Orangeleaf*, *Fort George*, *Wave Knight*, *Wave Ruler* and *Fort Victoria* which included amphibious exercises in Norway and the Mediterranean and operations in the Gulf. The RFA then became subject of a Value for Money review and he was brought ashore to lead the HQ team working with the MOD and HM Treasury. In 2010 he returned to command RFA *Fort Victoria* on counter piracy operations in the Somali Basin and a year later returned to Navy Command to manage RFA operations as DACOS Afloat Support. In 2013 he was promoted Commodore and selected as Head of Service of the Royal Fleet Auxiliary.

Of his move to Trinity House he says *'I am really looking forward to the next phase of my career, working with such dedicated people in an organisation steeped in history and focussed on serving the mariner and safety at sea. Having relocated to be closer to the centre of operations in Harwich, we are keen to embrace all that the role and the region has to offer.'*

His role will involve him heavily in the new tri-GLA helicopter contract – which comes into effect on 1 December 2015 – and the Fleet Review.

Retirement of The Rt Hon the Viscount Cobham DL



We recently said farewell to **Christopher Lyttelton**, the Rt Hon the Viscount Cobham, who was sworn in as an Elder Brother in 2003 and who retired from the Corporate Board in October while remaining an Elder Brother and member of the Court. Until his retirement he was a Trinity House charities' investment trustee, Chairman of the Corporate Investment and Audit Committee, trustee of the Corporate Pension Scheme, non-executive director of Trinitas Services Limited and Chairman of Trinity House Events Limited.

In the twelve years since he was sworn in as an Elder Brother the Corporation has gone from strength to strength in its mission for the funding of seafarers' welfare services; youth opportunities and training; public safety and education; the maintenance of the fabric and history of the Trinity House; deep sea pilotage and more.

Commander Graham Hockley, Secretary to the Corporation paid this tribute: *'Throughout his tenure on the Corporate Board Christopher Lyttelton's wise counsel and experienced approach to the seemingly intractable problems of estate management, charity funding and all round governance of the Corporation's affairs have been of great benefit to the Corporation and its charities.'*

During this time he saw the major milestone of the Corporation celebrating the 500th anniversary of its incorporation by Royal Charter in 1514. The Corporation's primary objectives remain much as they did five centuries ago: to serve the mariner with support for those in need; to provide education and training in seamanship; and to promote safe navigation at sea.

Christopher Lyttelton was born in 1947 and educated at Eton College. He emigrated to Canada

in 1967, spending a year with CP Air in Vancouver before joining the Canadian Investment Banking firm, Wood Gundy. He moved back to the UK in 1973 and spent a number of years developing business in the Middle East before taking a management role responsible for various operations at home.

He joined R Nivison in 1986 and led a management buyout of the ongoing businesses of Nivison by NCL Investments Ltd. The latter, in turn, was merged with Smith and Williamson.

From 2006 to date he has been manager of Hagley Estate with responsibilities including land development, heritage assets, landscape, farming and Hagley Hall as a wedding venue.

Christopher was elected to the Board of the Securities and Futures Authority (SFA) in 1995 and served until 2001. During this time he was appointed to the Conduct of Business and Enforcement Committees. He lists his hobbies as flying, gliding, golf and heritage and landscape. Of his charitable activities he is President of the Royal Alfred Seafarers' Society. He is Patron of Sunfield Homes, an independent residential special school and charity and of the Mary Stevens Hospice; both are in Stourbridge, West Midlands.

The new Differential Global Positioning System

THE DIFFERENTIAL GLOBAL POSITIONING SYSTEM (DGPS) BEGAN ITS life in the 1990s when accuracy from the US military GPS satellite constellation was poor due to imposed interference, known as Selective Availability, for non-US military users. The cunning engineers of the day devised a system that would overcome this and developed one that would transmit a correction (differential) signal to regain the accuracy. This was adopted by the IMO as a legitimate maritime navigation system in 1998 and now most developed maritime nations host such a system around their shores.

Since its inception the value of DGPS has been one of giving a high integrity to enable users to know that the GPS signal they are using is not compromised by a malicious transmission or suffers from rogue satellite signals. At the same

time enhanced accuracy is provided.

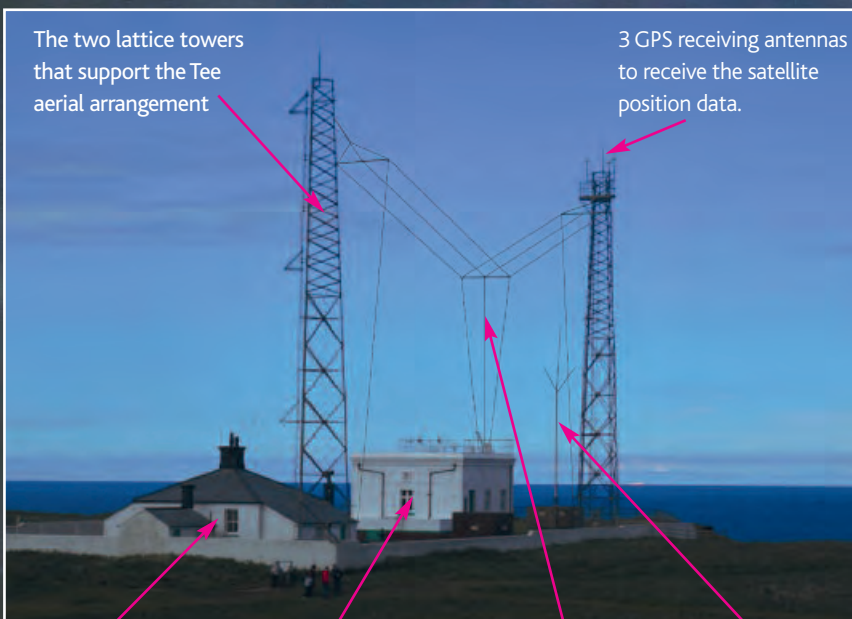
For the technically minded, each DGPS station receives the satellite position data from any passing GPS satellite and compares the derived position with the surveyed position of the receiving antennas on the WGS84 datum. The derived position varies in its accuracy due to atmospheric conditions, interference and satellite prediction errors; these errors are analysed and a correction

signal is calculated and broadcast on the main transmission aerial at a frequency around 300kHz. This correction signal can then be received by any vessel within a 200 km range with a Differential GPS receiver which then gives a position with a greater accuracy and with a higher level of integrity to confirm that it is a genuine signal. Accuracy is better than 0.5 metre at the station and better than 5 metres at 50 miles off shore. The new DGPS equipment has been installed in 14 General Lighthouse Authority sites to provide an enhanced position and high integrity GPS service to mariners around the British Isles. Trinity House operates and maintains seven of these sites and the old equipment which had come to the end of its life has been replaced. The entire DGPS system is monitored continuously by the Operations Officers in the Planning Centre at Harwich and is maintained by the Field Operations Technicians.

The image below shows the DGPS station at Flamborough Head Lighthouse and is annotated to show the various items in view.



Left: Harwich Planning Centre chart.



The two lattice towers that support the Tee aerial arrangement

3 GPS receiving antennas to receive the satellite position data.

Flamborough Head former Keeper's cottage.

The old Fog Signal building which houses the new DGPS controls and transmitters.

The main transmission aerial rising from the Antenna Tuning Unit to form a "Tee Aerial" with the top hat wires.

The Stand-by aerial for use in the event of the main aerial failing.



Les Hanois boat landing

FOR A NUMBER OF YEARS TRINITY HOUSE FIELD OPERATIONS AND Engineering teams had been monitoring suspected structural movement of the boat landing at Les Hanois Lighthouse. The appearance of cracks and the widening of joints between the granite blockface made it clear that the structure was becoming increasingly unstable, but exactly to what extent was unclear. From 2011, annual monitoring exercises were undertaken using a range of different techniques from manual caliper measurement of cracks to full LIDAR¹ surveys to establish the severity of destabilisation.

In October 2014 it was identified that not only was the process of destabilisation still ongoing but it had accelerated. Symptomatic of this was further widening of joints, complete absence of pointing between the granite blocks and even the loss of one of the granite blocks. Field Operations were quick to remedy these issues by replacing the block with concrete and repointing the missing joints, however this was always going to be a short term fix.

Geomarine, a local Channel Islands civil

engineering firm, was approached and tasked with providing a long term solution. A number of options were considered but it was clear that some method of rock anchor stabilisation was required. The chosen approach was to tie the existing boat landing structure in three directions through the block-face and back to competent and stable rock beneath.

The location presented a number of challenges. A huge tidal range of ten metres, often combined with unpredictable sea state and swell, meant

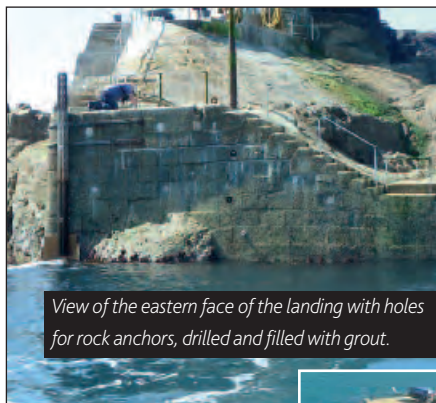
that any works had to be carefully considered. Tasks, which on the mainland would be straightforward, once transferred to the confines of an offshore lighthouse become difficult logistical challenges.

Critical to the rock anchor works were the two compressors that powered Geomarine's rock drill. Too big to store inside the lighthouse but too vulnerable to leave outside at the mercy of the sea, the helideck on top of the lighthouse was the only safe location. This meant involving the Trinity House helicopter and the Helicopter Landing Officer (HLO) teams at short notice to undersling them into position. Careful planning and consultation with the States of Guernsey was required to find an acceptable location, away from environmentally sensitive areas, from where helicopter operations could take place.

Drilling was performed by trained rope access teams with the rock drill mounted and secured on to scaffold frames that could be disassembled between tides. This presented an enormous challenge as it was only possible to drill two or three holes per tide, with the team experiencing great frustration consistently disrupted by the conditions. The weather over the summer of 2015 was particularly unsettled, with unpredictable swell making it difficult for Geomarine to safely gain access to the lighthouse.

Restricted storage on station was another key constraint. Numerous deliveries of equipment and materials were necessary throughout the job and each visit by Geomarine's landing barge would have to be planned around suitable tides and conditions. The result of which was that the team had to remain flexible, often juggling activities and completing them in a slightly adjusted manner and not always in their ideal sequence.

With works complete, the boat landing now benefits from a total of 46 rock bolts, each averaging six metres in length and cast two metres into stable rock. The heart of the boat landing structure is filled with high quality grout and with the addition of a further 27 rock dowels, the structure is completely tied together. Now that the structure is stabilised and free from movement, each granite block will be fixed in position and the life of the pointing is also extended as a result. Steps up the landing, which had shown significant deterioration over the years, have been renewed with polypropylene fibres which will improve the abrasion resistance of the concrete. The boat landing will now benefit from an anticipated extended life of 50 years.



View of the eastern face of the landing with holes for rock anchors, drilled and filled with grout.



Rope access drilling.



Left: Compressors on helipad.

Below: Delivery of materials to the lighthouse by barge.

¹ A remote sensing technology measuring distance with laser illumination and analysis of reflected light; embodies the first two letters of the word 'light' and the last two of 'radar'.

Longstone re-engineering

LONGSTONE LIGHTHOUSE IS ONE OF TRINITY HOUSE'S MOST ICONIC lighthouses. It was built in 1826 by Joseph Nelson and originally called Outer Farne Lighthouse. The lighthouse is known for the 1838 wreck of the *Forfarshire* and the role played by Grace Darling in the rescue of its crew. As a result the lighthouse has national heritage and historic interest.

The lighthouse has undergone many changes from that time; the current accommodation was built in 1951 on the former site of the fog signal house that had been destroyed by bombing in 1942. The lighthouse was electrified in 1952 and was automated in 1990 with constant running diesel alternators providing power for the aids to navigation and the domestic supplies.

A project to re-engineer the lighthouse is now underway and will address the reality that the majority of the electrical equipment within the lighthouse is now obsolete. The work will reduce the risk of future failure and reduce the maintenance overhead on this station. This project will also reduce the reliance on the diesel engine generators and significantly reduce the carbon footprint for both power generation by diesel alternators and delivery to site of diesel fuel. The power for the lighthouse will now largely be supplied from renewable energy,

produced by a solar panel system mounted on the roof of the accommodation building.

This can be achieved due to the new lantern and electronics available. The current lantern consists of a small 3rd order twin spectacle lens with two 1000Watt light sources acting as a main and standby. The lens currently rotates giving a 24 nautical mile light throughout 24 hours. Following a navigational review the light range can be reduced to 18 nautical miles – night time only. A Trinity House standard light source developed by Research & Radionavigation will be used to replace the current 1000Watt light source; this significantly reduces the power required making the solar panels a viable option. The additional advantage is that the new light source does not need to be changed on a regular basis and therefore reduces the maintenance burden on the station. Station electronics and aid to navigation control equipment will also

be completely replaced using a Trinity House standard solution used at other lighthouses.

The installation phase of the project is now well underway and started in April 2015. During that month Trinity House Vessel *Galatea* deployed a lightvessel to the north of the lighthouse to act as a temporary aid to navigation while the project progresses.

THV *Galatea* and the Trinity House helicopter were then used to transport the equipment and tools to site. The station is located within a highly designated environmental area and as such the project team have followed advice from Northumberland County Council and Natural England in planning these activities in order to cause the least disturbance to local wildlife in the area.

Since the work started in April a team of five have been present, living on the station and being rotated on a three week basis. The team of technicians mostly from the Field Operations department within Trinity House have successfully installed the equipment in accordance with the design specified by the project team to a very high standard, which will enable the lighthouse to continue with minimal maintenance for a further 20 years within the harsh environment



Above: New LED light source.

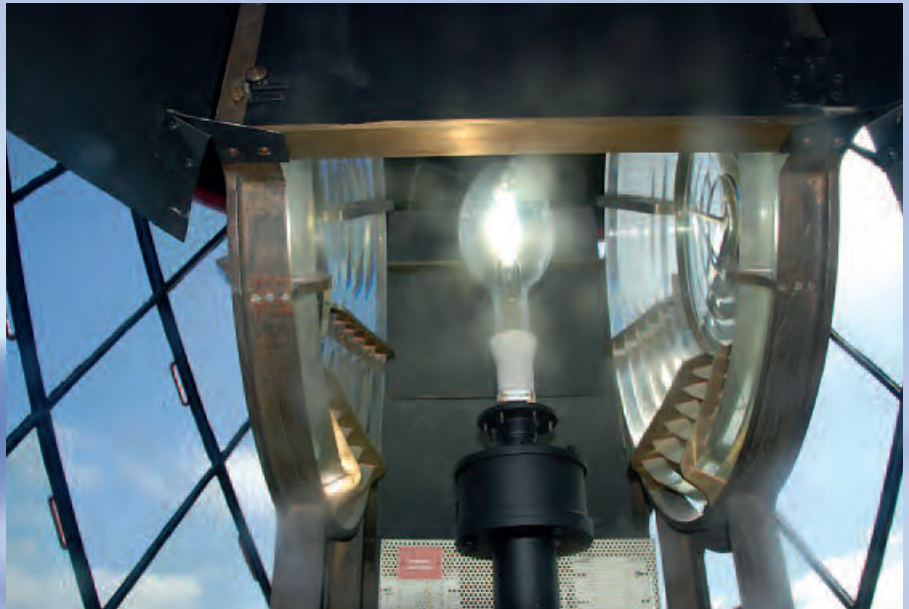
Left: Helicopter operations.

of the North Sea. Installation at the lighthouse now nears completion with a Go-Live date planned for 11 November. The solar power system, navigational light and control electronics have all been installed and the commissioning of the aid to navigation and its related systems will now commence.

Safety of personnel and public at the station is our main consideration and while the work is on-going the site is designated under CDM (Construction Design and Management) regulations and therefore the visitor centre at the lighthouse has been closed for this year.

Part of the work during 2015 has been to prepare a new upgraded visitor centre throughout the tower and in the lower level of the accommodation block. This will include new displays and updated information regarding the station and Trinity House and will be ready for re-opening in April 2016.

Spectacle lens by Captain Roger Barker ©.



Top: Spectacle lens.

Above: 1000Watt light source.

Main Picture: Longstone, built 1826.



The painting of Southwold Lighthouse

AS WITH ALL PROPERTY OWNED BY AND LEASED TO TRINITY HOUSE Southwold Lighthouse benefits from our stringent maintenance programme. Last year Southwold Lighthouse came up for its planned maintenance review for external redecoration, the tower was still in good condition with the coating just beginning to dull off but had not yet gone chalky. We gave it another year of service and decided to redecorate this year before the coating started to delaminate. As with all decorations the substrate has to be sound as the new paint is only as good as the backing to which it is applied.



Southwold Lighthouse is a prominent and much cherished feature of the town of Southwold. The lighthouse has been shining its light out to mariners since 1890, when it was built under the supervision of Sir James Douglass to replace three other local lighthouses. The main light has recently been upgraded to provide a greater range, 24 nautical miles, due to the loss to the service of Orfordness Lighthouse.



Due to the position of Southwold Lighthouse it was decided that the tower would have to be scaffolded and netted to allow the tower to be pressure washed without the cottages that nestle up to it being covered in water and to keep the paint flakes on site to be bagged up and disposed of. Erection of the scaffold caused a delay to the project as we have had the windiest summer for two decades and scaffolders are forced to stop work if the wind gets too fierce, and you will appreciate that towards the top of a lighthouse the breeze picks up a bit!

One of the problems from which Southwold Lighthouse suffers is the local starlings finding it a good place to roost. This leads to the gutters becoming full of guano (*top left*) and the contaminated water running down the tower leads to a bloom of mould every summer that can be seen in the accompanying photograph (*lower-left*). This mould is very tenacious and cleaning it

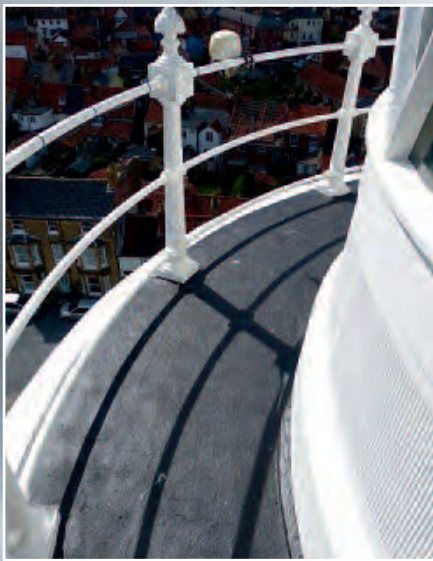
off causes additional stress on the coating. In the past an electrical tape system had been fitted to the lantern and dome but this was found to interfere with the reliability of the main light, so this year it was removed along with the mass of silicone adhesive used to hold it in place. Currently we are trialling a clear bead of bird repellent gel that we hope will upset the birds' nocturnal sleeping arrangements.

Products that we use to decorate our lighthouses are always the best that we can find on the market for our application. Towers are frequently over 150 years old and sometimes far older. In the past the coatings have been less protective and this has led to the fabric of the towers being saturated with salts from the salt laden damp air. The products that we use have to be capable of letting this dampness escape while keeping out the weather and reflecting the sunshine. When we pick a new product it undergoes a long trial period as we cannot afford for the product to break down or maybe, even worse, fade so that we are left with a pink lighthouse.

The current product of choice is Mathy's range of external paint including their Murfill that we use on the tower which has an elasticity of 400% so any slight cracking of the render or block joints does not lead to water ingress. Metal work at the top of the tower is equally difficult to protect as a variety of differing metals were used to construct lanterns. We use Mathy's Alkythane that produces excellent results, even in the damp situations that we encounter, while it needs fewer coats than other systems, therefore there is less build-up of paint over the years and quicker application can be achieved.

With the care and attention taken during this year's painting we hope that our lighthouse is now set to shrug off the worst that nature can throw at it for the next decade.





Communications for e-Navigation

IT IS RECOGNISED THAT THE CURRENT ENVIRONMENT FOR MARITIME navigation is complicated and not well integrated. Navigation and communication systems are not generally designed to integrate with each other, making the mariner's job more difficult. The International Maritime Organization (IMO) is seeking to harmonize maritime communications and navigation with the introduction of e-Navigation.

e-Navigation is expected to bring about the integration of existing systems and thereby facilitate more efficient voyages. It is foreseen that e-Navigation will provide new capabilities both to ship operations and to shore operations. For ship operations e-Navigation will develop on-board navigation systems that benefit from the integration of the ship's own sensors, supporting information, a standard user interface, and a comprehensive system for managing guard zones and alerts. Core technologies of such a system will include high integrity electronic positioning (e.g. multi-constellation GNSS with e-Loran), Electronic Navigation Charts (ENC) and an analysis capability to support decision making and reduce human error, actively engaging the mariner in the process of navigation while preventing distraction and overburdening.

On the shore side the management of vessel traffic and related services will be enhanced through better provision, co-ordination, and exchange of comprehensive data in formats that will be more easily understood and utilised by shore-based operators in support of vessel safety and efficiency. This is perceived as a major commercial benefit by port operators.

To facilitate the data transfer demanded of the e-Navigation applications, robust communication systems are required. It is therefore imperative that the requirements are derived and consolidated to ensure that the e-Navigation concept has the capability to deliver what has been planned.

This article is based on a study of key, high level requirements for the communication systems that will be necessary to support

e-Navigation applications and includes an initial assessment of candidate technologies against these requirements. The scope of the study, carried out by Helios, was the maritime network within the UK and the implementation and use of the e-Navigation communication infrastructure in the 2020 to 2030 timeframe. The applications assessed were those that best reflected the current and likely future status of e-Navigation within the defined timeframe, considering the IMO Strategy Implementation Plan (SIP).

The study considered both e-Navigation communications systems that were already under consideration by the General Lighthouse Authorities as well as other communication systems that could be available and deployed in the 2020-2030 timeframe. The candidate communication systems were assessed against their ability to support the user and performance requirements of each e-Navigation application in defined future usage scenarios. The high level requirements that were used to assess the communication systems included: capacity; coverage; availability, and confidentiality.

Future traffic scenarios for the Dover Strait and the North of Scotland were developed to assess the number of vessels using each application, and hence the data demand on the communication systems. As might be expected, it was found that the Dover Strait would result in the greatest application data loads and therefore would be the main driver for developing the communication system requirements.

Key indicators used to assess each communication system were: the ratio of the average data



Picture © Shutterstock.

load for an application against the maximum theoretical capacity of the system; and the time taken (or delay) for each system to serve peak application data loads.

It was found that the most data intense applications were the No Go Area and Telemedicine; requiring large amounts of bathymetric data to be sent and two-way video calls respectively. The least data intense applications were the Route Exchange and Vessel Operational Coordination Tool, where only position coordinates were required to be transferred.

Analysis found that when the VHF Data Exchange System (VDES) communication system reaches maturity it should provide significant advantages for a number of the applications, including the possibility of merging channels to cope with data rates required by the most demanding applications and providing coverage

Application	Recommended Communication System
No-Go	VDES
Route Exchange	VDES
MSI	NAVDAT (just MSI response) VDES (both request, and MSI response)
Weather Data	VDES
Telemedicine	4G and 5G (close to shore) Inmarsat GX (away from shore)
Maritime Single Window	VDES (away from port) 4G/5G (in port/near the coast)
VOCT	VDES/NAVDAT
Passenger Internet Access	4G/5G (close to coast) Wi-Fi (in port) Inmarsat GX (away from coast)

to regions otherwise unreachable by other technologies. It was also found that future developments in mobile telecommunications

will provide faster data rates, capable of supporting greater data demand from vessel crews and passengers. However, the ground infrastructure for these technologies will be the limiting factor in providing coverage away from shore.

Based on the analysis, communication system(s) were selected that were considered to be the most suitable for supporting each e-Navigation application. The results can be seen in

the table (above).

Taking the results from this study, a number of conclusions were drawn relating to the communication systems available to e-Navigation. These were that: NAVDAT potentially provides a much better service than NAVTEX, but it does not provide the throughput that the more data intense applications could demand. VDES promises to be a good system for the more data intense applications, in particular if the satellite component of the system is fully realised.

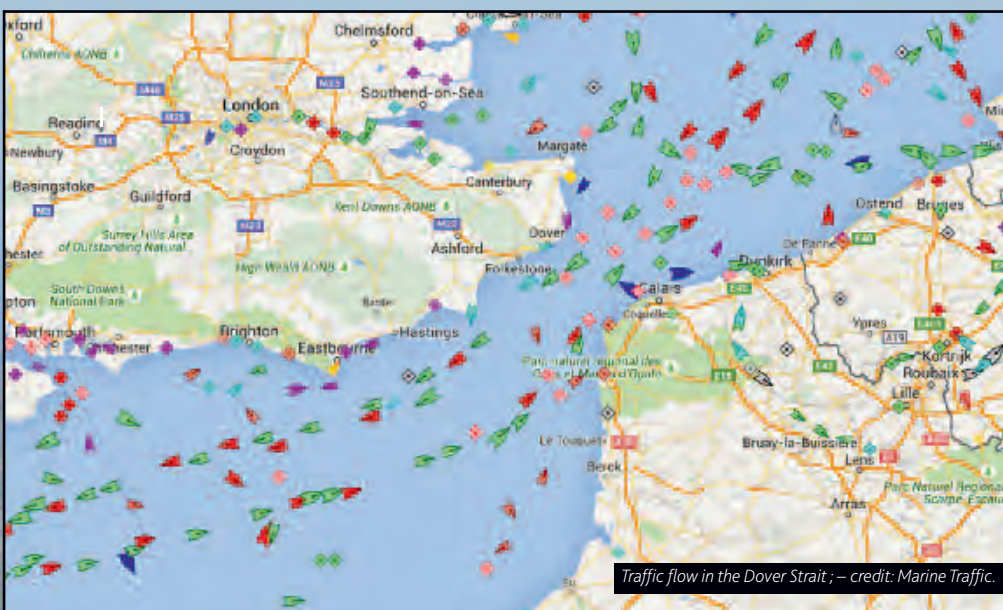
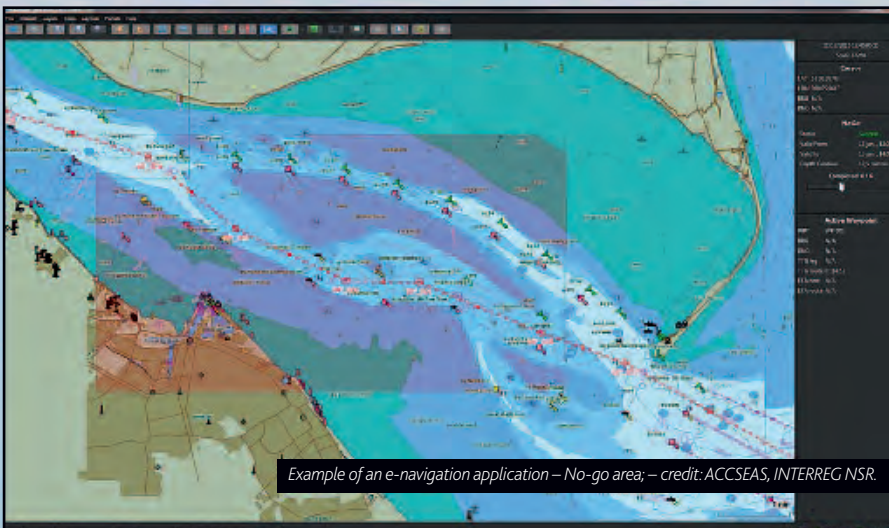
The WiMax service has not taken off in spite of significant initial investment. The major provider within the UK plans to decommission its towers by the end of 2015. Therefore the LTE-Advanced option is now the main technology supporting 4G mobile data standards.

The latest developments in 4G/5G have helped with realising the full extent of personal communications and web access on board vessels.

Further developments in this field should

focus on extended coverage, rather than capacity, to ensure the full benefits can be realised out to the current coverage of the 4G networks and beyond.

Digital VHF and HF, and the Inmarsat-C service, are designed for low data packages and rates. Therefore these systems are not suitable for e-Navigation applications requiring large amounts of data.



South to the Antarctic

I HAVE WORKED FOR BRITISH ANTARCTIC SURVEY (BAS) SINCE ENDING my Trinity House cadetship seven years ago. My last season south in the ice was by far the most challenging and interesting. The voyage on board RRS *Ernest Shackleton* began on 1 November 2014 in Immingham, where all our cargo is loaded. While the ship is relatively small at 4028 GRT she is still a versatile general cargo ship. Our cargo consists of bulk and drummed fuel for the research stations and aircraft, fresh and frozen food, scientific equipment, vehicles, spares and of course people – all critical for the running of our Antarctic stations. Our destination? BAS Halley Research Station, Brunt Ice Shelf, Antarctica 76°S 28°W – the most southerly British presence on the continent.

The Brunt Ice Shelf is in the south eastern corner of the Weddell Sea and inaccessible during the winter months due to a full covering of pack ice. At the beginning of the austral summer however the pack ice normally eases and leads open sufficiently for us to reach Halley.

Our rather bumpy voyage down the Atlantic included two stops for bunkers – a pleasant evening in Madeira and a longer stay at Cape Town. The Cape Town call was a busy four days as we loaded last minute cargo, fresh food and the fresh-faced scientists and technicians who were heading to Halley for the austral winter.

Leaving Cape Town on the 7 December 2014 RRS *Ernest Shackleton* headed for 60°S and the Greenwich Meridian which was our planned starting point in the ice. As the trip south progresses the Bridge Team look at the satellite images of the Weddell Sea ice concentration to interpret the trends and discuss tactics for getting to Halley. We could see from the images that the ice had not receded as much as normal and this was soon evident on arrival at the ice edge.

The image below shows the purple sea ice concentration that we were faced with as we

reached the ice. Dark purple denotes 100% sea ice concentration and lighter colours less ice.

As you can see from the image we had two main options open to us. First was to head south down to the coast and then hope that the shore lead opens up in the places that are “shut”.

Or, as an alternative, head south west and remain to the north of the thick purple band until in a position to the north west of Halley and then approach from that direction. This is often referred to on the bridge of the ship as “going in through the back door.”

We decided on the first option. Initially, accessing the shore lead was quite tough going. Unusually we came across another ship in the ice, the South African Antarctic Research Vessel, SA *Aghulas* which was trying to access the Atka Bay Area to resupply the SANAE research station.

Once in the shore lead we did not have long before it closed up and we were once again struggling to make any progress. On several occasions we stopped the main engines to save fuel whilst we waited for the ice to ease. When you might only gain a couple of ship lengths in a day you have ask yourself if it is worth burning 25 tonnes of fuel.

When stationary in the ice it is interesting to see how the ice moves around the ship and how far a ship can drift stuck in an ice floe. On occasions the ship would cover 20 to 30 miles in a day – often in the wrong direction. It normally becomes obvious when it is worth firing up the engines and trying

to make progress.

After much patient and then later, not so patient waiting and some tough ice breaking, RRS *Ernest Shackleton* eventually reached Halley on 28 December. Cargo handling was a 24 hour operation working in temperatures of about -10°. Round the clock operations are made easier without the hindrance of darkness during the Antarctic summer.

Usually, by the time the cargo operations are completed, the ice has eased or cleared making the outbound passage much easier. Not so this season. It was decided to try and retrace our track for part of the way – the only difference being turning to the north west when possible to reach our next destination, Signy Research Station in the South Orkney Islands.

Again we had an unplanned five day stop off the north eastern corner of the Stancomb Wills ice stream whilst waiting for the ice to ease. The remainder of the passage was relatively straight forward.

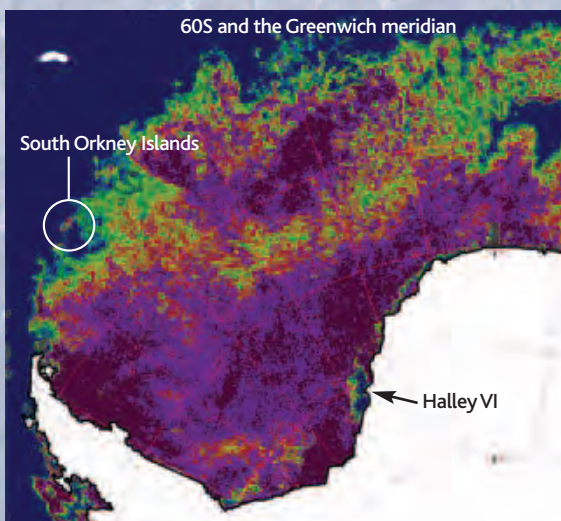
Signy is a summer only research station conducting primarily biological sciences. Perched on a rocky island and foreshore, the ship cannot get alongside so cargo operations are completed by cargo tender and small boats.

Our final destination of the trip was Stanley in the Falkland Islands for crew change and the long flight home to Brize Norton via Ascension Island, courtesy of the Royal Air Force.

About BAS

British Antarctic Survey (BAS), an institute of the Natural Environment Research Council (NERC), delivers and enables world-leading interdisciplinary research in the Polar Regions. Its skilled science and support staff based in Cambridge, Antarctica and the Arctic, work together to deliver research that uses the Polar Regions to advance our understanding of Earth as a sustainable planet. Through its extensive logistic capability and know-how BAS facilitates access for the British and international science community to the UK polar research operation. Numerous national and international collaborations, combined with an excellent infrastructure help sustain a world leading position for the UK in Antarctic affairs.

For more information visit: www.bas.ac.uk.



Left: This is a Polar View sea ice concentration image. Polar View is an international consortium providing a wide variety of earth observation products that monitor the Polar Regions and mid-latitude areas affected by ice and snow. The Polar View team includes government agencies, research institutes, system developers, service providers, and end users from 17 countries. Further information is available at: www.polarview.org. Image reproduced by kind permission of PolarView and the University of Bremen ©2015.



Top left: RRS Ernest Shackleton alongside at King Edward Point, South Georgia.
Top right: The cargo tender (Tula) at Signy base.
Middle left: RRS Ernest Shackleton in Weddell Sea pack ice near Halley.
Middle right: Looking aft from the Conning Tower.
Lower left: Small boat operations on the west coast of Signy.
Lower right: Cargo on deck following Rothera relief.



*Main picture: Alongside at N9 (Halley).
 Photo: © Chris Handy.*

Health and Safety *Update*



The Deputy Master addressing Port Skills and Safety (PSS) Group delegates in Harwich.

TRINITY HOUSE RECENTLY HOSTED THE PORT SKILLS AND SAFETY (PSS) Group meetings in Harwich with the Deputy Master giving the opening welcome address for the main meeting. This meeting, attended by 45 delegates, was preceded the evening before by an informative tour of Buoy Yard operations conducted by Rob Dale, with his 'Dirty Buoy to Clean Buoy' demonstration.

PSS is the UK's professional ports health and safety membership organisation. It exists to promote and raise health, safety and skills standards in ports and the maritime community. Its method is to ensure that discussion, consideration, sharing and benchmarking of health, safety and skills in ports and maritime partners can take place in a dedicated forum. PSS takes common action on behalf of members, collaboratively devises industry appropriate standards, and supports the development of fit for purpose regulation, policy and guidance. Furthermore, it promote the case for industry, campaigns on issues, influences decisions and produces industry relevant outcomes. Trinity House is proud to be a member of this organisation in the promotion of port and maritime safety.

A milestone was achieved this year with our Health and Safety Management System (SMS) achieving OSHAS 18001 certification. Historically, Trinity House has since 1995 developed its SMS in line with the Royal Society for the Prevention of Accidents Quality System Audit (QSA) and audited by RoSPA accordingly. RoSPA's QSA was an audit system developed to test compliance against the HSE's guidance on implementing

an SMS *Successful Health and Safety Management* HSG 65 first published in 1991. Over the years elements from BS 8800 and latterly OSHAS 18001 were included to align with these standards.

The success of the RoSPA QSA stemmed from the fact it was target driven. The format of the audit provides the path for achievement and like Trinity House, hundreds of UK organisations used the system to develop their SMS over time. In this respect the RoSPA QSA has been an excellent servant to Trinity House and our SMS would not be where it is today without the hard work of my predecessors and the assistance of RoSPA and its auditors.

We have always met the QSA challenge and the last three audits over the past six years have achieved the top Level 5 Diamond award. However, in the last few years there have been major changes in legislation and this was not encompassed by the QSA.

HSG 65 was re-published in 2013 to also align with OSHAS 18001 and ISO

9001 standards but the QSA did not follow suit. As Trinity House has achieved the highest ratings in the QSA for some time and would continue to do so, it was evident that Trinity House had probably outgrown the QSA system. Further, the diversity of our operations also meant that there were many Health and Safety aspects to our operations that were not, and might not be, covered by the QSA in the future. We appeared to have arrived at the QSA compliant destination.

We needed a new challenge and an audit system that requires continuous improvement. OSHAS 18001 is a British Standard developed in 1998 and, although initially aimed at British companies, it has become a global success and now internationally recognised. Some 900,000 certificates are issued in 116 countries. Bureau Veritas alone issues some 50,000 OSHAS 18001 certificates within Europe. It is a standard immediately known and recognised by industry and fully dovetails with the ISO 9001 and 14001 Standards. An 18001 certification would complete the recognised suite of industry health, safety,



Installation photographs provided by Christopher (Toby) Wroe - Engineering and Field Operations.

'Taking a break'. Installation Supervisor on Woolpack beacon prepares for receipt of the topmark.

Structural steelwork being installed at Godrevy Lighthouse.



environmental and management system standards to provide evidence of a fully integrated management system.

With this in mind, from August to October 2014, our existing SMS was amended to meet the core requirements of OHSAS 18001 and an initial gap audit on our SMS was undertaken by the American Bureau of Shipping. ABS did not find any major issues that would prevent ISO 18001 certification, albeit as always, they found room for improvement.

A fully integrated (ISO 9001, ISO 14001 renewal & OHSAS18001) audit was undertaken during January and February this year with certification for all three achieved by March.

The current SMS will need further modification to comply fully with the requirements of 18001 over the next few years as it has to show continuous improvement and management commitment with a risk led approach and improved integration.

Within the OHSAS 18001 audit scheme the next few years may not be smooth running and non-conformances are likely. However, it will drive our SMS forward, show improved compliance with relevant, applicable legislation and standards to our operations. In addition it will fully integrate our management systems and assure commercial clients and contractors that Trinity House operates to an internationally recognised health and safety management standard.



Topmark of Woolpack beacon being placed in position using MV Mair.

UKHO and e-navigation

THE UNITED KINGDOM HYDROGRAPHIC OFFICE (UKHO) HAS A PROUD history of 220 years of delivering a wide range of products and services to enhance the safety of navigation at sea. For the majority of its history, its work has been based on delivering paper charts and books to support worldwide navigation, establishing a world renowned name for quality within the ADMIRALTY brand. During the last decade, UKHO has embraced the demand for digital products with the aim of being as significant to the world's shipping in the digital age, as it has been in the age of paper.

Although the origin, and even original meaning of the term 'e-navigation' may be lost in the mists of time, a paper with the title 'Development of an E-Navigation strategy' (MSC81/23-10), submitted to the IMO Maritime Safety Committee in December 2005, is considered by many to be significant in the e-navigation development journey. This paper listed as the first of seven 'key structural components of a safe and comprehensive e-Navigation policy' the need for 'accurate, comprehensive and up-to-date Electronic Navigational Charts (ENCs), covering the entire geographical area of a vessel's operation.' Within the other six components are the provision of additional information, its transmission, and display within integrated user friendly display equipment, plus enhanced positioning, risk avoidance and distress alert systems.

Since then there has been a lot of discussion about what e-navigation means, and how it can be developed and implemented. This paper describes how some of the principles of e-navigation have been embraced by the UKHO in the delivery of both standard and innovative products and services.

IMO e-navigation



The definition of e-navigation was agreed by the IMO Maritime Safety Committee (MSC) in 2008 to be 'the harmonised collection, integration, exchange, presentation and analysis of maritime information on-board and ashore by electronic means to enhance berth to berth navigation and related services, for safety and security at sea and protection of the marine environment'.

An e-navigation Strategy Implementation Plan (SIP) was approved by the MSC in 2014, and work continues to define how the coordinated implementation of e-navigation will take effect. The plan prioritised the following five e-navigation solutions:

- S1: improved, harmonized and user-friendly bridge design;
- S2: means for standardized and automated reporting;
- S3: improved reliability, resilience and integrity of bridge equipment and navigation information;

S4: integration and presentation of available information in graphical displays received via communication equipment; and

S9: improved Communication of VTS Service Portfolio (not limited to VTS stations).

It also lists 16 Maritime Service Portfolios such as vessel traffic services, local port services, and nautical chart services, but their definition is still up for debate.

The IHO contribution



In 2010 the International Hydrographic Organization (IHO) published S-100, the Universal Hydrographic Data Model: "a contemporary hydrographic geospatial data standard that can support a wide



Above, main image: The H-Note App takes advantage of mobile device technology to gather information (GPS, image and text) and e-mail it direct to the UKHO (when in WiFi or cellular coverage).

variety of hydrographic-related digital data sources, ... thereby enabling the easier integration of hydrographic data and applications into geospatial solutions."

S-100 has wider implications than e-navigation, but is recognised within the IMO SIP as an e-navigation foundation for the exchange of information. Its use depends on the definition of S-100 compliant product specifications. A wide range of such product specifications are in various levels of development, the most significant of which is S-101, to support the next generation

of Electronic Navigational Charts (ENC).

UKHO has made a significant contribution to the development of S-100 and associated product specifications, including having chaired the IHO working group on Transfer Standards Maintenance and Application Development for over eight years, and having authored the first draft of S-101.

The recent revision of the IHO S-52 Presentation Library was led by UKHO and contributes to the SIP solution S4. This work is a step towards the IMO goal of 'S-mode' for Electronic Chart Display and Information System (ECDIS) which enables standard display of the menu/control interface, regardless of manufacturer.

UKHO has also been instrumental in the development of the IHO Data Protection Scheme standard (S-63). This now defines an ENC update

status report, as a concise and standardised format to demonstrate to a vetting inspector that an ECDIS and its ENCs are up to date. This contributes to the principle of the SIP solution S2 on reporting.

The IHO's maintenance of standards is fundamental to IMO regulations which require Hydrographic Offices, equipment manufacturers and mariners to use IHO standards for data supply and display, in order to comply with international regulations such as SOLAS (Safety of Life At Sea).

The work of the IHO is thus aligned to e-navigation in terms of standards for data integration, but development lies outside of the IMO committee deliberations. UKHO is committed to contribute to the standards work of the IHO through chairmanship of three working groups, in particular the ENC working group, and regular attendance and participation in the work of four others, such as the S-100 working group.

➔ Continued on page 20.

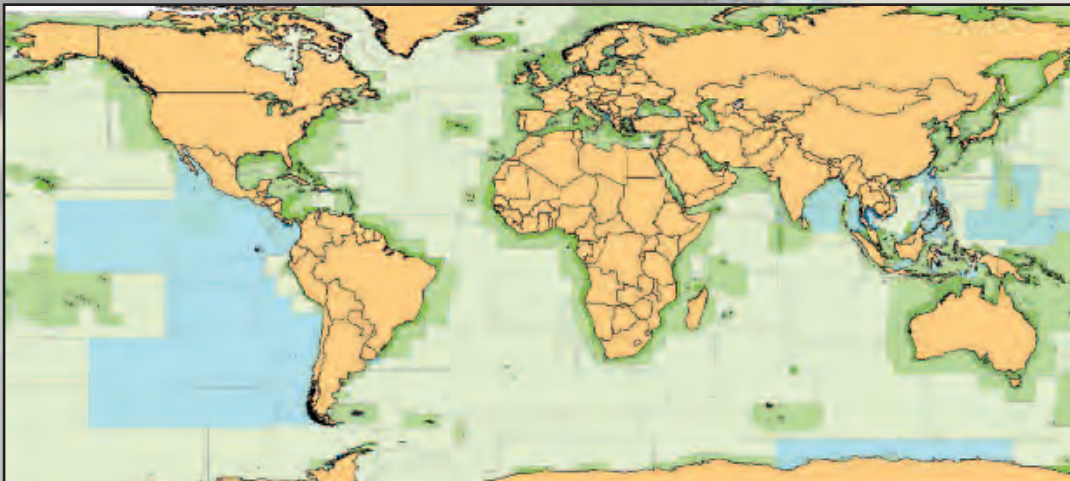


Figure 1 (above): AVCS coverage.

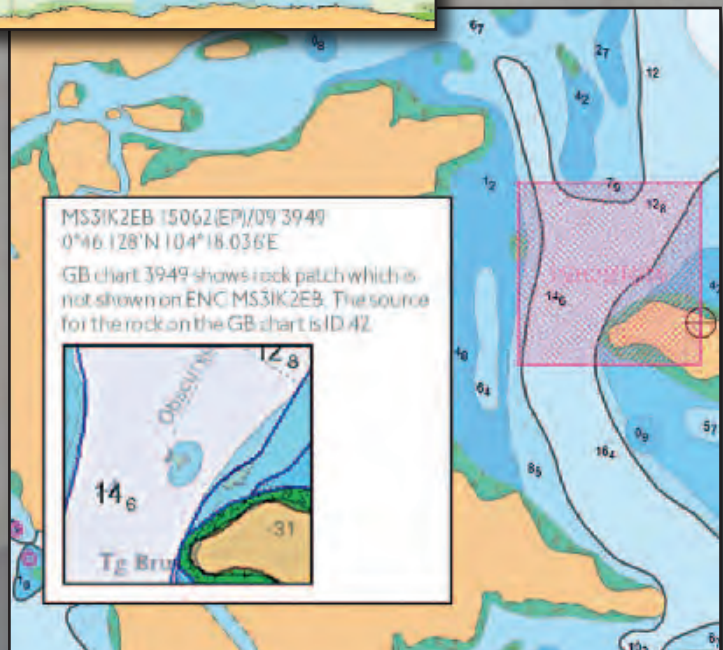
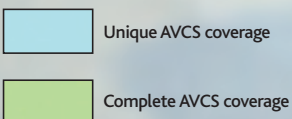


Figure 2 (below): AIO identifying areas of possible uncertainty.

UKHO and e-navigation *continued from page 19.*

The IALA contribution



In 2014, UKHO became an associate member of The International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA), specifically to monitor, and contribute to, IALA's e-navigation activities. IALA has been instrumental in the development of e-navigation, for example through its contribution to organising the 'e-navigation underway' conference series, and through the work of its ENAV committee. IALA is developing S-100 product specifications within its dedicated domain of the IHO Registry, thereby supporting increased interoperability within the e-navigation concept of a Common Maritime Data Structure.

UKHO is pleased to support IALA in chairing Working Group 1 (Harmonization) of the ENAV committee.

UKHO navigation products and services

The 2005 e-navigation strategy paper mentioned earlier, identified the need to create "the right environment to realise the full potential of [contemporary] navigational technologies", including "increasing the production, coverage and interfaces of ENC's; as well as accelerating the distribution and promotion of commercially viable and globally accepted protocols for ENC production and updating." The increase in ENC availability within the last ten years provides a foundation to the development of e-navigation.

In 2008, UKHO launched the ADMIRALTY Vector Chart Service (AVCS) - the most compre-

hensive, official, digital maritime chart service in the world, with now over 14,000 ENC's from hydrographic offices around the world, packaged and quality assured by the UKHO into a single value-added service. Providing official coverage of the world's busiest shipping routes, including 2,950 of the top ports worldwide, AVCS has made a significant contribution to one of the needs identified in the original argument for e-navigation in 2005 namely, "accurate, comprehensive and up-to-date Electronic Navigational Charts (ENC's), covering the entire geographical area of a vessel's operation".

AVCS customers also benefit from the free ADMIRALTY Information Overlay (AIO). The AIO is aligned with e-navigation principles by providing additional levels of information to users, integrated within existing display systems. AIO is the only service to include Temporary and Preliminary Notices to Mariners and ENC Preliminary Notices to Mariners on an ECDIS. This is the result of the UKHO's unique ENC verification process to identify navigationally significant differences between ENC's and ADMIRALTY paper charts.

As part of the move towards digital information, UKHO now delivers ADMIRALTY e-NPs. As e-book versions of paper-based Nautical Publications, e-NPs offer users the flexibility to access the same official and trusted information from ADMIRALTY paper publications, in a quicker and easier to use format. The application of NM updates now takes only seconds compared with the hours it could take to update paper publications by hand, giving bridge crews more time to focus

on other more important duties. Thus e-NPs contribute to the principle of e-navigation by reducing the administrative burden on mariners.

ADMIRALTY e-navigator was launched in 2009 bringing ADMIRALTY Nautical Products & Services together in a single integrated system.

For the fleet manager, ADMIRALTY e-Navigator provides a web-based application to manage product holdings and ordering. For the mariner, ADMIRALTY e-Navigator is a back-of-bridge PC application that provides access to ADMIRALTY digital charts and publications, together with a set of powerful voyage-planning tools to support safe and compliant navigation.

UKHO has been heavily involved in developing the latest edition of the IEC 61174 standard on ECDIS operational and performance requirements. As a result of UKHO input, the standard now includes a generic route transfer format to enable the transfer of routes between systems, such as from ADMIRALTY e-Navigator to an ECDIS, or to shore establishments. This supports the e-navigation principle of interoperability.

Whilst AVCS, AIO and e-navigator are not e-navigation systems within the context of the IMO initiative, they demonstrate e-navigation principles of data integration and presentation, and also provide a firm foundation for the implementation of e-navigation.

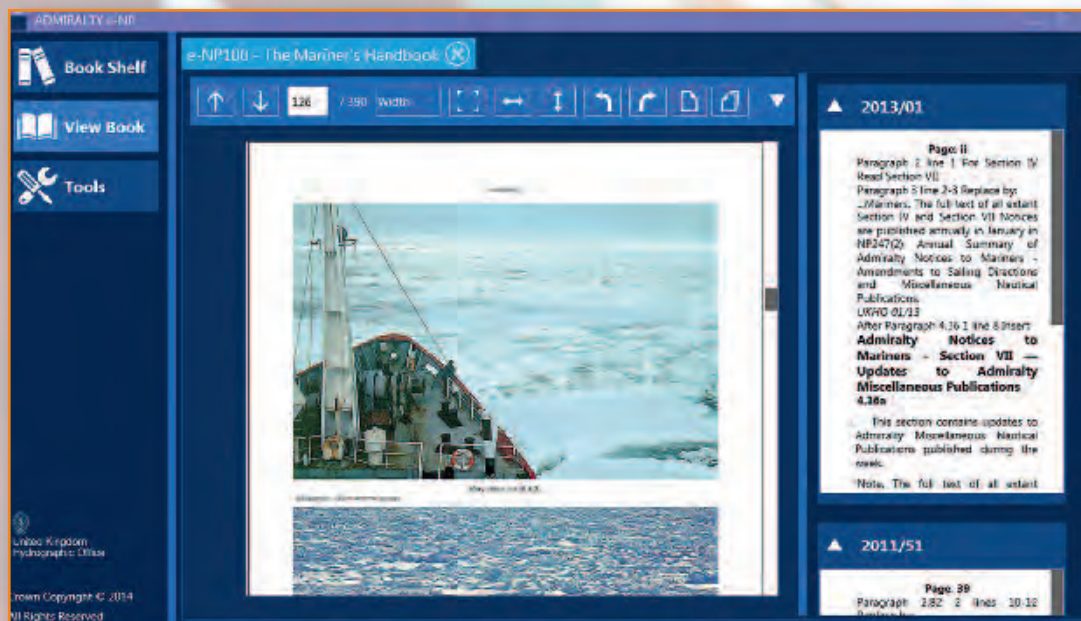
UKHO Innovation

One of the most exciting developments which ties in with S1: improved, harmonized and user-friendly bridge design, is the UKHO's ethnographic research on the bridge of various ships

including a ferry, a Royal Navy Auxiliary ship, a car carrier and container ships. The collected insights have helped UKHO identify the interactions amongst humans and devices during navigation, as well as some of the challenges seafarers are currently facing at sea. This has built a greater empathy with end-users and UKHO is currently shifting its product development approach towards a user centred design.

Recently UKHO has been collaborating with the International Harbour Masters' Association (IHMA) to develop a prototype web-based

Figure 3, below: e-NPs in ADMIRALTY e-reader.



portal for access to port information, called AVANTI (Access to Validated Nautical Information). AVANTI information is provided directly by the port Harbour Master, the authoritative source of nautical information about their port and is currently in trial with a limited number of ports, including the Port of Rotterdam.

The ready availability of reliable, accurate and up-to-date information supports increased port efficiency, improved berth-to-berth passage planning, and enhanced port safety. It is therefore closely aligned to several e-navigation principles and could develop into a world recognised standard for a port information service.

The life blood of UKHO is receipt of information and to enhance information collection it launched the ADMIRALTY H-Note App in 2014. The principle of anyone being able to send in a 'Hydrographic Note' to report navigationally significant observations, has been a long established principle. The H-Note App simply makes this much easier by taking advantage of mobile device technology to gather information (GPS, image and text) and e-mail it direct to the UKHO (when in WiFi or cellular coverage). As a recent development, this is not yet widely used, and although not aligned with any particular IMO e-navigation SIP output, it is hoped to contribute to the general principle within e-navigation of applying new technology to meet evolving user needs, and contributes, through crowd sourcing, to a richer information environment.

Reported and unconfirmed Hydrographic Notes received by the ADMIRALTY H-Note App can be viewed via the prototype ADMIRALTY Maritime Information Portal (MIP) which is currently publicly available as a beta test version for trial use only. The ADMIRALTY MIP also provides access to worldwide Radio Navigation Warnings and anti-shipping activity reports.

UKHO Project Engagement



As well as contributing to IHO and IALA working groups, UKHO is very

pleased to engage with collaborative e-navigation projects. In particular it is a partner of the EfficienSea 2.0 project (funded by the EU Horizon 2020 programme with particular responsibility for providing expertise on S-100. Such projects provide opportunities to develop and trial new methods of information exchange. EfficienSea 2.0 has a particular focus on implementing a prototype Maritime Cloud.

Conclusion

E-navigation as an IMO initiative is taking a while to mature, but many of the principles are being demonstrated, and standards, data and services are being produced to support its implementation. ADMIRALTY Nautical Products & Services are used by over 90%

of ships trading internationally. UKHO's commitment to its customers is to provide world renowned navigational services. UKHO will therefore continue to support the development of international standards and engage in the debate about the future direction of e-navigation.

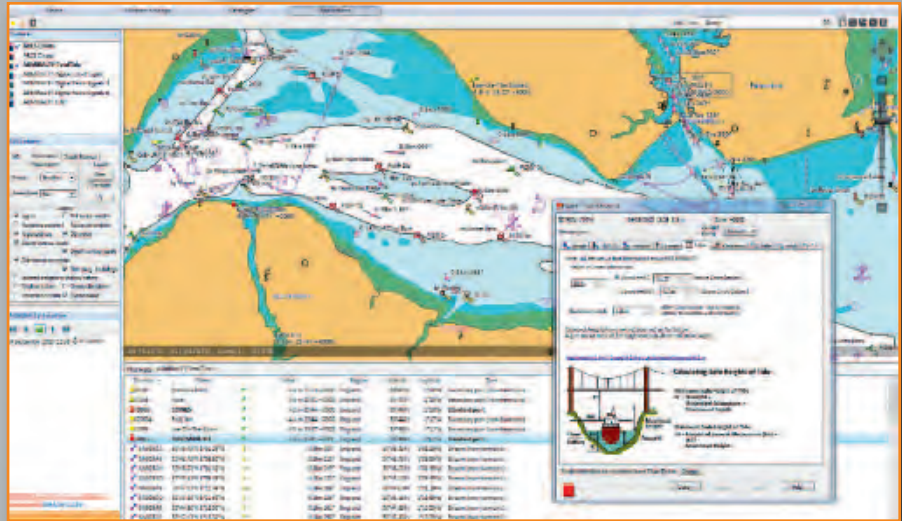


Figure 4, above: ADMIRALTY Planning Station.



Safety at sea – an introduction to the MAIB

Below: Hoegh Osaka grounded on Bramble Bank in the Solent to prevent it capsizing, as seen from the deck of THV Galatea.



Photograph: Keith Lock, Second Engineer THV Galatea (Starboard watch)



Fire-corridor

THROUGHOUT THE WORLD, IT IS OFTEN SAID THAT IT TAKES AN accident to bring about change. This sentiment appears to be true in many sectors, including the maritime sector. It took disasters such as the *Titanic*, *Sea Empress* and *Exxon Valdez* to bring about major changes in legislation. Most of these were reactive changes rather than forward-looking ones.

In July 1987, the Hon Mr Justice Sheen, UK Wreck Commissioner, published his formal investigation report into the capsizing of the ro-ro ferry the *Herald of Free Enterprise*. The report provided that the purpose of the investigation was 'to inquire into the circumstances of the casualty and to establish its causes. But it has always been accepted that the Investigation has a second purpose, which is to see what lessons can be learned from the circumstances of the casualty which will contribute towards the safety of life at sea in the future'. The Hon Mr Justice Sheen went on to state that in the *Herald of Free Enterprise* inquiry the secondary function of the investigation had rightly taken on a major importance.

The formal investigation into the *Herald of Free Enterprise* disaster was not only notable for its findings but also for its recommendations designed to enhance future maritime safety. One such recommendation was that in order to satisfy the general public of the independence and transparency of formal investigations, they should be completed by a body that was 'wholly separate from the Department'. Consequently, in 1989 the Marine Accident Investigation Branch was formed in Southampton, England. The Branch's sole purpose is to improve safety at sea through the promulgation of the safety lessons learnt from marine accidents.

The MAIB

Today the MAIB is still located in Southampton. Although the Branch relocated in 2015 to offices that also house its maritime colleagues, the Maritime and Coastguard Agency, it retains its independence from the UK maritime regulator. With easy access to sea, air, train and road transport systems, the location is ideally suited for the deployment of its inspectors to accident locations both within the UK and abroad

The MAIB is a relatively small organisation with just 35 staff who complete everything from the investigations, the production of the glossy reports through to technical expertise on voyage data recorders (VDRs). The MAIB's Chief Inspector, Captain Steve Clinch, reports directly to the Secretary of State for Transport. This direct reporting line maintains the autonomy suggested by the Hon Mr Justice Sheen.

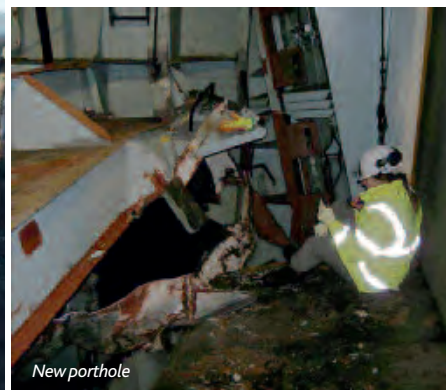
There are twelve MAIB inspectors who make up four investigation teams. Each team is led by a principal inspector who in turn reports to the Deputy Chief Inspector. The investigation teams operate on an 'on-call' rota system. Regardless of whether they hail from a Merchant or Royal Naval background, with the exception of one, the inspectors are all experienced professional mariners. The branch's naval architect is the only inspector not to have served at sea in a senior capacity. However, he is a very experienced



Bow damage



Yacht salvage



New porthole

yachtsman and brings considerable expertise in all things stability-related to the Branch.

The inspectors are both supported and educated by the technical team who provide a wealth of knowledge on the VDRs and other technical kit that is encountered by the teams during the on-site investigations. VDRs are an increasingly useful source of gathering data in an investigation. Those involved in an accident are not always able to recall the little details which can be critical in the understanding of the factors that caused an accident. Using data drawn from VDR and other sources such as AIS¹, the technical team can produce a replay of the accident, which may be used in analysis or even replicated as a diagram in a report.

The MAIB investigation reports and other publications are all produced in-house. This includes the editing, typesetting, graphics and usually the printing of the documents. The publications team is involved with the reports at almost at every stage after the initial draft, including consultation and advisory notices.

The incident support staff often deal with the initial notification of an accident and will begin the MAIB process. They also co-ordinate the inspectors' travel to an accident site which, given the location of some marine accidents, can be highly problematic.

What does the MAIB actually investigate?

The Merchant Shipping (Accident Reporting and Investigation) Regulations 2012 and the Merchant Shipping Act 1995, provide the what, when, why and how an MAIB investigation is completed. In essence, the MAIB investigates accidents involving UK ships anywhere in the world and those involving ships under any other shipping register that are within UK territorial waters. However, the MAIB must also comply with EU Directive 2009/18/EC, which places a requirement for all European countries to ensure that a timely² marine safety investigation is completed. The Directive specifies that member states must complete a safety investigation into casualties that are determined to be 'very serious'. Very serious marine casualties are accidents that involve the loss of a ship, loss of life or severe pollution. Accidents falling into the other categories do not have to be investigated.

However, the Directive provides that a member state may declare itself a substantially interested party in a marine accident regardless of a ship's flag, or the location of the accident, if a national of that state is involved. Additionally, UK regulation permits that the Chief Inspector may decide to commence an investigation if he considers that it is in the interest of the general public to do so. Hence, the MAIB may complete investigations not because it is regulated to do so, but because there is a moral need.

How is an investigation completed?

In order to begin an investigation a notification must first be received. An investigation into a marine accident cannot happen if the MAIB does not know about it. Although the requirements for seafarers, companies and port or shore authorities to report an accident are clearly prescribed in the 2012 Regulations, a notification can actually be made by anyone. The MAIB has a 24-hour telephone reporting line and an Accident Report Form (ARF) is available from its website at www.gov.uk/maib and a notification of an accident may be made anonymously. Sometimes, an accident may be identified by the monitoring of the news articles, the internet and social media. Regardless of how the MAIB is informed, the important thing is that the accident is known to have happened.

Once a notification has been received, the duty principal inspector will classify the accident and determine if it falls within the MAIB's remit. If the accident is one that meets the MAIB criteria for investigation, the principal inspector will nominate a lead inspector and a preliminary assessment will begin. He will also arrange for the preservation of evidence, which could be either physical evidence such as the remains of a broken rope, or electronic evidence such as VDR or navigational data. Additionally, the lead inspector and incident support officer will begin to gather

➔ Continued on page 24.

¹ Automatic Identification System.

² The Directive requires that safety investigations are completed within two months of the date of the accident.



Recovery.

information on the vessel(s) involved and the location of the accident. Except when a safety investigation is started, a preliminary assessment is usually completed by office-based enquiries.

In exceptional circumstances inspectors may attend an accident scene even though there is no intention to complete a safety investigation. This usually occurs when there is a requirement to gather information and evidence that cannot be achieved from office-based enquiries. Where a safety investigation is required, either through legislation or if the Chief Inspector has decided that an investigation should be completed, the incident support officer will notify the marine safety authority for all interested states in accordance with the Directive.

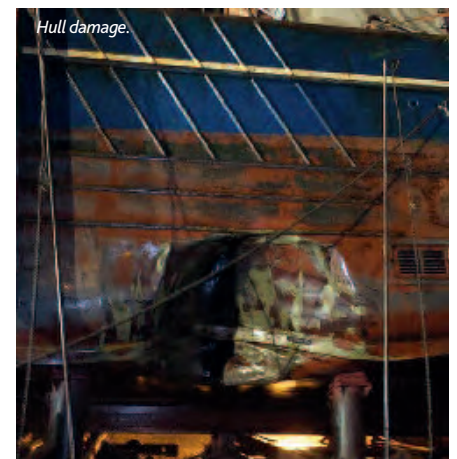
The stakeholders are involved at each stage of the investigation. The deployment of investigators to an accident site is one of the most intense operations that the MAIB completes. The investigation team itself must have the correct number of people with the necessary skills and equipment to liaise with the master and other

A safety investigation has several distinct stages, although not every stage is always required; it is not uncommon for some to overlap:

- Deployment and information gathering
- Further investigation – specialist examination/testing
- Accident analysis and identification of causal and contributory factors
- Formulation of recommendations
- Drafting and review of the report
- Report consultation with stakeholders
- Publication of the report

authorities, interview crew and other stakeholders, and to gather and preserve evidence quickly and effectively. Although most deployed teams are made up of two inspectors the team can often be supplemented by additional inspectors and/or the technical team.

The information gathering stage of an investigation can vary considerably. For example, an



Hull damage.

accident involving just one person may result in the MAIB committing a lot of time and money in testing or other technical operations in order to obtain raw data and facts. Similarly, an accident involving a passenger ship with hundreds of people on board may require no more than the attendance of the core investigation team to gather information. If items gathered during an

Below: Fishing vessel JMT has been salvaged from a depth of approximately 49 metres and has been lifted ashore in Polruan, Cornwall.



investigation require testing by a third party expert it can have a serious impact in increasing the length of time taken for the investigation. However, generally the MAIB aims to publish an investigation report eight months after an accident has occurred.

When all of the accident data has been collected, the lead inspector – in consultation with the principal inspector – will use the facts of the case to identify the causal³ and contributory factors of the accident. This is the analysis stage, which is the heart of the investigation. Using the variety of resources and information available, the inspectors are able to obtain a wider perspective of the accident than that of the stakeholders involved who will, inevitably, have a different perspective by nature of their own involvement. Therefore, when the causal and contributory factors have been identified the MAIB probably understands the accident and its causes better than anyone else. The lead inspector is then able to use the factors to determine the safety lessons that may be drawn from the accident.

Following the analysis stage, the Chief Inspector will consider if it is appropriate to make a recommendation based on the investigation's findings. Recommendations are made only if they meet the SMART⁴ criteria, and are generally issued with the agreement of the receiving party.

The final stage of the MAIB investigation is the report consultation and publication phase.



Bow damage.

This is the opportunity for the stakeholders – and in the case of fatal accidents, the next of kin – who may be adversely affected by the report's conclusions, to comment on the MAIB's draft report. The consultation is the last check on the facts before publication of the report, and is a fundamental part of the process. The MAIB's objective can only be achieved through factually correct reports.

After the 30-day consultation period, final corrections are made if necessary. The report is then published and is made available to all

through the MAIB's website. The publication team will also make every effort to ensure that the relevant industry bodies are aware of the report. And while the report will mark the end of the investigation, the data gathered may be used in support of safety studies or other future cases.

The MAIB is one of the oldest maritime investigation units in the world. However, it is the 'no-blame' culture and its willingness to listen that are fundamental to the MAIB's continuing success in improving safety.

³ A causal factor is an event that led directly to an accident. If this factor had not been present, the accident would not have occurred at that time.

⁴ SMART – Specific, Measurable, Achievable, Realistic and Timely.

Much in little, or what is Corporate?

IT MAY OR MAY NOT COME AS A SURPRISE TO READERS THAT, IN A corporation of over 500 years' antiquity, our oldest function is perhaps also our least understood, and the department that carries out this vital function even more so. The unassumingly-named Corporate Department, working out of our Tower Hill headquarters, manages the charitable works that began long before 1514 and supports the Court of Elder Brethren, and so we are going to have a closer look at their work.

Many readers will be aware that the Corporation of Trinity House is comprised of three core functions, pretty much as it has been since 1514, being the lighthouse service, the charity and the fraternity of Elder and Younger Brethren, all of which are funded separately; these are all overseen by the Court. The Corporate Department, in effect, looks after the latter two legs of this trinity and provides the secretariat to the Court. So what does that mean? Perhaps the best place to start is with the two charities.

The Trinity House Maritime Charity

Firstly there is the Trinity House Maritime Charity (THMC) which is an endowed (non-fundraising) charity whose objects are the provision of almshouses for needy mariners and the payment of annuities (a direct link back to 1514), the welfare of mariners and their immediate dependants, training and education in navigation and seamanship, the advancement of public safety – in particular the safety of mariners and shipping generally – and finally the education of the

public in matters relating to navigation, shipping and seamanship. The Corporate Department manages the charity's endowed resources and its charitable grant making.

The endowed resources comprise approximately £20million of investments and three farms. The Department's management of all of these, assisted by appropriate professional advisors, is overseen by the Corporate Board, which also approves the grants that are made. The farms comprise a small farm in Essex, a larger one in Lincolnshire on the banks of the Humber and a similar sized one in London. The latter farm, bought by the Brethren in 1660, for £1,694, is now covered by approximately 400 residential properties and around 20 commercial buildings; it is the rental income from these that supports the majority of the charity's spend and grant giving of around £5million per annum. This in turn supports over 20 front line maritime charities on a regular basis and a nearly equal number on an *ad hoc* basis each year. Details of the charities regularly supported may be found on the

Below: On 20 May 2014, the Jubilee Sailing Trust generously made Tenacious available for a TH 500 commemorative event attended by charities in receipt of grants from Trinity House: Jubilee Sailing Trust; Sailors' Children's Society; Royal Navy & Royal Marines Children's Fund and the Royal Liverpool Seamen's Orphan Institution.



Top: The Corporate Department manages the provision of Nautical Assessors known as Trinity Masters to the Admiralty Court.

Lower: The Merchant Navy Scholarship Scheme admits 30 Deck, Engineering and Electro-Technology cadets a year to a three year course.

'Charities We Support' page of the Trinity House website. As a centuries-long drive to train people for a career at sea, the charity runs two cadet schemes: the Merchant Navy Scholarship Scheme which admits 30 Deck, Engineering and Electro-Technology cadets a year to a three year course, while the Professional Yachtsmen's Scheme annually trains six cadets for the large yacht industry and provides a beacon of good practice in a growing and diverse international grouping.



©Sailors' Children's Society



One of the primary concerns of the Trinity House Maritime Charity is Walmer Almshouses.

Above: Trinity House, a beautiful Grade 1 Listed maritime heritage site is let out for dinners, seminars, charity events, and is a significant source of income.

However, the THMC's primary concern is the provision of the almshouses at Walmer near Deal in Kent. The handsome site comprises 18 two-bedroom bungalows, an office and a communal room where lunch can be provided for the residents; a Supervisor with a team of three (two of whom are night staff) manage the site on a daily basis.

The Corporate Charity

Turning to the older and original charity, the Corporate Charity, this is the whole of the Corporation (not just the Corporate Department) of Trinity House and includes Trinity House's work as a General Lighthouse Authority, which significantly contributes to our charitable objective to provide for the safety of shipping and mariners. Nonetheless, as a result of 19th century reforms and its unique method of funding it operates separately under different rules but within the Corporation.

So what does the Corporate Charity do? Technically it is governed by the original James II Royal Charter and could do almost anything charitable with a marine flavour. Sadly, unlike the THMC it is relatively poor, owning just over £1million of investments and Trinity House in London and its treasures. The House, being a beautiful Grade I Listed maritime heritage site, is let out as a venue for dinners, seminars, charity events, press conferences and even weddings as a significant source of income; this brings in to the Charity about £500,000 a year. The events side of Corporate's business is run by the Events Manager and his Deputy and the extensive kitchens are overseen by the Catering Officer, while the fabric and security of the house is run by the Maintenance Manager and his team of

three. The Corporate Charity also discharges one of Trinity House's oldest responsibilities, that of examining, licensing and annually re-validating Deep Sea Pilots operating in the Channel and North Sea. It also manages the provision of Nautical Assessors, known as 'Trinity Masters', to the Admiralty Court to work with the judges on cases with complex navigational or seamanship issues.

The Fraternity

The fraternity now comprises 40 Elder Brethren and approximately 400 Younger Brethren and is funded through subscriptions. The Elder Brethren comprise the Court, or Board of Directors, overseeing the whole Corporation and the Corporate Department provides its Secretariat. The Elder Brethren are drawn from among eminent individuals in public life or recruited, by selection and interview, from among the Younger Brethren for a particular skill; an example of the latter is the Director of Maritime Training, responsible for delivery of the two Trinity House Cadet Schemes.

The Younger Brethren must all have a maritime connection and the vast majority have served at sea, usually as Captain of a warship or Master of a merchant ship. However, ship brokers, marine lawyers, ship owners, ship managers, naval architects, marine charity chief executives and of course ships' pilots may be found within their number.

Their key function is to provide the Corporation with a knowledge pool it may draw upon, particularly for those maritime issues beyond its core areas of competence. It also provides volunteers to become ambassadors for the Corporation giving talks on Trinity House to



Above: Deep sea pilotage, an extension of one of the oldest responsibilities of Trinity House. Picture: ©IMPA.

audiences around the country. Another group, the Consultative Working Group, responds on maritime issues which are beyond the core interest of the Corporation, for example Merchant Navy Training. The fraternity also provides a network for former Trinity House Cadets (Trinity Yeomen) where they may find mentors or general advice on progressing their marine careers. Volunteers from the Younger Brethren are also forming regional grants committees to help the THMC reach marine charities in their local areas.

In addition, the fraternity's events such as Trinitytide and the Carol Service form an historical link to the past and provide opportunities for the fraternity to congregate and meet new peers.

So in a nutshell that is what the 16 full time equivalent members of the Corporate Department do: administer the fraternity, manage two charities and their assets worth just shy of £250 million and provide the Secretariat to the Court. Any questions? Then do let us know.

RMNEF

An interview with **Charles Heron-Watson** (Younger Brother) of the Royal Merchant Navy Education Foundation (RMNEF)



Left: Admiral Lord West of Spithead presenting the Merchant Navy Medal to Commander Charles Heron-Watson.

Q. Tell us about the Royal Merchant Navy Education Foundation.

A. We are a British educational charity for the natural or adopted children of Merchant Navy seafarers and professional sea-going fishermen, and of crew members of the Royal National Lifeboat Institution's lifeboats. Each qualifying parent must either be serving or have served at sea. Our beneficiaries are known as 'Foundioners'.

We support Foundioners by providing for or towards their maintenance and education with the end goal of enabling them to obtain professional qualifications for future employment. This includes contributions towards school or university fees, living expenses, educational books, visits or equipment, school uniform costs and more.

Q. What is your history?

A. We were originally founded as The Merchants' (sic) Seamen's Orphan Asylum in London in 1827 – an asylum for the children of British Merchant Navy seafarers who had lost their lives at sea. In 1862 we moved to Snaresbrook as the Merchant Seamen's Orphanage. This asylum, as with all orphanages, became obliged by the Education

Acts of the late 19th century to provide their wards with education and so the Orphan Asylum became the Royal Merchant Navy School which, in 1921, moved from the smog of Snaresbrook to the fresh Berkshire air of the Bearwood Estate in Wokingham. Fifty years later, the school's name changed to Bearwood College – and, in 1981 we became The Royal Merchant Navy School Foundation. After we disposed of Bearwood College and some land in 2012, we took our current name in 2013, to reflect our activities in education not in a school.

Q. What do you do today?

A. Just as our name and location have changed, so have our methods of supporting our Foundioners and we now support children and young adults nationwide. We are currently supporting around 51 Foundioners (with about another 20 the pipeline), and are actually in a position to help many more – the challenge we are currently facing is making contact with those who need our help.

Q. What are your plans for the future?

A. In short: to find more beneficiaries. Our aim is to locate 250 more Foundioners in the next few years. We

recently launched *The Bridge Report* which can be downloaded from our website. The aim of this was not only to remind the UK public about the importance of the Merchant Navy, but also to draw attention to the challenges facing those serving in the Merchant Navy and their families.

Connecting with beneficiaries is a challenge, but one we are working hard to tackle. As well as enlisting the help of a public relations agency, we are also exploring the world of digital advertising and social media. Word of mouth is incredibly important – so if anyone reading knows of anyone who could use our help please do let them know about us.

For more information on the RMNEF, or to download *The Bridge Report*, readers are invited to visit www.rmnef.org.uk or follow on Facebook at www.facebook.com/RMNEF.



Vehicle replacement programme reaches £1 million milestone

AT A MILESTONE EVENT HELD ON 3 SEPTEMBER, MERCHANT NAVY Day, a new Multi-Purpose Vehicle (MPV) was handed over to the Tilbury Seafarers' Centre by the four primary UK funding charities – the ITF Seafarers' Trust, Merchant Navy Welfare Board, Seafarers UK and Trinity House. This marked the passing of £1million expended on these important vehicles in a collaborative funding programme launched in 2008 and that has so far seen 90 replacements.

The Merchant Navy Welfare Board, in its role of supporting and co-ordinating the work of its constituent charities works very closely with those voluntary societies providing welfare in and around UK ports. It is those frontline organisations that provide the all-important visits to ships and transport of seafarers ashore during the brief time ships are alongside. This essential work can only be undertaken using vehicles.

These days when raising funds is difficult, charities are heavily reliant upon grants and in the UK these come from the four primary funders of which Trinity House is one. Until around 2007, whenever a new, or replacement vehicle, was required, they needed to apply to one or more potential funders in the hope that they would receive a grant. This was difficult for both the vehicle users and funders to plan properly, sometimes meaning that vehicles remained in service long after their disposal dates. Most are, of course, being driven in the harsh environment of ports and five years is widely regarded as

time for a replacement.

Under this programme the fleet of minibuses, MPVs and cars are now well maintained and fit for purpose. Above all the vehicles help chaplains, staff and volunteers to provide a quality of service to seafarers visiting their ports, or in some cases to provide pastoral care to those living in the vicinity.

At the gathering on 3 September Captain David Parsons, Chief Executive of the Merchant Navy Welfare Board and Younger Brother of Trinity House, spoke of how the programme was originally conceived: 'Through our network of port welfare committees the Board became increasingly aware that much of the UK vehicle fleet was aged and struggling to maintain a good service with, often, costly repair bills. The sensible solution was to bring together users and funders to find a satisfactory situation by establishing a planned replacement programme, administered by one organisation on behalf of all involved.

'This quickly commended itself to all concerned.

An arrangement was brokered wherein the Board receives grants from the other three societies, which are held in a restricted fund. This fund allows all vehicles to be replaced when they reach five years of age, although obviously any part exchange value is deducted. For the recipient societies it means that all grants are routed through one source and most importantly they can be assured that funds are available. In the meantime this avoids any unnecessary administrative duplication for the funders. We are of course mindful that providing a new vehicle is only half the battle as the user societies must meet all the costs involved in keeping the vehicle on the road'.

Commodore Barry Bryant, Younger Brother, Director General of Seafarers UK commented: 'Seafarers UK has been an enthusiastic supporter of this project from its inception, seeing it as an excellent example of what the maritime charities can achieve through working in partnership. The major funders, often working through the Maritime Charities Group, will always strive to use the total resources of the sector to provide optimum services for the greater benefit of our whole seafaring community.'

Of the vehicle replacement programme Commander Graham Hockley, Secretary to the Corporation (pictured above, fourth from left), concluded by saying: 'We are pleased to be able to assist with this programme enabling port chaplains to go about their pastoral duties for the benefit of visiting seafarers.'

Netherlands Maritime Safety

THE NETHERLANDS IS SITUATED ALONG THE NORTH SEA, ONE OF THE BUSIEST SHIPPING TRANSPORT routes in the world. The Netherlands has a longstanding and rich tradition as a maritime nation. Already in the early sixteenth century Dutchmen set sail to far areas and countries in the world for trading. The highlights in history of course were in the 17th and 18th century the Dutch East India Trading Company and the Dutch West India Trading Company. The Dutch East India Trading company had a specific attention for the Far East and the Dutch West India Trading Company had a focus on trading in Western Africa, the Caribbean and in North and South America.

These companies brought back raw materials and so far unknown consumables, such as a large variety of spices, fruit and vegetables. This trading resulted in a very high level of prosperity and wealth in the low lands, which developed itself from those early days up to now to a leading transit nation of goods and passengers, with increasing positions for its seaports such as Rotterdam and Amsterdam and their connections to the European hinterland. As a trading nation, the Netherlands has succeeded in building up a strong global maritime position, partly as a result of the strategic position at the estuary of the rivers Meuse, Rhine and Scheldt. This is reflected in the international leading position of the industries from the Dutch maritime cluster, a cluster which is pre-eminently internationally oriented and regulated. Rotterdam is regarded as 'gateway' to Europe and as the largest port in Europe, it serves a hinterland with hundreds of millions of inhabitants. The Netherlands has an open economy and is one of the world's ten leading export countries. The maritime cluster contributes significantly to that position, because more than half of the turnover is realized abroad.

The organization in the Netherlands

In the Netherlands, the Directorate-General for Mobility and Transport, a division of the Ministry of Infrastructure and the Environment is responsible for the safe, smooth, sustainable and secure handling of shipping.

The local maritime authorities such as the Harbour Master of the Port of Rotterdam, the Harbour Master of the Port of Amsterdam are responsible for the safe, smooth, sustainable and secure handling of shipping within their ports. These ports

Main picture, below: An element of the fishing fleet, an essential part of the Netherlands' maritime economy.



Aids to navigation maintenance: Dutch ports are well known for their high standard of nautical services.



MSC Oscar inbound to Rotterdam with 19,224 teu (twenty foot equivalent units). Dutch ports expect a growth in ship movements.



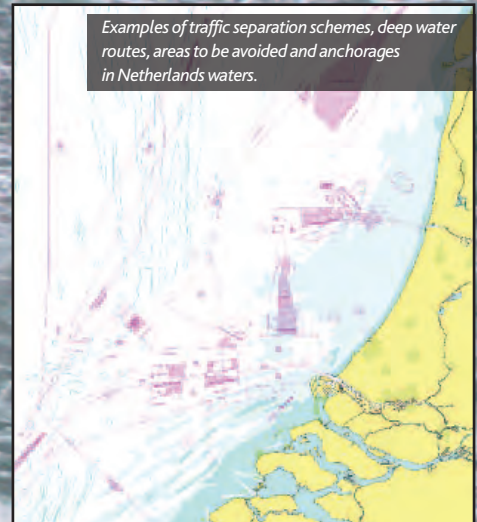
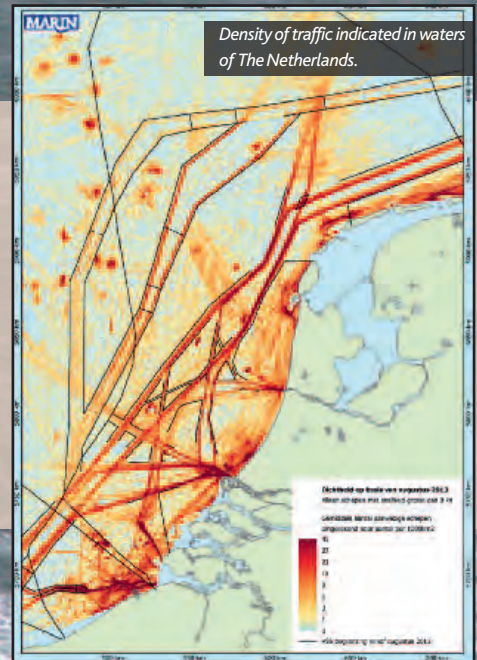
are well known for their high standards of nautical services, the safe and smooth handling of shipping and a Vessel Traffic Guidance System of high quality.

The Directorate-General Rijkswaterstaat, another division of the Ministry of Infrastructure and the Environment, is responsible for the maintenance and management of the coastal fairways and the main inland waterways. The fairways are marked with traditional maritime aids to navigation (lighthouses, buoys, signs, leading beacons and so forth). Rijkswaterstaat is also responsible for the locks at IJmuiden, the gateway to the port of Amsterdam and at Terneuzen, the gateway to the Flemish port of Ghend. Rijkswaterstaat has also a few inland Vessel Traffic Service (VTS) stations.

Vessel Traffic Management – The Dutch coast is divided into 5VTS areas.

In the south, on the river Scheldt, the VTS is provided in a co-operating Dutch and Flemish

➔ *Continued on page 32.*



Above: Netherlands waters are well marked with aids to navigation.

Netherlands Maritime Safety *continued from page 31.*

organization, the Common Nautical Management (CNA). The CNA forms the pinnacle of nautical co-operation between the Netherlands and Flanders which started in 1839. It is as much a finishing point as it is a starting point for further reinforcement of the co-operation. With the challenge to improve ever further on safety- and smoothness levels, despite the increase -both in scale and density- of shipping traffic. The main goal is to organize smooth and safe shipping to and from ports around the river Scheldt. This includes ports such as Antwerp and Gendt.

In the Rotterdam area the Harbour Master of the Port of Rotterdam is in charge of VTS. Every year, some 33.000 sea-going vessels and 110.000 inland vessels call on the port of Rotterdam. In the Amsterdam area the Harbour Master of the Port of Amsterdam is in charge of VTS. In the Den Helder region the Royal Dutch Navy is the VTS authority.

In the Eems Region Rijkswaterstaat is the VTS Authority, in co-operation with the German Wasser - und Schifffahrt Direction. The main ports in this area are Eemshaven and the German port of Emden.

In the coastal areas VTS centres provide all three types of vessel traffic services: Information Service (INS), Traffic Organization Service (TOS) and Navigational Assistance Service (NAS) 24 hours/day all year round.

The increase of shipping, the scaling-up of ships, the use of the North Sea for the exploration of windturbine parks and the designation of

parts of the North Sea as protected area (Natura 2000) will lead to a decline of the navigable space for shipping. This is particularly the case on the North Sea and the Dutch part of the Continental Shelf. There is a program, called 'VTM Future' that will further upgrade and improve the quality of the Vessel Traffic Management and Information Services. This program will ensure an unhindered and smooth passage of shipping in the future, when traffic density, traffic patterns and ships dimensions increase further.

Therefore it is necessary to intensify managing and monitoring shipping from ashore, in which timely and reliable information is delivered to the ships. Service from ashore can be established in the form of traffic management – eventually also outside the territorial waters, route advising and guidance, provision of Maritime Safety Information and dynamic prediction models for port approach. But it is also necessary to improve reporting and reporting processes and to introduce functional and operational planning and risk models.

These steps, in combination with regional coordinated Marine Spatial Planning, will contribute to safe navigation – and with that the protection of the marine environment – but also to the efficiency of shipping and the logistic process in the ports.

Better and directed management through guidance, planning and monitoring will contribute to a reduction of waiting time at sea or in the ports, to reduction on energy use of ships – with

lower carbon emission – and to a reduction of the costs for the shipowner.

Better information exchange between parties ashore will lead to better and timely information about availability of facilities in the ports that are a part of the logistic process and the connection with other transport modalities (synchromodal approach).

Safe Marine Traffic

Not only ships must be safe, but also the vessel traffic must be safe. The North Sea with around 260.000 ship movements a year is one of the busiest seas in the world. One third of these ship movements (88.000) is from and to Dutch sea-ports. The Dutch ports expect a further growth in the amount of cargo transfer. They also expect an increase of ship movements of which a part will affect the Dutch ports.

There is also a growth tendency in the transport of dangerous and noxious goods to Dutch ports and along the Dutch coast. In the future the use of LNG will increase, and ships involved have their own safety characteristics.

In order to anticipate to all these challenges, in August 2013 the whole route structure off the Dutch coast was changed. The basis of the former route structure was established more than 50 years ago. The increase of shipping and the spatial claim of the North Sea by other users since the sixties made it necessary to change the route structure.

But apart from that several shortcomings in



the existing route structure were taken into account, as follows:

1. the occurrence of several near misses in the approaches to IJmuiden due to an overcrowded anchorage area that leads to ships anchoring in the traffic flow from TSS "Maas North" to TSS "Off Texel";
2. four traffic flows were merging into one at the entrance to the north-bound lane of the TSS "Off Texel", where navigation is hampered by the wreck of the *Vinca Gorthon*, which effectively halves the width of the traffic lane;
3. the existence of a hot spot five miles west of IJmuiden outer pilot station with a high ratio of encounters between ships on various courses close to the Horizon Oil production platform, increasing the risk of collision with this platform;
4. the poor crossing angles of vessels encountering each other in the precautionary area "Maas Junction";
5. the unfavourable angle of approach to the Maas pilot station for inbound ships coming from TSS "Maas North", necessitating a change of course to starboard whilst at the same time these ships are stand-on traffic for outbound ships;
6. the disproportionate efforts and costs of surveying and dredging in the approach area to the Deep-water route leading to Europoort;
7. the lack of routing measures for inbound traffic from the TSS "Off Texel" for the ports of IJmuiden, Rotterdam and ports at the River Scheldt, resulting in a diversity of small angle crossings with traffic from TSS "North Hinder North" to TSS "Off Texel"; and
8. the lack of sufficient anchorage space in the approaches to IJmuiden due to the increase of tanker traffic bound for IJmuiden.

Routing measures

The ships' route structure in the North Sea is established in several international routing measures, such as traffic separation schemes, recommended routes, areas to be avoided and precautionary areas.

The 2013 changes concern the Dutch Exclusive Economic Zone between the Belgian/Dutch border and Den Helder. The most significant characteristics of the changes are:

- In the approach to IJmuiden (Amsterdam) a traffic separation system was installed
- The shipping lanes are situated further away from the coast
- Fewer intersections between shipping lanes



have been realized, and locally better crossing angles have been established

- The safe distance between wind turbine parks and shipping lanes has increased
- The establishment of areas to be avoided and precautionary areas.

Shipping should keep clear of areas to be avoided, because there is for instance an ammunition dumping site. Around objects such as drilling rigs and wind turbine parks safety zones are established. These are no-go areas. Precautionary areas are created at busy crossings or at crossings with large, channel bound ships, where ships should navigate with particular caution.

In order to establish the effectiveness of the anticipated change in route structure the Netherlands performed a formal safety assessment from which it was concluded that the proposed routing measures significantly improve safety of navigation and protection of the marine environment in the area. The study comprised a HAZID Assessment, a Quantitative Risk Assessment and an abstract of the Risk Assessment of North Sea shipping routes in the vicinity of two ammunition dump sites.

In the FSA risks for different traffic scenarios, incident scenarios and risk mitigating policies have been addressed and compared, resulting in a selection of routing measures.

A broad range of stakeholders were involved in the planning and design of the proposed amendments, including authorities from neighbouring countries.

As responsible policy department for safety of navigation, the Directorate-General for Mobility and Transport was nationally involved in the establishment of the new route structure as adviser,

and internationally involved as representative for the Netherlands in IMO in the relevant sub-committee (NAV at that time) in order to introduce and defend the proposed routing measures.

Implementation of the measures

After adoption by the IMO, the transfer from the existing situation to the new situation was a complex operation that had to take place in a very short timeframe. Navigational charts had to be amended, aids to navigation had to be repositioned or newly established, and all users had to be timely and accurately informed.

The following organizations were involved in this process:

- Port of Rotterdam
- Port of Amsterdam
- Hydrographic Service of the Royal Netherlands Navy
- Netherlands Coastguard

Due to thorough co-operation and preparation a smooth transfer from the existing to the new situation has taken place on 1st August 2013 at 00.00 hrs UTC without any noticeable difficulties.

And even though the amended routing structure can be considered as time-proof for the next few decades, unforeseen or unpredictable developments will always occur. Therefore the Directorate-General for Mobility and Transport continuously remains vigilant to new developments requiring slight alterations to the routing structure off the Dutch coast. This has led for instance to the amendment of the existing routing system "Off Friesland" this year due to new offshore oil exploration activities.

The mysteries of the Order Book

From the point of view of historical interest we take another look at some of the Order Books of the past and find them a rich source of material.

A lightvessel tow

At the end of 1978 THV *Winston Churchill* towed No 15 Lightvessel from Swansea to its new station, Channel, to mark part of a traffic separation scheme. Conditions were harsh and on completion of the evolution Captain Sir Miles Wingate, Deputy Master, wrote the following in the tender's Order Book. Lord Greenway, an accomplished marine photographer, took a series of pictures of which that shown here indicates the conditions encountered by the district tender and by the towing crew in the lightvessel.

'Captain Wingate and Lord Greenway joined Winston Churchill at Swansea in order to take passage to view the establishing of a new lightvessel station CHANNEL.

'Taking advantage of a break in the prevailing poor weather departure was made with No 15 L/V in tow at 1400 on the 29th Dec.

'Reasonable progress was made as far as the Lizard Head accompanied by a heavy swell.

'For the following 24 hours both Winston Churchill and tow were hove-to riding out a severe E'ly gale with rough sea, heavy swell, sleet & snow showers. When the weather eased a little we sought shelter for a few hours just north of Eddystone. Early in the morning on the 1st January 1979 departure was made for the A.P.¹ of the lightvessel arriving at 0945. Unfortunately sea conditions prevented putting No 15 to her permanent moorings. So in view of the date it was decided to place her temporarily 4 cables north of her A.P. Winston Churchill remained in attendance overnight.

'The following morning, 2nd January, proved to be suitable and with the assistance of THV Mermaid No 15 was moored in her A.P. by 1300.

'Lord Greenway and Captain Wingate disembarked off Weymouth. During the whole of this difficult and worrying operation Commander Roberts and his Ship's Company carried out their duties in a most seaman like and efficient manner. I offer my heartiest congratulations to them all for a job well done in accordance with the highest traditions of the Service.

'My best wishes to all of you for the New Year. Miles B Wingate, Deputy Master, 2nd JAN 1979.'

North Goodwin 1894

Let us now take a look at the Order Book of a lightvessel from a different era. The volume for North Goodwin opens with entries for No 65 Lightvessel of 12 March 1894.

We read: *'The following instructions and remarks*

are inserted in the Order Book of No 65 Lt Vt prior to her going to her station at the 'Goodwin' (North Sand Head) owing to her exceptional character as being electrically connected with the shore and having an improved siren worked by steam.

'As regards the steam engines three copies are appended to this book, of an official circular published by the Board of Trade, relating to the management of steam engines, with the contents of which the officers and crew are expected to make themselves acquainted, they will further have the advantage of being instructed fully in their duties by a mechanic who will not leave the vessel until the crew are reported to be thoroughly efficient in the details necessary for the management of the engines, with the care of which they are interested.

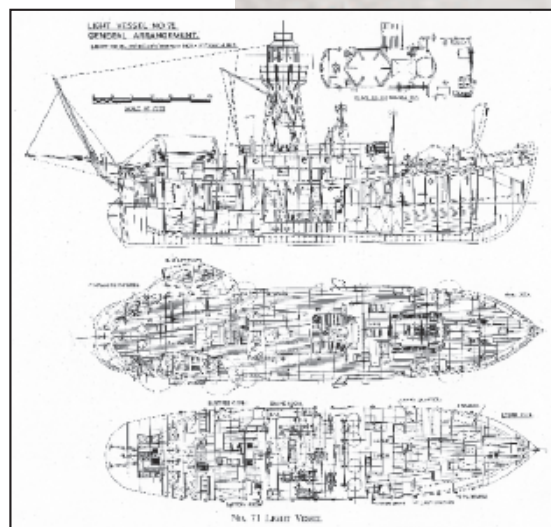
'The vessel's machinery will be inspected every month by the Engineer of the Steam Vessel effecting the Reliefs, and a record of this visit is to be made in the Log Book by the Officer-in-Charge.

'Once every month, until countermanded, the crew to be exercised in putting on the metal curtain which is attached to the fog trumpet, and as a rule, bad weather should be chosen for this trial. With regard to the management of the Electric Cable, and the transmission of messages thereby, special instructions will be furnished as occasion requires.'

We learn that on 17 March 1894 No 65 was put to permanent mooring secured to one three ton anchor and 210 fathoms of 1½" chain laid out.

Main picture: No 15 lightvessel in the tow of THV *Winston Churchill*, Lizard Head, 30 December 1978.
Photo: ©Ambrose Greenway.

Below: General arrangement drawing of No 71 lightvessel, built 1903, sold out of service in 1973.



Below: No 71 lightvessel on station at the Barrow Deep.





Lynn Well 1965

Regarding No 71 Lightvessel, we see that on 26 August 1965 she was marking the Lynn Well station and the Order Book entry reads: '*Visited by Captains Tibbits and Drake on annual inspection from Patricia. The ship is in good order and well maintained. As a spare and taking account of her age² she is a credit to her present masters and crew, as well as to the Depot staff and her previous stations.*'

From available records it is known that No 71 marked the Sunk station variously in 1939, 1940 and 1941. From 1942 to 1946 it marked the Cork and from 1950 to 1952 the Helwick then the Barrow Deep from 1952 to 1954.

Dee

On 27 October 1905 the Superintendent, Captain M J Davison, visited the station and scribed the following: '*10am visited these cottages finding John Cornish Acting Mate on shore from Dee Light Ship in charge of cottages (Editor's Note: these dwellings were used by the crew of the Dee Lightvessel until its discontinuation in 1910²). Found cottages & lighthouse clean, but a quantity of wreckage wood picked up and stored on the entrance floor in lighthouse. This is forbidden. In future an officer instructed not to repeat this offence as it creates dirt & gives off an objectionable smell. The Annual Limewashing of Cottages & Lighthouse tower external is all that will be necessary for 1906 Report of New Work or Repairs at this date.*

In a memorandum on the Lighthouse Service of 1 September 1913 the Secretary to the Corporation, H G Willett, informs that at that time there were 49 lightvessel stations in the service and 11 spare lightvessels.

Mid Barrow Lightvessel

On 10 November 1942 T White, Master ss *Alert* appended:

'Alert towed No 88 from position in River Orwell and placed her in East India Dock. Master instructed to see that all moveable stores were placed under lock and key at Blackwall Depot.'

The Order Book then carries the bland wording '*see page 11*'. Followed by a one line entry by Captain H W T Owen in *Patricia* reading: '*5 October 1948 re-established post-war*'.

In 1950 No 78 Lightvessel marked this station. Successive entries were by the Superintendent or the Visiting Committee and were generally of a good order. Captain Bob Thompson, Chief Superintendent wrote on 21 October 1971 of this lightvessel: '*Removed from station at Mid Barrow. Mid Barrow station now marked by HFP Dalén type lantern. Electric emitter fog signal. The old order changeth.*'

¹ Assigned position.

² Built in 1903 by John Crown & Son of Sunderland. The light vessel was 103' 10" length at waterline; breadth moulded 24' 0" and depth moulded 15' 0".

The Yeoman who found **MOSIS**

TRINITY HOUSEYEOMAN KEVIN MORAN IS THE MANAGING DIRECTOR for Tymor Marine Ltd, a specialist naval architecture and marine consultancy company he formed and has developed since April 2012. Kevin was one of the first intake of cadets when the Scholarship Training Scheme was launched in 1989. After a successful seagoing career, where he attained the rank of Chief Engineer, he moved to the offshore oil and gas sector. He initially trained as a subsea engineer, before gravitating more towards the commercial side of the business. He held senior positions in large multinationals such as Wood Group and DOF Subsea before venturing out on his own with business partner, Professor Colin MacFarlane.

Kevin's focus is on developing and growing the business in the offshore energy and maritime industries, providing owners, developers and operators with competent technical solutions. He is a Chartered Marine Engineer and has a BEng (Hons) in Mechanical Engineering and an MBA from the University Of Strathclyde. He was previously a Board Director of the industry bodies, Scottish Renewables and the Aberdeen Renewable Energy Group.

Now Kevin's company has played an important role in Operation Mare Sicuro – the humanitarian rescue operation currently underway in the Mediterranean Sea. Tymor Marine recently completed a project for the Irish Naval Service as it prepared to deploy its 1,500-tonne patrol vessel *LÉ Niamh* to assist with the ongoing migrant crisis in the region.

Tymor Marine was contracted to carry out a stability review of the vessel and assist with determining how many rescued refugees could be safely carried onboard. The firm used its custom-built MOSIS – Measurement of Stability In Service – system to take various stability measurements whilst the vessel was berthed at the naval dockyard at Haulbowline, Co Cork.

MOSIS is a method of determining the vertical centre of gravity of a floating vessel without the requirement to carry out traditional inclining tests. Consisting of hardware and software, the system allows operators to identify the centre of gravity for vessels or floating platforms *in situ*, removing the need for these vessels to be brought into dock.

An inclining test is normally carried out in still, inshore water and free of mooring restraints.

It is used to calculate the restoring properties of a vessel. MOSIS has been accepted as an equivalent to an inclining test by Lloyd's Register, Det Norske Veritas, Bureau Veritas and the American Bureau of Shipping, with approval being granted on a case by case basis.

The stability review was the second project completed by Tymor Marine for the Irish Naval Service. Earlier this year, the firm completed design engineering analysis work to replace existing cranes and davits on the port quarter of the *LÉ Niamh* and its sister ship *LÉ Roisin*. Tymor Marine personnel were also mobilised to provide assistance during the vessel modifications.

LÉ Niamh officially took over the Irish Naval Service's refugee rescue duties from the fleet's flagship, *LÉ Eithne*, on 13 July. The two vessels exchanged salutes in the Mediterranean, which was the first time such a ceremony had been conducted by two Irish warships outside Irish waters while on operational duties.

Over a four week period when stationed in the Mediterranean, *LÉ Niamh* rescued in excess of 1,000 refugees fleeing North Africa aboard a range of boats.

Kevin Moran commented: *'Identifying the vertical centre of gravity of a vessel is crucial for marine safety. The impact of overloading a boat can be seen first-hand through the capsize and loss of some of the migrant vessels LÉ Niamh and other vessels are encountering in the Mediterranean Sea. Our MOSIS system allows the vertical centre of gravity and allowable deck load of a vessel to be calculated while it remains in service, saving clients time and money.'*

'We were looking to identify the maximum safe additional weight that could be loaded onto the LÉ Niamh in terms of the number of extra people that could be taken on-board during the rescue operations. Also, what space requirements there were for injured and uninjured migrants to allow access, social circulation and while ensuring everyone's safety. It is gratifying that Tymor Marine has played a very small part in the ongoing humanitarian rescue operation underway in the Mediterranean Sea. The work that the Irish Naval Service and others are doing is remarkable. Along with rescuing over 1,000 migrants over the last four weeks, the Irish Naval Service has also helped to bring a baby into the world on-board LÉ Niamh.'

Tymor Marine has offices in Aberdeen, Glasgow and Kaplan, Louisiana and provides work for 12 people.



LÉ Niamh at Haulbowline Naval Base, Co. Cork www.military.ie/naval-service



Younger Brethren's Ambassadors' Group – *An update*

OUR YBAG GROUP HAS NOW BEEN UP AND RUNNING SINCE January of this year. We exist to make the general public aware of Trinity House and all we do and are involved in, and thereby promote the maritime sector in general. We gave our first external presentation at the end of March, and have to date in total given 15 presentations to approaching 600 people. Our presentations cover what Trinity House does as a General Lighthouse Authority for those who do not know us, and we also cover our charity giving, leisure opportunities in THV *Patricia* and at our converted lighthouses. We also introduce Fraternity activities.

We have been to visit Rotary Clubs, U3A groups, sailing clubs and Probus groups mainly in Essex so far, presenting to both smaller groups of 20-30 people and larger gatherings of more than a hundred. The reactions we have had from groups have been very pleasing, with many wanting to hear more about us, and even plan visits to see from where we operate. Questions from our audiences have also kept us on our toes, and I think it is fair to say that our Younger Brother presenters have learnt a lot from bringing questions back to quiz our colleagues.

Our group has just over 20 members, both Advising Ambassadors and Presenting Ambassadors, and with a further 23 bookings in the diary for the rest of this year and into 2016 so far, in Essex, Dorset, Hampshire, Gloucestershire and Kent we are keen to seek out new Younger Brother members. We have had three planning meetings this year at Trinity House in London, but now we are up and running we will settle in to meeting twice a year – in the spring and autumn, to share feedback, update the presentation and look at new groups and audiences to

approach. We are also now starting to look at how social media can help us spread the Trinity House message, and Ambassador Adrian McCourt will be starting us off by actively assisting Neil Jones with our Trinity House Twitter account, tweeting news and interesting facts to our Trinity House followers. We have a wealth of interesting areas to cover, so are hoping to grow our followers considerably over the next year. We will also then turn to look at Facebook and other social media channels.

I would like to thank all our current Ambassadors for giving up their time and for their enthusiastic participation, and our Trinity House colleagues who have assisted in forming our presentation and answering our many questions, to make sure we are well informed and up to date in Trinity House matters. We are all indebted to Freddie Sterritt, who keeps us in order, manages the bookings process and handles all the administration for the group – thank you Freddie.

If you would like to join our Ambassadors Group, please contact Carol Marlow or Freddie Sterritt at Ambassadors@ths.org



Above: Trinity House vessels Patricia and Alert moored at Harwich.

Image Mark Dalton ©Trinity House.



Left: Trinity Homes, Walmer, Kent.

Image Mark Dalton ©Trinity House.

Main picture: Hanois lighthouse.

Image Tim Harvey ©Trinity House.



STARTERS

Welcome to the following new members of staff who have joined us between March and September this year.

Permanent SVS

- John McGowan** – Seaman Auxiliary *Galatea* Starboard – commenced 25 March
- Michael McGlynn** – ETO *Galatea* (S) – commenced 6 May
- Jake Hansell** – Seaman (Auxiliary) *Patricia* (P) – commenced 6 May
- Nick Tudor** – Seaman *Galatea* (P) – commenced 27 May
- Aaron Harper** – Trainee Catering Rating *Patricia* Starboard – commenced 17 June
- Paul Walton** – First Officer *Patricia* (S) 29 July (OIC *Alert* (S) 16 September)
- Texas McGivern** – First Officer *Patricia* (S) 19 August
- Captain Kevin Hooper** – Marine Superintendent 1 September
- Captain Richard Eggleton** – Captain 1 September.

Harwich and Swansea

- Anna Sallis** – Light Dues Team Leader - commenced 1 May
- Sam Longhurst** – Buoy Yard Team Member (Craft) Swansea – commenced 5 May
- Robert Mitchell** – Supplies Officer Harwich commenced 13 July
- Meghan Locke** – Operations Officer 14 July
- Jennifer Smith** – Marine Travel Administrator (part-time) 23 July
- Karen Clarke** – HR Administrator (part-time pm). Commenced 3 August
- Becky Munson** – HR Administrator (part-time am). Commenced 1 September.

Fixed Term SVS

- Nathan Jones** – Trainee Deck Rating *Galatea* (S) commenced 28 March
- Peter Ross** – Trainee Catering Rating *Galatea* (P) commenced 16 April
- Tristan Burgess** – Second Officer Auxiliary commenced 27 May
- Alexander Geere** – Trainee Deck Rating *Galatea* (P) commenced 8 July
- Paul Truckel** – Trainee Deck Rating *Patricia* (P) commenced 8 July
- Evan Grant** – Third Engineer *Patricia* (P) commenced 8 July
- Kevin O’Kane** – Second Officer *Alert* (P) commenced 15 July.

Harwich

Jared Seeley – LH Apprentice (fixed-term) commenced 28 September

Fixed Term to Permanent SVS

Stephanie Keohane, – Second Officer, commenced 9 April.

Harwich

- Fran Campbell** – Receptionist (part-time) 1 May
- Lucy Smith** – Performance Administrator from 1 June
- David Hayes** – Senior Planner from 1 June
- Luke Brand** – Operations Officer from 1 June
- Sandie Williams** – Planning Administrator (part-time) 6 July
- Sarah Neal** – Receptionist (part-time) 1 August.

PROMOTIONS SVS

- Robert Watsham** from Trainee Catering Rating to Cook *Galatea* (S) commenced 6 May
- Daniel Adams** from Seaman to Petty Officer Deck, *Patricia* (S) commenced 16 May
- Luke Chapman** from Lighthouse Technician to ETO *Patricia* (S) commencing 19 August.

Harwich

- Dawn Culley** from Supplies Officer to Supplies Supervisor commenced 30 March
- Tracey Cockerline** from Receptionist to IT Help Desk Administrator (part-time) commenced 1 June
- Pauline McCarthy** to Senior Procurement Administrator commenced 1 June
- Paul Briggs** to Senior Electrical Project Engineer commenced 15 June.

LEAVERS

We bid farewell, extend our thanks for their service and wish them well in their futures to:

SVS

- Tony Hill**, – Cook, last day of service 25 March
- Kevin Blamey**, – Seaman AB, last day of service 15 April
- Frazer MacInnes**, Trainee Deck Rating, last day of service 1 May
- Jonathan Kidd**, First Officer, last day of service 19 June
- Jodie Cooke** – Seaman last day of service 5 August
- Scott Garner** – Seaman last day of service 19 August.
- Stewart Mackenzie**, 3rd Engineer, last day of service 19 August.

Harwich

- Mike Hodgson**, Light Dues Team Leader, last day of service 13 May
- Kit Robinson**, Purchasing Administrator, last day of service 31 May
- Robert Teatheredge**, Operations Officer, last day of service 7 June
- Zoe Barnard**, Assistant Accountant, last day of service 30 June
- Stephene Rawlins**, HR Administrator, last day of service 2 August.

Weddings

Richard Pudney, Engineering Administrator, Harwich, married **Laura** at Layer Marney Tower, Essex on 23 August 2015.



Births

To **Michelle Tindall**, Charity Officer, Corporate Department, on 28 August 2015, **Jamie Robert** weighing 6lb 11oz.



To **Stephen Vanstone**, Navigation Services Officer and wife **Gemma**, on 28 August 2015, **Bella Rose** weighing 7lb 12oz.





Captain Andrew Adams RD FNI

On 15 August 2015 at the age of 67, Captain Andrew (Andy) Charles Adams Younger Brother of Trinity House and former Trinity House London District North Channel First Class Pilot.

He was educated in Dovercourt, and first went to sea in 1963 with the Trinity House Steam Vessel Service. In 1964 he served with various companies including Cunard, Blue Star, Union Castle, Watts Watts and Ellerman as an Ordinary Seaman and as an Able Seaman. In 1968 he studied at King Edward VII Nautical School and Sir John Cass College for his Home Trade Mate's Certificate.

In 1968/69 he served as a Second Mate with Shell Mex & BP Limited and this was followed by two years as Second and First Mate with Crescent Shipping. He served with Elder Dempster as Second Mate from 1971/72 then returned to Crescent for a further year in command at the same time as he passed for First Mate and went on to serve as First or Second Mate with Sealink UK and Sea Containers Limited.

His pilotage career commenced in 1979 when he commenced tripping for the London District North Channel service and on appointment was promoted from Fourth through to First Class Pilot to 1984. In 1988 the Trinity House Pilotage Service passed to port authorities and he was transferred as Senior First Class Pilot to the Harwich Haven Authority (HHA). During his time as a pilot he regularly piloted vessels of more than 50,000grt and VLCCs with draughts of more than 12 metres. He retired as Chief Pilot with HHA in 2008 and continued as Simulator Pilot and Marine Adviser to HR Wallingford until ill health befell him earlier this year.

From November 1982 he served on the London Sea Pilots (North) Committee and later was its Honorary Secretary. From time to time he

undertook First Mate and Master's duties of foreign going vessels including the former THVs *Mermaid* and *Winston Churchill* following their sale out of service delivery to new owners in the Mediterranean.

With the Royal Naval Reserve he was commissioned as a Lieutenant in 1976 and from late 1980 to early 1981 served as Naval Liaison Officer at the Royal Hong Kong Police HQ. With the RNR he was a specialist in amphibious warfare, was promoted to Lieutenant-Commander in 1984 and for four years to 1988 served as Senior Naval Officer of Naval Parties embarked in Ships Taken Up From Trade (STUFT) during amphibious warfare exercises in the Baltic and in Arctic Norway. During this time he completed the Convoy Commodore Staff Officer Course in HMS *Vernon* and undertook other training in joint warfare and amphibious operations. He was promoted Commander RNR in 1989 and later Captain and was ADC to HM The Queen from 1999 to 2002.

Captain Richard Woodman writes: '*Andy Adams collaborated with me in the preparation of the Corporation's quincentenary history, Light Upon the Waters. His input was absolutely crucial in that he was the expert in all things relating to pilotage. Since the implementation of the Pilotage Act of 1987, all connections between harbour pilotage in a significant number of both major and minor English and Welsh ports and Trinity House have been severed. The remit to cover this important aspect of the Corporation's work, indeed a fundamental part if one considers the terms of the original Henrician charter of 1514, was outside my own expertise, so having Andy – who in his enthusiasm for the history of the Pilotage Service matched my own interest in the other aspects of the Corporation's active services – to supply me with a comprehensive historical text on pilotage was nothing short of a Godsend. His own active part in the end of the relationship between Trinity House and the pilots brought a personal poignancy to his narrative. I am most grateful to him and am pleased that he received his half of the Maritime Foundation's Mountbatten Award before his death.*'

Captain John Barnes MRIN MNI THS (Ret'd)

On 15 September 2015 at the age of 77. He retired in 1998.

Captain John Barnes left the Service on 9 April 1998 after nearly 39 years' service, initially afloat with the Steam Vessel Service rising through all ranks to command, followed by 18 years in shore appointments, latterly as the first (and only) General Manager (Operations). John Barnes always had a love of the sea and sailing, and it was almost inevitable that his career choice took him away to

sea. He served a year's pre-sea training at the School of Navigation, Warsash, emerging a Senior Leading Cadet fully versed in a wide range of nautical subjects from splicing to ballroom dancing, having added to his sea experience with a round-trip in RMS *Queen Elizabeth* as a deck boy.

In 1959, after a few years with P & O, John Barnes applied for a post in the Steam Vessel Service of Trinity House and served his first tour of duty as 3rd Officer of the coal burning converted deep sea trawler *Triton*, engaged on lightvessel relief duties out of Harwich.

During the next 20 years afloat John Barnes served in *Alert, Stella, Vestal, Patricia, Mermaid* and *Winston Churchill* including command of the latter three vessels after his promotion in 1974.

In 1982 John Barnes came ashore, initially as Base Commander, relieving the six Superintendents around the coast. During this period, his earlier experience in India together with his extensive experience of buoy working found him as an on-scene advisor to a buoy laying operation in the Gulf of Kutch on behalf of the Indian aids to navigation service. A year later he was promoted Captain THS, and appointed Assistant Superintendent. In 1984, he was promoted Superintendent Operations, and finally in February 1986 he became Chief Superintendent, the then most senior post in the uniformed branch of the Trinity House Service.

In 1990 Trinity House was entering a period of dramatic change and John Barnes was appointed to the new post of General Manager (Operations), second in command to the Director of Operations. These were days of rapid development: automation of the Lighthouse Service, switching of the maintenance function to Operations, downsizing and multi-skilling of the maintenance work force, downsizing of his beloved SVS and the introduction of Onboard Ship Management and Management Systems for Quality being but some of the successful initiatives undertaken during John Barnes' tenure of office as General Manager. In all these necessary changes, although far removed from the Trinity House he had entered, he played a full and trusted role, always ready with the experience necessary to ensure success. It is probably a measure of his success that with his retirement, the post of General Manager (Operations) was dispensed with to create a flatter management structure in Operations.

On departure he undertook a consultancy for Middle East Navigation Aids Service, bringing his experience in the establishment of a quality management system to that organisation. He was sworn as a Younger Brother of the Corporation in 1998.

OBITUARIES

Captain Richard Woodman writes: *'John Barnes was highly regarded by all his colleagues in the SVS. A fine seaman and an imperturbable character, he exuded a quiet, easy-going confidence that was rarely rattled by events. In a long acquaintanceship, which dates back to 1967 and includes several periods when we served together on the same vessel, I only saw him angry once, and then it was fully justified.'*

Mr W F Dimmock

The death was reported on 25 April 2014 of William Frederick Dimmock, retired PTO and Photoprinter in the Engineer-in-Chief's Department, London, at the age of 98. He retired in 1985 after 12 years' service.



Above: An example from a Chance Brothers catalogue of the early 20th century.

Bill Dimmock began work in the early 1930s when he joined the famous lighthouse manufacturing firm of Chance Brothers at Smethwick near Birmingham and where, after an apprenticeship and a period in the works (and the usual stint of evening classes), he was promoted to the Drawing Office where he worked on the design of lighthouse optics, a product for which Chance Brothers were of world renown.

In 1955 the firm was taken over and became Stone-Chance, subsequently moving to Crawley in Sussex where Bill continued as Lighthouse Engineer until he joined Trinity House in 1972.

He spent much of his time in the Drawing Office support group where his considerable knowledge of lighthouse optics coupled with drawing and design experience was used to good effect.

Mr E D Humphrey

It is with regret that we report the death of Ernest Deryck Humphrey, former PPTO, on 18 September 2014 at the age of 94. Details have only recently become available.

Deryck Humphrey retired from the Trinity House Lighthouse Service in 1985 after 23 years as a Lighthouse Engineer. He hailed from Shenfield, Essex where he was born in 1920 and as a boy was especially interested in Thames sailing barges. These were to be his passion in later life for he sketched and painted them. His engineering career began in the days when domestic radios had chargeable wet batteries. After an apprenticeship as a motor mechanic he joined the army in 1939 and was taken prisoner in Belgium in 1940 and not repatriated until 1945. During his time as a PoW he acquired a working knowledge of German which was of good use to him in his later work with IALA.

After returning home and demobilisation he served variously as a photo printer and then with Southern Railway largely involved with the electrification of the Kent Coast Railway System which sparked an interest in ships gained in working by Dover Harbour. He joined Trinity House in 1962 and by 1982 was responsible for the combined Research & Development Department and for Radio Navigation Aids. During this time he was given responsibility for the Evaluation, Test and Development Section during the huge technological revolution that was underway in the 1960s and 1970s. This was a time when there were few engineering standards for new components. One of the remarkable R&D achievements was the running of a diesel engine non-stop for twelve months and findings were valuable to industry and lighthouse services. He worked on the application of silicon chip and computer technology for lighthouse requirements and researched reliability techniques for lighthouse operation.

At Trinity House he chaired a monthly meeting on reliability and worked on System 80, the standardisation of lighthouse design where components, already installed in shipping containers for commissioning with the minimum of site work could be taken to a lighthouse by ship or helicopter. This was demonstrated at the Brighton Conference in 1985. Deryck Humphrey attended the Stockholm Conference in 1970 and presented papers at Ottawa (1975), Tokyo (1980) and Brighton (1985). Before his retirement he chaired a sub-committee on automation.

His valuable contribution to the work of IALA was recognised in 1985 by the then Executive Committee when it appointed him an Honorary Personal Member of IALA.

Dr Nick Ward writes: *'Deryck Humphrey was head of Evaluation Test and Development when I joined Trinity House in 1979. This was a time of rapid technological change and one of our main goals was to achieve reliable automatic operation of*

diesel generators on remote sites. However, under his direction we were also making good progress with renewables: wave, wind and solar, which would provide the long-term solution for energy on buoys and offshore lighthouses. Deryck was a good person to work with, very understanding and apparently easy-going, although with a clear vision of the future direction for the service. There was a wide range of work underway apart from energy systems. The experimental station at Dungeness carried out a large number of light and sound signal measurements, as well as diesel engine testing, evaluating wind turbines, solar modules, heat recovery systems, heat pumps and fuel cells. Together with workshop staff in the basement at Trinity House, Deryck was in charge of more than 20 people and a budget of several million pounds in present day terms. The research and development function of the lighthouse service has always contained some 'interesting' characters and Deryck presided over this diverse team with a calm, if slightly quizzical air. The results of his tenure can still be seen throughout the General Lighthouse Authorities and internationally.'

Mr G P Matthews

On 23 November 2014, Gordon (Don) Phillip Matthews, former Chart Officer London, aged 89. He served 21 years until his retirement in August 1991.

As Chart Officer (always referred to as the Chart Corrector) Don was responsible for maintaining all the folios of Admiralty Charts held in Trinity House and, of course, this was at the time of the paper chart for the digital version had yet to arrive. Each paper chart held had to be amended following receipt of weekly Admiralty Notices to Mariners, also in paper form. Surveys produced by the then Steam Vessel Service were marked on Charts and the Examination Committee (the Examiners) considered the need for changes in buoyage as a result.

Applications for maritime works for example from local authorities, owners of piers and jetties and so forth were considered by the Examiners with the proposals applied to the relevant Admiralty Chart. Likewise consideration was given to applications for sanction to add, change or remove seamarks operated by local authorities. Applications included those for dredging, aggregate extraction, the establishment of production platforms, pipelines, cable crossings and positioning of wellheads. Advice was also given to government agencies, and maritime consultants and each had to be considered on an up to date chart furnished by Don with the relevant proposals marked on it. One of the most important activities of Trinity House was (and remains) the marking of wrecks

and other hazards considered a danger to navigation and here again Don prepared the necessary charts for consideration by the Examiners. Charts required by the Trinity Masters at the Admiralty Court had to be assembled, marked and delivered. From time to time members of the Board travelled overseas on consultancy tasks and this frequently needed access to the appropriate up to date chart folio. Don's calligraphy skills were often called upon for certificates, Court minutes and other documents.

Mr A W Snook

The death was reported on 22 August 2015 at the age of 88 of Alan Westmore Snook, retired Deputy Secretary of the Corporation. He retired in 1985 after 37 years' service.

He joined Trinity House as a Clerical Officer in the Finance Department in 1948 and after nine years was promoted to Executive Officer whereupon he was transferred to the Lights (Operations) Department. In 1966 on promotion to Higher Executive Officer he was transferred to the Finance Department and up to 1975 progressed therein attaining the grade of Chief Accountant in the rank of Principal.

On the retirement of Mr SW (Sid) Heesom he succeeded as Deputy Secretary in 1980 and four years later took on greater responsibility as Director of Personnel as well as performing the duties of Deputy Secretary to the Board of Trinity House.

In 1982 he was appointed Chairman of the IALA Conference Organising Committee which met regularly over three years and ensured, with Tripartite representation, smooth operation of the 1985 IALA conference held in Brighton. This was hosted by the three General Lighthouse Authorities (the Commissioners of Irish Lights, the Northern Lighthouse Board and Trinity House) and was the first time since 1929 that an international aids to navigation gathering on such a scale had been held in these islands. Alan Snook's leadership and administrative ability, coupled with an enthusiastic team, were reflected upon for many years in IALA circles particularly in the planning of the four yearly international lighthouse conferences.

Alan Snook will always be remembered for his cheerfulness and wit, also his ability to speedily hoist in any problems and advise those in trouble who had come to seek the benefit of his wisdom gained over many years' service to the Corporation.

Kenneth James Wilson

On 16 July 2015 aged 89, former Higher Professional & Technical Officer (HPTO), Head Office. He retired in 1987 after 34 years' service.

As the officer-in-charge of the Drawing Office with all that entailed he ensured that the unit kept



Above: Creation of new equipment in an effort to provide cost-effective and reliable aids to navigation would not have been possible without input from the Drawing Office and Blackwall Workshops. This example shows a lantern being assembled at Blackwall for Northfleet, one of the Thames river lights.

up with vast amount of graphics production generated by electrical, mechanical, and civil engineering and R&D demands. This was part of a huge programme of lighthouse electrification followed by one of modernisation then automation carried out by Trinity House over the post-war period up to the late 1980s. All this through the transition from pens and pencils, the Ozalid (reproduction) process to computer-aided-design and manufacturing (CAD/CAM) and the beginnings of on-screen work familiar today.

Dave Mayhead, former Safety Adviser writes: *'Jim was a busy Drawing Office Manager who was not known to mince his words. During his time in office a great deal of work was carried out under the instructions of the Engineer-in-Chief's Department with regard to the modernisation of the Lighthouse Service. The record of the modernisation programme and its success proves that a good sound team was present at this time'*

Adrian Wilkins, of the Engineer-in-Chief's Department in London then at East Cowes and now living there in retirement adds: *'He was managing the Drawing Office when I joined in 1975 a large part of the DOs work was the conversion of offshore stations from PVB to electric light and the replacement of explosive fog signals with electric and compressed air signals. The emphasis then moved on to the early trials with automated systems and then the automation of the lightvessel fleet and eventually offshore lighthouses. I started in the Planning Department, working for Geoff Winterburn, then transferred to the Mechanical Engineering section and was later promoted to Principal Mechanical Engineer. We then re-organised the Drawing Office and Jim came to work for me before we moved to Cowes.'*

It is with great sadness we report the deaths of:

Thomas Roy Howe, former LHS Assistant Keeper, on 24 April 2014, aged 81. He served 10 years

Robert Paul Fletcher, former LHS Assistant Keeper on 22 June 2014, aged 59. He served 10 years

Seth Kendrick, former SVS Cook, on 20 August 2014, aged 89. He served 21 years

Christopher Goffin, former SVS Quartermaster on 29 August 2014, aged 62. He served 19 years

Frank M Biddle, former LHS Assistant Keeper on 13 September 2015, aged 88. He served 19 years

John Nelson, former AK LHS, on 13 October 2014, aged 55. He served 16 years

Duncan Johnstone, former Carpenter SVS on 3 November 2014, aged 75. He served 18 years

William Romilly Trenoweth, former Engine Room Assistant, SVS on 14 November 2014, aged 72. He Served 22 years

Elvet Jones, former Lightsman, on 8 December 2014, aged 82. He served 12 years

Norman James Voyle, former Principal Keeper, LHS, on 4 January 2015, aged 82. He served 26 years

Don Gaythorpe, former 2nd Engineer SVS, on 24 January 2015, aged 83. He served 24 years

John Munro, former Lightsman Grade 1, on 7 February 2015, aged 92. He served 18 years

Kenneth Kessell, former 2nd Engineer, SVS, on 16 February 2015, aged 84. He served 23 years

Dorothy Scase, former Typist/Telex Op, Harwich, on 26 February 2015, aged 92. She served 9 years

Ivor Noakes, former Industrial Blackwall, on 26 March 2015, aged 86. He served 28 years

Ronald Grant, former Turner, Blackwall, on 26 April 2015, aged 86. He served 19 years

Frank Allen, former Master LVS, on 29 April 2015, aged 84. He served 18 years

John Roberts, former Tel Op, Swansea, on 1 May 2015, aged 91. He served 5 years

Philip Richards, former Craft Aux A DLF Swansea, on 9 May 2015, aged 75. He served 11 years

Philip Steel, former SVSR, on 26 May 2015, aged 61. He served 3 years

Cyril Matthews, former Maint Techn GLA 3 Swansea, on 27 May 2015, aged 75. He served 26 years

Kenneth Curtis, former Chief Engineer SVSO, on 19 June 2015, aged 87. He served 32 years.

RETIREMENTS



© Liverpool Echo.

Above: Captain Trevor Dann in THV Patricia at the Battle of the Atlantic 70th anniversary commemoration, Liverpool, May 2013.

Captain Trevor Dann THS

Captain Trevor Dann retired on 9 September after more than 38 years' service to Trinity House. Trevor joined as 2nd Officer in 1977 after time spent with Trinder Anderson. He was promoted to First Officer in 1986 and to command in 2002. Captain Simon Robinson writes: *Although during Trevor's time with the Support Vessel Service he has sailed in most Trinity House vessels, his name has become synonymous with THV Patricia. As such he has been closely involved in a number of ceremonial events, the highlight of which was his command of Patricia for the 2005 International Review of the Fleet at Spithead, preceding HMS Endurance, in which Her Majesty the Queen was embarked.*

'Trevor was always well known for his calm and professional demeanour and his understated but sharp sense of humour. He is popular throughout the service, and most notably with the Patricia Voyages passengers.'

'To mark his retirement Trevor's many friends and shipmates across the service contributed toward an oil painting of the quay at Harwich with Trevor's Alvis classic car in the foreground and THV Patricia in the background. On Trevor's final day in the Service Senior SVS Officers held a dinner for him on board THV Galatea where he was presented with his Certificate of Service and a print of Needles Lighthouse.'

Colin Bottomley

Colin retired on 31 March 2015 after 38 years' service, most latterly as the Procurement and Inventory Manager.

Colin oversaw Trinity House's Procurement and Supplies functions, based at Harwich for the last years of a long career. Previously he had worked for many years out of the District depot at Great Yarmouth in Norfolk, in the days when Trinity House had six District Depots around England and Wales.

As the Procurement and Inventory Manager he ensured that everything from colossal ship

engines to the smallest loose nuts and bolts were in ready supply, accounted for and represented both good value and high quality.

Overseeing a procurement team in Harwich and Supplies teams in both Swansea and Harwich, his contribution to Trinity House's provision of aids to navigation has been very significant and his sense of humour, approachability, pragmatism and common sense made for an excellent head of department. His retirement years look to be split between golf and grandchildren and we wish him all the very best.

Steve J W Dunning

Steve retired on 31 March 2015 after 41 years' service, most latterly as the Planning and Performance Manager.



Above: Steve Dunning with HRH The Master and the Deputy Master, Ian McNaught at Harwich, 12 March 2013.

With a Trinity House career that began in the early 1970s, Steve saw first hand – and was often directly involved in – a sequence of enormous changes that transformed Trinity House; the inception of the IALA Maritime Buoyage System in 1977; the end of the Pilotage Service in 1988; the addition of helipads to offshore lighthouses in the early 1970s and the automation of the last lighthouse in 1998; the abolition of the District depots in the late 1980s and the eventual move to one depot in Harwich with an outstation in Swansea and a forward operating base in St Just.

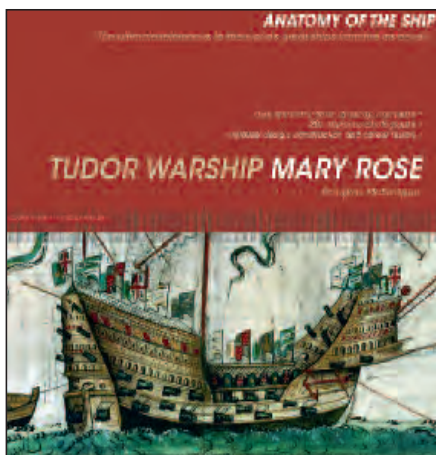
Notably, he worked in almost every department at Trinity House over the course of four decades; as the Planning and Performance Manager he oversaw the massive changes made to our 24/7 aid to navigation monitoring in 2014, installing the state-of-the-art Planning Centre and implementing overnight monitoring of the lighthouses and buoys of our sister lighthouse authorities in Scotland and Ireland.

As manager of the Commercial Department, he ensured that the lighthouses we open to the public were educational, entertaining and memorable; similarly, he took the lead on many of the events that took place both publicly and internally celebrating our 500th anniversary.

His contribution to the mariner was recognised when he was sworn in as a Younger Brother of Trinity House in 2011. We wish him all the very best for his retirement as he cheers on his beloved Ipswich Town FC.

Tudor Warship Mary Rose:

By **Douglas McElvogue**, published by Bloomsbury
144 pages, ISBN 978 1 8448 6275 7, paperback.
Price **£18.99** / eBook **£16.99**



Part of the Conway Anatomy of The Ship series, *Tudor Warship Mary Rose* provides an insight into the naval architecture and construction of the iconic Tudor ship. This introduction to *Mary Rose* provides over 200 scale drawings showing the ship's interior and exterior. Furthermore, there is much within on the warship's commissioning, administration, manning, handling, arming, fighting, and history including her disastrous loss and, of course, interpretation of the ship through the Mary Rose Trust.

Mary Rose, the great warship, was built between 1509 and 1511 and served 34 years in Henry VIII's navy before her catastrophic loss in the Battle of the Solent on 19 July 1545. She was the pride of the Tudor fleet. Yet of her there was little concern until her timbers were dramatically raised to the surface in 1982 after 437 years at the bottom of the Solent.

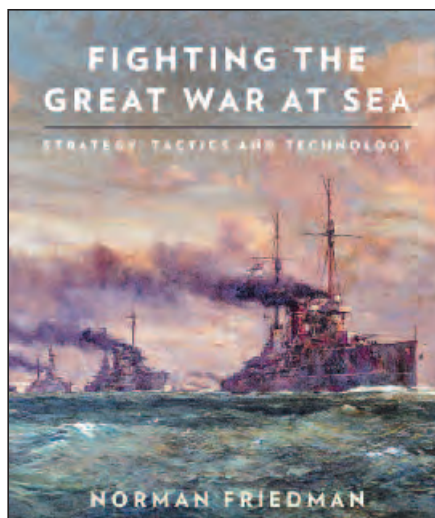
Tudor Warship Mary Rose provides valuable graphical representation of *Mary Rose*. Technical plans are supported with copies of paintings and artefacts as well as explanatory views. Douglas McElvogue, was a Senior Research Fellow at the Mary Rose Trust and specialises in maritime archaeological reconstructions. Here he has used archaeological techniques to trace the development and service life of Henry VIII's warship, while placing it in the context of advances in ship construction.

In recent years the Corporation of Trinity House has supported the Mary Rose Trust and in *Flash* we have been privileged to carry news of *Mary Rose* from time to time.

Fighting the Great War at Sea:

Strategy, Tactics and Technology.

By **Norman Friedman**, published by Seaforth Publishing
416 pages, ISBN: 978 1 84832 189 2, hardback.
Price **£36.00**



For many the image of the First World War is of the Western Front. Whereas much of the action did occur on land its maritime character deserves study for it was essentially a struggle about mastery of the seas and the protection of imperial routes. For example, the Suez Canal, the route to India and the east, had to be kept open at all costs and transport of the products of Malaya, namely rubber and tin, could not be impeded. There was also the matter of access to resources for which ships and seafarers were necessary for exploitation and transport.

This new book concentrates on the way in which each side tried to use or deny the sea to the other, and in so doing it describes rapid wartime changes in ship technology and warfare. Combat produced many surprises such as the impact of the mine and torpedo and the author introduces new tactics and improved command and control.

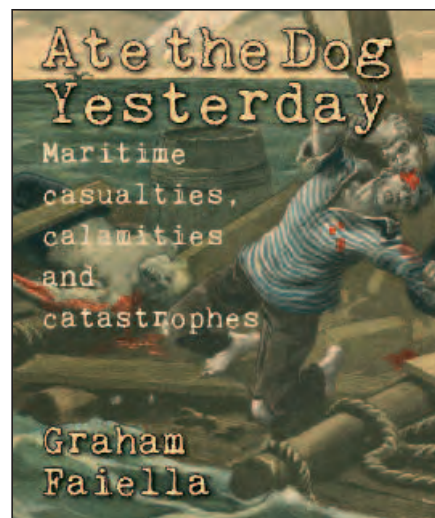
Dr Friedman brings together technical, and tactical aspects of the First World War and demonstrates how its lessons dominated the way navies prepared for the Second World War.

Contains a valuable list of resources, more than 40 pages of chapter notes and a wealth of illustrations.

Admiral Sir George Zambellas, First Sea Lord and Chief of Naval Staff, Younger Brother of Trinity House, has written the book's foreword in which he draws attention to the greater cooperation between the US Navy and the Royal Navy in the conflict, a special relationship that exists to this day.

Ate the Dog Yesterday: Maritime casualties, calamities and catastrophes.

By **Graham Faiella**, published by Whittles Publishing,
511 pages, ISBN 978 1 84995 089 3, paperback.
Price **£30.00**



Years ago this reviewer each day had the task of reading *Lloyd's List* to spot news of wrecks, casualties and other information that may be of interest to the the Lights (or operations) Department of Trinity House. In this book an author has spent a considerable time combing through the Maritime Intelligence and Casualties columns of every issue of *Lloyd's List* to extract the most compelling incidents which primarily feature sailing ships from a bygone era.

Topics featured include remarkable voyages, mutiny, murder and mayhem, fire, ice, earthquake, seaquake and volcanoes, shipwreck, collision, castaways (and cannibalism) and great disasters. Some reports are illustrated from contemporaneous sources familiar to the student of newspapers before the widespread use of photography. *Ate the Dog Yesterday* features reports from around the world one such being from *The New York Times* of 10 November 1869 reading: *Tahiti: A Fearful Scene on a Coolie Ship – The Slaves Mutiny and Kill the Captain and Two Officers – They are Blown to Pieces with Powder by the Second Mate.*

Lloyd's List has reported shipping news since 1692 when it first appeared in Thomas Lloyd's coffee house and has remained as the medium of shipping intelligence ever since and is now totally digital in its output. The sea and ships can, without doubt, be dangerous such that in 1869 the *List* reported 10,359 casualties for sailing vessels and just 1,247 for steamers. This is a veritable treasure chest of, as the sub-title says, maritime casualties, calamities and catastrophes.

Lighthouse Photography Competition

Enter the Lighthouse Photography Competition to be in with a chance for a week's voyage on THV Patricia!

It's worth remembering that many of the fantastic photographs you see printed in *Flash* magazine are submitted by members of the public to our annual lighthouse photography competition. To see your photograph in the lighthouse calendar, on the front of our Christmas card or in the pages of *Flash*, grab a camera, find a lighthouse and enter our annual lighthouse competition!

There are many lighthouses in some beautiful locations so for your chance to win a week's voyage around our coastline on our flagship THV *Patricia* send us your best lighthouse picture.

To submit a photograph and enter our competition, please go to the Lighthouse Photography Competition page on the Trinity House website. The closing date for entries is 28 February 2016.

Terms and conditions apply, for more information please see the Lighthouse Photography Competition at: www.trinityhouse.co.uk/lighthouses/photography-competition.



Hurst Point Lighthouse by Aaron Daniel.



Needles Lighthouse by Peter Williams.



Top: Peninnis Lighthouse by Des Harris.

Above: South Stack Lighthouse by Terry Greenwood.

Below: Portland Bill Lighthouse by Marc Bryans.



2016 Lighthouse Calendar

Collected: **£ 8.50**
 UK: **£13.50 inc P&P**
 EU: **£15.00 inc P&P**
 Worldwide: **£18.00 inc P&P**



The 2016 Calendar features:

Portland Bill (cover image as seen above), Cromer, Godrevy, Longstone, Trwyn Du, Needles, Peninnis, South Stack, Nash Point, Dungeness, Hurst Point and Les Hanois.

2015 Christmas Card

Collected: **£10.50**
 UK: **£12.00 inc P&P**
 EU: **£15.50 inc P&P**
 Worldwide: **£17.50 inc P&P**



This year's Christmas Card features a spectacular night scene of Portland Bill Lighthouse as seen above. Each pack of 10 cards is approximately A5 in size with matching envelopes.

Historic Prints A3

Unmounted, including UK P&P: **£25.50**
 Mounted, including UK P&P: **£31.50**

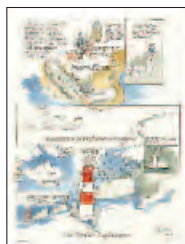
Please enquire directly for EU & Worldwide prices
 20% discount for staff.



Peter Kent Postcards

Individual postcards	Set of 5 postcards	A4 postcard
Collected £2.10	Collected £9.00	Collected £4.50
By post UK add £0.50	UK add £0.50	UK add £0.50
By post Europe add £0.85	Europe add £1.35	Europe add £1.35
By post Worldwide + £1.20	Worldwide + £2.00	Worldwide + £2.00

All postcards are A5 in size apart from the Quincentenary version which is A4.



The Needles Lighthouse.



THV Patricia.

THV Patricia Jigsaws 500 piece

Collected **£11.50**; UK **£16.50**; EU **£16.50**; Worldwide **£18.50**



Books

Lighthouses of Trinity House: £30 collection;
 UK **£37.50**; EU **£41.50**; Worldwide **£47**

Rain Later Good: £30 collection; UK **£37.50**;
 EU **£39**; Worldwide **£43.50**

Keepers of the Sea (as illustrated below)

£25 collection, UK **£28**; EU **£32.50**; Worldwide **£37**



Rock Lighthouses: £25 collection, UK **£30**;
 EU **£34**; Worldwide **£39**

Lighthouses of the North East Coast: £16.99 collection, UK **£19.99**; EU **£24**;
 Worldwide **£27.50**

Lighthouses of the South West Coast: £14.99 collection, UK **£17.99**; EU **£21.50**;
 Worldwide **£25.50**

Lighthouses of the East Coast: £16.99 collection,
 UK **£19.99**; EU **£24**, Worldwide **£27.50**

20% discount for staff.

Patricia Voyages

Fleeces - £30 collection, UK **£35**, EU **£36**,
 Worldwide **£39.50** Sizes range from S – XXL



DVDs

To Serve the Mariner

End of an Era

Storm Swept

£14.50 collection, UK **£15.50**; EU **£16.00**;
 Worldwide **£16.50**

Pack of all three DVDs: **£37** collection, UK **£40.00**;
 EU **£42.00**; Worldwide **£44**

20% discount for staff.



Littledart Lighthouse Models

- Start Point **£36.50**
- Longstone **£41.50** *Illustrated below, left.*
- Lizard **£41.50**
- Trwyn Du **£36.50**
- Portland Bill **£41.50** *Illustrated below, middle.*
- St Anthony's Head **£36.50**
- Trevoise Head **£36.50**
- St Catherine's **£41.50**
- Cromer **£36.50**
- Nash Point **£46.50** *Illustrated below, right.*
- Southwold **£36.50**
- Orfordness **£36.50**

All prices above include UK P&P

Please enquire directly for EU & Worldwide prices



Orders should be submitted to:

Commercial Department, Trinity House, Harwich,
 Essex, CO12 3JW www.trinityhouse.co.uk/shop

Collection can be from our Harwich Depot or by prior arrangement at Tower Hill, London or our Swansea depot.

Any enquiries should be made to **01255 245156**. The preferred method of payment is online using **PayPal**. Orders will be also be accepted by post or telephone with cheque or credit card payment. However we do not accept American Express.



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