flash

SUMMER 2015 ISSUE 23

TRINITY500
SERVING THE MARINER
1514 – 2014

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Trinity House

The Corporation of Trinity House

Master – Her Royal Highness The Princess Royal KG KT GCVO

Corporate Board *as at 28 May 2015*

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Simon Sherrard Esq DL *(Rental Warden)*
Captain Nigel Palmer OBE MNM *(Nether Warden)*
The Rt Hon The Viscount Cobham
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Captain Nigel Hope RD* RNR
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Commodore Bill Walworth CBE RFA
Commander Graham Hockley RN *(Secretary)*

Lighthouse Board *as at 28 May 2015*

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

editor's note

WELCOME BACK ALL READERS – on shore or at sea – to another edition of ***Flash***. I'm pleased to be able to present to our readers another set of great feature articles, bookended by news from Trinity House's staff, events and works.

HRH The Master visited staff at Swansea, almshouse residents at Walmer Homes, the crew of THV ***Alert*** and opened the refurbished visitor centre at Portland Bill Lighthouse; the internationally significant ACCSEAS project came to a successful close and we completed the modernisation project of Bardsey Lighthouse. I hope you'll enjoy reading about all of this and more in this edition.

As always, many thanks to all of our contributors for their interesting and informative articles; we always 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 11 September 2015.

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Mark Dalton ©Trinity House 2015

COVER IMAGE: Easter 2015 saw the opening of a new Lighthouse Visitor Centre at Portland Bill Lighthouse in Dorset. The lighthouse has regularly been visited by over 20,000 people a year so this represents a fantastic opportunity to engage with a large number of visitors, to inform them of the history of Trinity House, of aids to navigation in general and of Portland Bill Lighthouse in particular.


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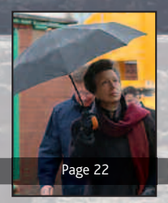
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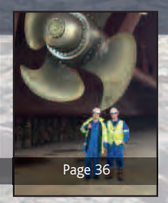
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Captain Ian McNaught

Once again it is a pleasure to reflect on times past and to take a look into the future. Since I last wrote we were coming to the end of our 500th year and it was a pleasure to escort HRH The Master to a number of functions in and around Trinity House, not only in London but also in Harwich, St. Just and Swansea. I know that she welcomed seeing something of our service and its people and it was fitting that the marine community at large was able to appreciate in no small measure what our people do in maintaining maritime safety for the world's mariners who sail in our waters. Recent weeks have seen the completion of the EU-funded ACCSEAS Project which certainly awakened the international community to the function of marine aids to navigation services in North West Europe and how, by working together, maritime safety can be assured.

The new Lighthouse Visitor Centre at Portland Bill was opened formally by HRH The Master in May. Photos by Mark Dalton.

You will see within the covers of this edition of *Flash* the work that we have carried out taking advantage of the expertise of our people in aspects of science, technology and administration to give the best delivery for the benefit of our stakeholders. You will also see here a reflection on the activities of kindred organisations in the field of maritime safety and in education.

The new Lighthouse Visitor Centre at Portland Bill opened to the public in March and was opened formally by HRH The Master in May. The work at Portland has rejuvenated the premises to create a visitor centre themed around our history and taking into consideration marine aids to navigation, charity for those in need and education, all over five centuries. This is an exciting, informative and stimulating new attraction for the area and I'd like to recognise the good work done by all who played a part in creating this handsome addition to our educational offerings.

Towards the end of this year we will commence a new helicopter operations contract which, for the first time, will provide a service covering all three General Lighthouse Authorities in these islands. This is a departure from the norm where each authority had its own contract helicopter service and the unified style will deliver significant savings to the General Lighthouse Fund.

In February we bade farewell to Commodore Jim Scorer as Director of Operations, a post which he had held since 2007. Although he remains as an Elder Brother, his time as DOps will be remembered for the energy, enthusiasm and commitment he brought to projects such as the incorporation of new tonnage and implementation of service reorganisation, as well as the establishment of the new Planning Centre early in 2014.

Looking back over the anniversary year there is much in the way of merchandise that has been created to commemorate our quincentenary and I hope that our readers have each found a suitable memento to treasure or to give to friends and family.

Once again, to close my column for the summer I send you all my very best wishes, be you ashore or afloat, still serving or retired and look forward to writing again as we approach the year's end.

Ian McNaught

a review of the last eight months at TRINITY HOUSE

OCTOBER 2014

NEW HELICOPTER CONTRACT In October the General Lighthouse Authorities of the UK and Ireland (Trinity House, the Commissioners of Irish Lights and the Northern Lighthouse Board) announced a £13 million seven year contract with P D G Helicopters for the provision of helicopter services to cover all three Authorities. Provision of one helicopter operator across the Authorities will deliver significant cost savings to the General Lighthouse Fund which pays for the safety critical work of the GLAs to provide a reliable, efficient and cost-effective maritime aids to navigation service around the coasts of the UK and Ireland. Hitherto each Authority has contracted its own helicopter service provider and co-ordinated its own activities and the decision to award a single tripartite contract for helicopter services is regarded as a first for the participating Authorities. The GLAs have been operating helicopters since the 1970s for transport to remote sites and for specialised operations with support vessels and lighthouses.

ANNUAL NATIONAL SERVICE FOR SEAFARERS Last year's Annual National Service for Seafarers was held on 15 October in St Paul's Cathedral and commemorated the 500th anniversary of the Corporation of Trinity House and of the founding of the Company of Watermen and Lightermen of the River Thames. The Corporation's flag was paraded with others at the beginning of the Service and the Dean of St Paul's, the Very Revd David Ison in the Bidding gave thanks to God for 500 years of our two organisations and for 175 years of the Shipwrecked Fishermen and Mariners' Royal Benevolent Society. HRH The Master read the second lesson (John 3. 13-21). The Litany of Intersession for Seafarers led by Trinity House Cadet Owen Evans offered a prayer to those who maintain lighthouses, who serve as pilots and all who work to ensure the safety of seafarers as they begin and end their journeys. There followed prayers for cadets and for former seafarers. Following the Annual Service members of Trinity House were invited to Guildhall for a Reception given by the City of London Corporation.

Reproduced by kind permission of the Dean and Chapter of St Paul's Cathedral.

PORTLAND BILL LIGHTHOUSE VISITOR CENTRE Also in October terms of a lease were agreed with the Crown Estate for the former Lighthouse Keepers' Cottages at Portland Bill Lighthouse which has been popular with visitors for many years. Premises have now been rejuvenated and house a new Visitor Centre themed around the maritime history of Trinity House and its responsibilities for providing aids to navigation, charitable support and education services. These aspects as well as the staff who have made all this possible over five centuries are portrayed. HRH The Master formally opened the Visitor Centre on 12 May .

See pages 4 &5 for an introductory article by Steve Dunning.

Image by Mark Dalton, © Trinity House.

NOVEMBER-DECEMBER

ST OLAVE'S CAROL SERVICE HRH The Master joined us in St Olave's Church, Hart Street on the evening of 3 December for a Carol Service attended by Trinity House staff and friends. The Preacher was the Revd Oliver Ross and lessons were read by The Master, the Deputy Master, Captain Colin Stewart and Captain Richard Woodman. A reception was held in Trinity House the same evening and the Deputy Master presented Her Royal Highness with a brooch based on the Master's flag *(see image above)*. It is hoped that the Carol Service may become an annual event.

DEPUTY MASTER AT THE CENOTAPH

As a further commemoration of our 500th anniversary the Deputy Master laid the Merchant Navy wreath at the Cenotaph in Whitehall on 8 November in the presence of HM The Queen, the Royal Family, representatives of Government and the Services and 9,000 veterans took part in the march past which followed.

© Ministry of Defence.

Image by Les Scriver

***Above:** At the Merchant Navy War Memorial, Tower Hill, 7 September.*

JANUARY 2015

GROUNDING OF *HOEGH OSAKA* It was reported on 3 January that the Singapore-registered car carrier *Hoegh Osaka* was aground on the Bramble Bank in the Solent, in the approaches to the port of Southampton. On board were 24 crew and a local pilot and all were satisfactorily evacuated by Coastguard Rescue Helicopter and RNLI Lifeboats. The vessel was on passage from Southampton to Bremerhaven with a cargo of cars and other heavy machinery. By 5 January THV *Galatea* had laid two Emergency Wreck Buoys in close proximity to the stranded vessel, after a call from the SOSREP*, Hugh Shaw earlier that day and a further request from Southampton Harbour Master. The buoys were later withdrawn by THV *Patricia* after the vessel had self-floated and been towed to a nearby anchorage.

Image by Keith Lock ©

VISIT OF THE MASTER TO SWANSEA... On 29 January HRH The Master visited Trinity House Depot, Swansea. On arrival she was greeted by local dignitaries and the Deputy Master who in turn introduced Simon Millyard, Engineering and Operations Manager and Robert Dale, Technical Services Manager. Her tour proceeded through the Buoy Yard where the various processes were introduced and introductions made to technical staff who briefed on their activities. The Master was able to appreciate the extent of Trinity House operations on the west coast and the logistics requirements fulfilled from Swansea in their support. At the close of the visit Her Royal Highness was invited to join the Depot team photograph, to sign the visitors' book and Martin Price, on behalf of the Service presented her with a framed facsimile of the Master's Flag. *A photographic record of the day's events appears on centre pages 22 and 23.*

Images by Mark Dalton, © Trinity House.

*Secretary of State's Representative for Maritime Salvage and Intervention.

APRIL – MAY

TRINITYTIDE The 501st Trinitytide was celebrated on 28 May when HRH The Princess Royal was re-elected Master of the Corporation for the ensuing year. Captain Ian McNaught was re-elected Deputy Master. Mr Simon Sherrard and Captain Nigel Palmer were re-elected Rental Warden and Nether Warden respectively. At the conclusion of the Court HRH The Master with the Elder and Younger Brethren proceeded to St Olave's Church, Hart Street for the Annual Trinitytide Service where the Preacher was the Revd Canon Dr Pete Wilcox, Dean of Liverpool.

Image by Mark Dalton © Trinity House

... AND TO WALMER AND THV *ALERT* HRH The Master paid her first visit to Trinity Homes Walmer near Deal on 21 April. Here the Executive Chairman introduced Captain Colin Stewart, Elder Brother, Commander Graham Hockley, Secretary to the Corporation, and Mrs Carole Furness, Supervisor of the Homes. There followed a tour during which Her Royal Highness met residents. She was then escorted to Dover Harbour to go afloat in the Rapid Intervention Vessel *Alert* (Commander Ben Akester) and inspect new buoyage at the Varne Bank. *See page 38 for a full report of the day's activities.*

Image by Mark Dalton © Trinity House

By **Steve Dunning,** Retired Trinity House Planning and Performance Manager, Younger Brother.

Portland Bill – *Creation of a new Trinity House Visitor Centre*

EASTER 2015 SAW THE OPENING OF A NEW, INTERESTING, AND informative Lighthouse Visitor Centre at Portland Bill Lighthouse in Dorset. The lighthouse has regularly been visited by over 20,000 people a year so this represents a fantastic opportunity to engage with a large number of visitors, to inform them of the history of Trinity House, of aids to navigation in general and of Portland Bill Lighthouse in particular. In addition we now provide a narrative on all the responsibilities and duties of the Corporation and describe the modern day complement of aids to navigation.

In 2013 representatives of the Crown Estate Commissioners approached Trinity House to advise that the then current lessees of the ground floor of the former lighthouse keepers' cottages at Portland Bill Lighthouse would be surrendering the lease by 31 March 2014. They enquired whether Trinity House was interested in taking on the lease.

The three former keepers' cottages were sold to the Crown Estate in 1996 upon the automation of the lighthouse. The two semi-detached cottages attached to the lighthouse (a further cottage is detached and adjacent to the lighthouse) have subsequently been adapted to create a flat on the first floor and a commercial space on the ground floor. The ground floor has been operated by the Weymouth and Portland Borough Council as a Tourist Information Centre.

Portland Bill Lighthouse is the most visited Trinity House lighthouse open to the public. Visits were simply a tour up the lighthouse. Clearly therefore we had an opportunity to provide an additional facility for the public which would enhance their visit, both from an entertainment and an educational perspective, through the provision of information about Trinity House, the whole range of duties that are the responsibility of the Corporation.

A business case was put together that proved that on through life costs, depending on the nature of the lease, a Lighthouse Visitor Centre could be profitable. However, there was also the question of the initial set-up costs. Coincidentally benefactors approached Trinity House to see whether there was any possibility of creating a lasting and appropriate memorial to their parents who had both sadly died but who had both enjoyed many hours sailing in the waters off the south coast. Positive meetings ensued the result of which was a generous gift to the Corporation. With the opportunity to create an informative, educational and entertaining visitor experience an application was made to, and approved by, Corporate for a grant towards the initial set-up costs of the new centre.

All Images this page by Mark Dalton © Trinity House 2015.

Middle left: *Frontage and entrance to the visitor centre.*

Lower left: *Lens-based or 'dioptric' optics were invented in 1823; optics that were painstakingly constructed in the 19th century are still used widely today! This example is believed to have been installed at Monkstone beacon.*

Main picture: *Portland Bill Lighthouse.*

In the meantime negotiations with representatives of the Crown Estate had been ongoing and eventually reached a satisfactory conclusion. Crown Estate was looking for a "good" tenant who would make positive use of the building. What Trinity House intended for the building has been reflected in the lease in terms of both duration and rent; a good deal for both parties.

We went out to tender with potential design companies. Giving the companies concerned an extensive brief of what we were seeking to develop we asked all of them to come up with innovative ideas. The contract was awarded to Leach Colour, a well known design company who had worked on a number of high profile exhibitions including the *Cutty Sark*. The proposal provided the best balance of design initiative and value for money.

The building itself was in need of some "TLC" with little evidence of much maintenance in recent years. Further negotiations with the Crown Estate developed a programme of works with a good balance of financial contribution. The Trinity House Field Operations Team, primarily through Jason Hollands (electrical) and Andy Johnson (civil) carried out extensive work in a much truncated timescale to see the building in good shape to house the new exhibition. This included extensive repairs to the roof, dealing with internal damp, redecorating both the whole internal area and extensive elements of the external area, the complete rewiring of the space to bring it up to the required standards and the installation of new lighting. A new floor was installed appropriate for heavy public use.

The Leach Colour Team turned up on site on Monday 23 February. Working long hours from 0800 through to nearly 2000 every day the exhibition took shape over a week. As well as interesting and educational information panels Leach has incorporated a number of Trinity House artefacts including a major light vessel model, a lighthouse optic, a buoy lantern and the binnacle from THV *Stella*.

A local company has been appointed as licensee to manage the Centre. Income from the Centre will be divided between Trinity House and the Licensee on an agreed percentage basis. The Trinity House element will cover our costs for maintaining the Centre including our overheads, insurance, utilities, and so forth, as well as the physical maintenance of the site. It will also provide for maintenance and updating of the exhibition materials. There will be no direct costs to the General Lighthouse Fund.

A "soft" opening was held on 25 March for the media and local business and educational interests. As well as letting them know about the new Centre the intention was to generate publicity in advance of the Easter opening.

The Centre opened to the public on Easter Sunday, 29 March.

HRH The Princess Royal, in her capacity as Master of the Corporation, formally opened the new Centre on 12 May 2015.

The new Centre will hopefully prove to be an excellent means of connecting with the public. It will not be a museum although, as stated above, it will heavily feature the histories of the Corporation, of aids to navigation and of Portland Bill Lighthouse. It will also inform about the myriad duties and responsibilities of the Corporation and the ongoing importance of these duties and responsibilities in an increasingly technological world. This has been a very good example of co-operation across all areas of the Corporation developing a Centre that will advise, educate and entertain the public for years to come.

All Images this page by Mark Dalton © Trinity House 2015.

Top: *Display panel illustrating the history of navigation.*

Lower: *On the left is a panel explaining the origin and history of Trinity House; on the far right is a timeline of the history of the Corporation from 1514 to the present day.*

By **Simon Millyard,** Engineering and Operations Manager

Engineering review

THE PRINCIPAL PROJECT OF THE YEAR WAS THE MAJOR CIVIL engineering at Nab as it approached its first century of operation. Works at Nab were the largest capital project in financial terms since the construction of Royal Sovereign Lighthouse in 1971 with a budget of £2.5 million. This is an important physical aid to navigation being the turning point for the majority of vessels entering the Solent including VLCCs for the Fawley refinery and huge cruise liners bound for Southampton as well as naval and civilian traffic, particularly ferries, for Portsmouth.

Nab was an ageing and corroding structure the height of which was reduced, as well as its diameter and then the surface sprayed with a reinforced concrete outer coating to provide a new concrete deck. A new twelve mile light with fog signal, radar beacon (racon) and AIS equipment were installed at the station which has a design life of a further fifty years although in that time the battery and aids to navigation upgrades will be required and will gain from advancing technology.

Important with the project was the need to maintain good environmental responsibility delivered by the principal contractors, Bam Nuttall. In removing the original cladding of the tower the minimum amount went to landfill and a waste management programme ensured recycling or reuse of materials. The station was recommissioned in October.

Replacement of seven DGPS stations has been completed in recent months with the new system now delivering a high integrity GNSS service to the mariner with an accuracy of less than 5 metres at 50 nautical miles from the coast. This was a joint project with the Northern Lighthouse Board and the Commissioners of Irish Lights to cover the entire British Isles and Ireland.

At Eddystone staff from Plymouth University have installed monitoring equipment as part of a wave loading project on the tower to assess the long term structural performance of granite lighthouse towers over many decades.

Modernisation of Bardsey Lighthouse was completed in September. Bardsey, off the Lleŷn peninsula in North Wales, is now a solar station using no fossil fuels to run the aids to navigation while providing an 18 mile light for the northern part of the Irish Sea. Bardsey is a beautiful island and nature reserve on a Site of Special Scientific Interest (SSSI) and in the installation and operation we needed to respect the various constraints that these bring. The rotating optic on a mercury bath was removed and is now displayed in the nearby National Trust's Porth y Swnt visitor centre at Aberdaron. The new light is a coded red LED with main and stand by provision.

In the Channel Islands personnel carried out a complete engine replacement at Hanois after the alternator failed and the engine seized. Helipad paintwork was attended to with hatches painted in different colours to assist the helicopter pilot when landing underslung loads at the station. A comprehensive programme of lighthouse painting has been followed across the lighthouse estate to maintain the integrity of the structures and to provide a good daymark where required. The regular round of technical inspections and routine maintenance visits has been completed, the content of these inspections has been reviewed with a Failure Mode & Effects Analysis (FMEA) to optimise the work carried out and to reduce intrusive maintenance and maintenance induced failures.

At Hurst Point the design of the new power supply system has been drafted, the intention is to reduce the diesel fuel requirement by installing solar panels on the roof of the old acetylene building. This will include high technology intelligent battery chargers to prolong the life of the new gel lead acid batteries and a new engine controller. For the time being the trusty Lister TS3 10KVa diesel engines are being retained. Alternative engines have been considered but the trusty Lister is reliable and simple to maintain and repair with spares readily available. The specification is being drawn up into a formal tender for these works to be undertaken during 2015. Hurst Point is also an SSSI and on a very low lying area of beach on the Western Solent.

With regard to beacons MV *Mair* was engaged in work at Woolpack and Crow Rock beacons in the Isles of Scilly. These two beacons were renewed with new support legs, lights and daymarks. All the steel fabrication was carried out at Swansea Buoy Yard and installed by Trinity House staff. Next year Chwislen and Mixon beacons (on the Lleŷn peninsula and near Selsey respectively) will be refurbished in a similar manner.

The spring of 2015 saw the commencement of the programme for the modernisation and solarisation of Longstone Lighthouse off the Northumbrian coast and as a preliminary a lightvessel bearing the name 'LONGSTONE' has now been established in the vicinity while the station's aids to navigation are temporarily discontinued. It is anticipated that the lightvessel will be on station until November this year. This follows a comprehensive planning, design and procurement programme to enable these works to begin. Longstone is the last lighthouse running on 24 hour diesel engines and these will be reduced to a few hours per year for topping up the batteries in the winter months once the modernisation is complete.

For navigation buoys, dynamic analysis software by Orcaflex was investigated and studied and work here progresses. This is to study the heel angles of buoys in waves to assess how the lights perform at sea and how they are observed by the mariner. The lightweight aluminium superstructures continued to be trialled at six stations and inspections have shown that they are performing as expected. Once completed, these Type 2 buoys will support a racon, AIS, GPS position monitoring, a seven mile light and control and monitoring will be from the Planning Centre at Harwich. Storms of early 2014 saw some buoy topmarks swept away, the design was reviewed and a modified securing arrangement implemented that is proving successful thus far.

Photo: Ambrose Greenway © 2015

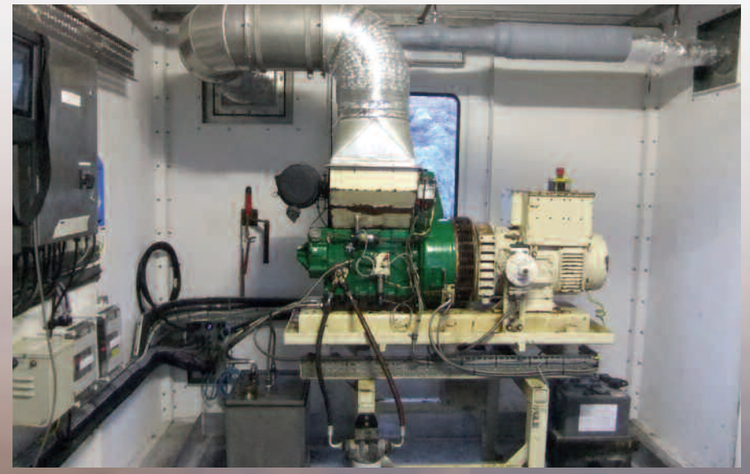
Above and main picture: *The principal project of the year was the major civil engineering at Nab as it approached its first century of operation. Works at Nab were the largest capital project in financial terms since the construction of Royal Sovereign lighthouse in 1971 with a budget of £2.5 million.*

Main photo of the Nab Tower by Steve Keddie ©2015

Above, middle: *Staff from Plymouth University have installed monitoring equipment as part of a wave loading project on the tower at Eddystone to assess the long term structural performance of granite lighthouse towers* *Photo: © Roger Barker.*

Top right: *No 10 Lightvessel built in 1951 by Philip & Co of Dartmouth has been prepared for establishment at the Longstone station during the programme for the modernisation and solarisation of the lighthouse.* *Photo ©Simon Millyard.*

Above: *West Constable Type 2 buoy with radar beacon (racon) and GPS position monitoring. This photograph shows the new lightweight aluminium superstructure on trial. Such superstructures continued to be trialed at five other buoy stations and inspections have shown that they are performing as expected.*



Above*: The Lister TS3 engine as installed at Skerries lighthouse. A similar power unit operates at Hurst lighthouse.*

Middle left: *Modernisation of Bardsey lighthouse was completed in September. This light off the Lleŷn peninsula in North Wales, is now a solar station using no fossil fuels to run the aids to navigation while providing an 18 mile light for the northern part of the Irish Sea.*

Left: *In the Channel Islands personnel carried out a complete engine replacement at Hanois after the alternator failed and the engine seized.* *Photo: © Roger Barker.*

Main picture: *At Hurst Point the design of the new power supply system has been drafted, the intention is to reduce the diesel fuel requirement by installing solar panels on the roof of the old acetylene building.*

By **Link Powell,** *Assistant R&D Engineer R&RNAV.*

Demonstration of a field light measurement

A LIGHT MEASUREMENT IS AN ESSENTIAL QUALITY CONTROL PROCEDURE used to determine the luminous intensity, rhythmic character and vertical beam profile of a light. *In situ* or field lighthouse light measurements are carried out by the Research and Radionavigation (R&RNAV) Directorate of the General Lighthouse Authorities of the UK and Ireland to test new light sources when re-engineering a lighthouse or to audit existing lights.

A field measurement is naturally more difficult than a lab measurement as the available methods to manipulate the light are limited. The measurement procedure also requires the use of custom made equipment as well as co-ordination between personnel both at the lighthouse and at a measurement site some distance away. However, it would be extremely impractical to dismantle and transport the optical equipment to a lab. Also, a field measurement yields results with much lower uncertainty than pure calculation of the light's performance. Therefore, a field measurement is the recommended option.

A demonstration field light measurement was carried out on the Torre de Hércules lighthouse, in A Coruña, Spain, at the 2014 IALA conference to share the techniques used by R&RNAV and also to promote the benefits of field measurements among lighthouse authorities around the world.

The R&RNAV Field Measurement Procedure

The nominal range of a light is determined by its effective luminous intensity. One method to determine the luminous intensity uses the inverse square law, where the light is measured using a luxmeter and the result multiplied by the square of the measurement distance. However, this method does not take into account the effects of the atmosphere. The atmospheric effects not only reduce the accuracy of the measurement, but they can also vary considerably, producing different results for each measurement of the same light. This method is only suitable for short distances, ideally much less than one hundred metres.

The distance from the lighthouse to a suitable measurement location is often much greater than one hundred metres and so R&RNAV use a method that accounts for atmospheric effects; the substitution method, where the light to be measured is scaled against a reference light (a light source of known intensity). The reference light, temporarily installed at the lighthouse, is measured with a luxmeter and the lux value recorded. The reference lamp is then turned off and a measurement of the lighthouse light is recorded. If the recorded values were five lux for the reference light and ten lux for the lighthouse light, then it is known the lighthouse light is twice the intensity of the reference light. If the reference light is known to have an intensity of one candela then the measured intensity of the lighthouse light is

➥ *Continued on page 10.*

Torre de Hércules Lighthouse, Spain.

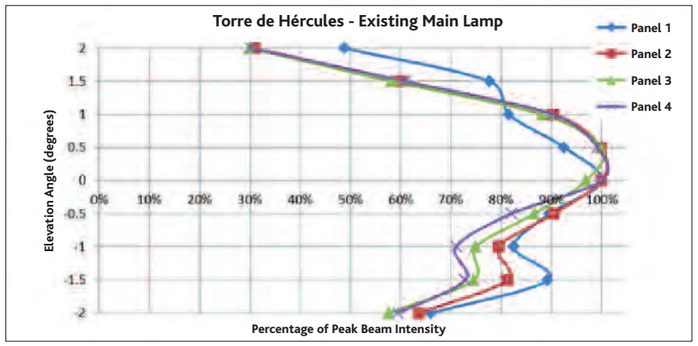
Above: *Luxmeter at the measurement site.*

Temporary installation of the trialled R&RNAV light source.

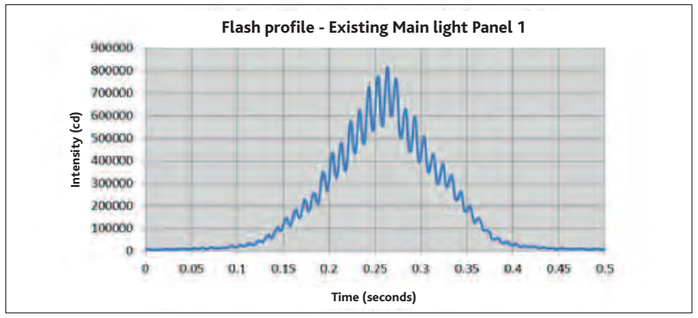
Demonstration of a light field measurement

➥ *Continued from page 9.* two candelas. Because both lights are measured over the same path in quick succession, the effects of the atmosphere on each measurement are the same. When the division is performed to find the ratio between lux measurements, the atmospheric effects are cancelled out. A custom built measurement unit and a laptop running custom-made software are used to record and process the luxmeter output.

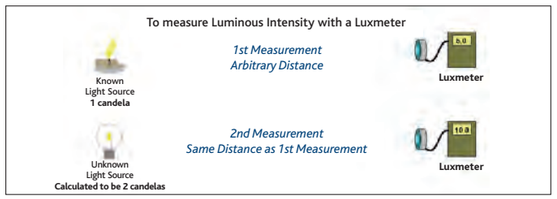
During a field measurement the vertical beam profile is also measured to determine whether the beam is pointing in the correct direction (i.e. to the horizon) and to enable calculation of the peak beam intensity if the measurement site is not in line with the beam. When measuring the vertical beam profile in the R&RNAV labs, the optic is placed on a motorised table which tilts up and down while the luxmeter output is recorded. Clearly, this method cannot be used in the field. During a field measurement, a set of prisms are used to refract the beam up and down. Two types of prisms are used and by using them in various combinations, the beam can be refracted through a range of plus/minus two degrees in half degree increments. At each increment a measurement is taken and, even if the measurement site is not situated in the beam peak, the peak will be directed towards the measurement site at some point. The prisms do not allow all the light reaching them to pass through, but the transmissivity of each prism is known and used to correct the readings. The prisms are supported in a frame and blanking curtains hung around the frame to ensure that only light passing through the prisms is measured. When all measurements for the vertical beam have been taken, the prisms, prism frame and curtains are removed and the nominal performance of the light is measured.



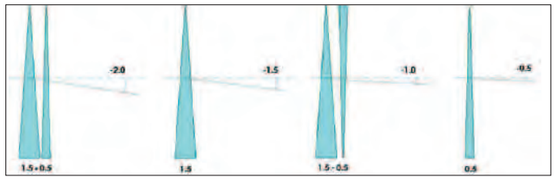
Above: *Vertical beam profile. Due to the wide beam no corrections were necessary to compensate for the low elevation of the measurement site.*



Above: *Torre de Hércules flash profile.*

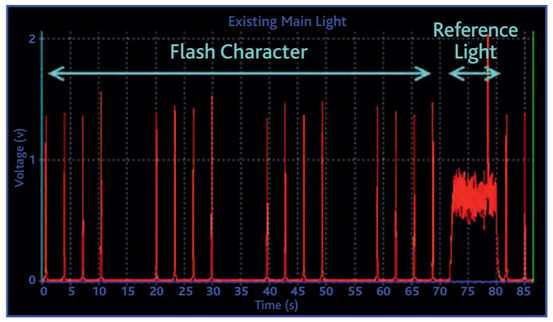


Above: *Measuring intensity with a Luxmeter using the substitution method.*



Above: *Prism combinations used to measure the vertical beam profile.*

Below: *Annotated recording screen from the custom made light measurement software.*



The Torre de Hércules measurement

The Torre de Hércules lighthouse has a rotating fourth order optic with four catadioptric lens panels. The light source is a four hundred watt metal halide lamp. The chosen measurement site for the Torre de Hércules was located four and a half kilometres east, across the bay. The elevation of the measurement site was lower than the light but, since the vertical beam profile was measured this was not a problem.

The reference light used during the measurement of Torre de Hércules lighthouse was calibrated at 416,800 candelas. From the recording screen it can be seen that the peak intensity of the flashes is approximately twice the intensity of the reference light. The recorded flash profiles were then further processed to calculate the effective intensity of each flash. The resulting effective intensities corresponded to a nominal range of twenty-two nautical miles. This was two nautical miles less than the published figure, demonstrating the importance of field measurements over calculations. A 45 watt R&RNAV LED light source was also trialled giving a measured nominal range of 17 nautical miles.

Torre de Hércules optic.

Reference light on pan and tilt head at the lighthouse.

By **Dr Alwyn Williams,** ACCSEAS Project Manager.

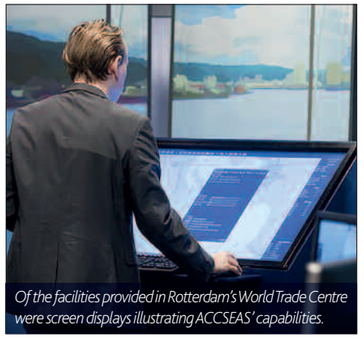
The future of navigation is coming!

THE NORTH SEA REGION IS HOME TO SOME OF THE BUSIEST SHIPPING lanes in the world, yet the demand in this stretch of water is ever increasing, leading to the navigable space becoming smaller. This is a popular region not only for shipping, but also for energy extraction – both wind and oil – and is an area where many wildlife associations are looking to protect natural environments. These factors, in combination with a rise in larger vessels in these waters and a higher volume of traffic, lead to a real safety risk in the area, which could have an impact on shipping efficiency moving forward.

ACCSEAS, led by the General Lighthouse Authorities, is a three year project part-funded by the European Union's Interreg IVb programme, which aims to improve maritime access to the North Sea Region by minimising navigational risk. ACCSEAS believes that e-Navigation will eventually make the mariner's job easier by taking information from several different systems and platforms and displaying it in an easy to use and integrated way.

The group of eleven organisations from six countries has pooled knowledge and resources to develop a portfolio of prototype services and solutions to make navigating the North Sea safer, simpler and more efficient. These technologies have been developed by the project members and trialled in a number of simulations and test environments to date.

October 2014 marked a new milestone for the ACCSEAS project when it ran its first integrated demonstration on board a working ship in the area. ACCSEAS prototype equipment was installed on the bridge of P&O's *Pride of Hull* and at VTS Humber to demonstrate and trial ACCSEAS solutions with the operators at both sites. During the voyage, the crew tested a number of prototype technologies developed by the ACCSEAS project, including the No-Go Area Service, Resilient Positioning Navigation & Timing (PNT), Tactical Route Exchange and Maritime Safety Information/Notices to Mariners Services (MSI/NM).



Of the facilities provided in Rotterdam's World Trade Centre were screen displays illustrating ACCSEAS' capabilities.

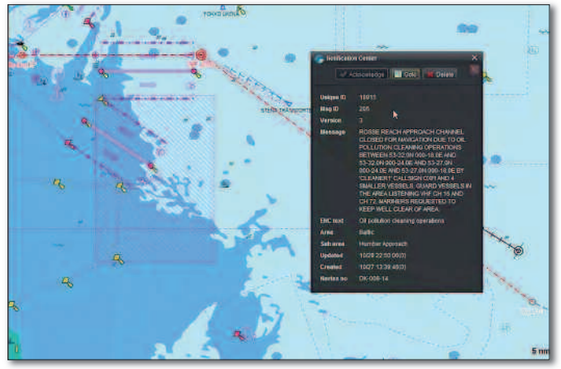
Above: *Kees Polderman of The Netherlands was chairman of the final ACCSEAS annual conference. In the past year he was created an Honorary Personal Member of IALA.*

During the Humber testing exercise, Chief Officer Loonstra proceeded with his standard procedure, calling VTS Humber from the bridge of his ship to provide standard information on location, number of passengers and so forth. During this call to the VTS centre, he was alerted to the fact that there had been an oil spill in the area and that a new route would be provided by the VTS manager. On return to the navigation system, safety information of the incident could be seen clearly on screen, along with a suggested alternative route, allowing plenty of time to re-plan his navigation.

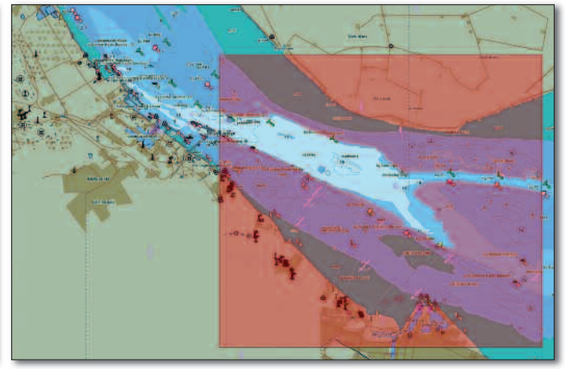
The process was quick and easy to navigate. *"Although there are systems in place to alert mariners of live safety issues in the area, these are often not as responsive as we would like, they take time to use and require time to plot information against maps,"* explained Loonstra. *"This software brings it all together in an easy, usable way for mariners and marine pilots."*

These technologies have been developed to enhance the navigation experience, but they are all underpinned by a need to know the whereabouts of the ship in the first place.

While GPS is the most common source of position navigation and timing (PNT) information, it is open to vulnerabilities which could lead to outages. Issues of GPS jamming are becoming more frequent, for example North Korea has staged a number of GPS jamming attacks on South Korea in recent months to cause malicious impact to their infrastructure. There are also natural causes affecting service – for example the sun can knock satellite systems offline too. ACCSEAS is developing a number of supplementary sources of positioning collected into a bespoke receiver. This receiver detects a GPS failure and switches seamlessly into the most accurate alternative source of positioning. eLoran, a low-frequency terrestrial navigation system, was the back-up to GPS used in this demonstration.



Above: *An example of a busy but clear snapshot of data available to today's mariner.*



Above: *An example of No Go areas are clearly shown in an ECDIS display.*

Loonstra was impressed, stating: '*The transition from GPS to eLoran was seamless, with just a small message on screen alerting you to the changeover of input. I think this would cause less panic on the bridge as it meant there were no alarms and you do not lose your positioning on the map.*' The results of this testing show a successful outcome for the ACCSEAS project, which showcased its results at its final annual conference in Rotterdam's World Trade Centre, from 17 to 19 February this year. This highly successful event was attended by 127 delegates from many organisations throughout Europe and United States.

Above: *The Maritime Cloud is a technical infrastructure to support seamless information transfer in e-navigation .*

POSTSCRIPT As the conference marked the close of the current ACCSEAS project, the event also looked at who will take these solutions forward and how they will be made available to the industry. IALA will be setting up a working group to further develop the Maritime Cloud as the *de facto* worldwide e-Navigation framework. This will ensure the legacy of ACCSEAS lives on, either in the fundamental implementation of e-Navigation and/or the services that it developed to help mariners do their job even more efficiently and safely. For further information about ACCSEAS and to learn more of this year's Navigating the North Sea Region conference readers are invited to visit **www.accseas.eu** which will be available into 2016.

More than one hundred delegates from many organisations throughout Europe and United States attended the final ACCSEAS annual conference held in Rotterdam.

More than one hundred delegates from many organisations throughout Europe and United States attended the final ACCSEAS annual conference held in Rotterdam.

By **T L Arculus,** BSc MSc LLB (Hons) MRICS Legal Advisor, Tower Hill.

SARK LIGHTHOUSE *and the Point Robert purchase*

WE CELEBRATED THE CENTENARY OF SARK LIGHTHOUSE IN 2012, as previously reported in *FLASH*. The events of over a century ago which led to the successful purchase of the land on which the lighthouse stands were remarkable due to the unusual system of land tenure on Sark which forbade the subdivision of land without royal permission.

Sark was the last bastion of feudalism in the western world until the reform of the island's constitution in 2008 . On 10 December 2008 for the first time all adult islanders had the right to vote for their chosen conseillers in the island's government, the Chief Pleas. The previous constitutional arrangements dated back to the reign of Elizabeth I (1558-1603) who, fearing for the security of this peripheral part of her Realm, made provision for the island to be colonised by her loyal subjects.

Elizabeth's fears were well founded for during the reign of her half-brother Edward VI (1547-1553) the island had been seized by France. Being clearly visible from the Normandy coast, Sark proved a tantalising prospect. In 1549 a fleet of eleven French ships and 400 men took quiet possession of the uninhabited island. The land at that time was wild and proved incapable of supplying the needs of such a hoard. The prospect of imminent starvation caused some of them to desert and others to sail away with their leader, Captain Bruel, to hector the islands of Guernsey and Jersey, leaving only a depleted and weakened force. The occupation lasted five or six years until the French were extirpated by the Flemish. There are two versions of the story of the Flemish raid. One version of the tale says that the raiders hid most of their soldiers below deck and sailed brazenly to the coast of Sark. When challenged by the occupying forces, they requested permission to land an unarmed party on the island in order to bury a dead comrade in consecrated ground. The occupiers humanely agreed to this request after taking the precautions of searching the coffin-bearers for concealed weapons and stationing their own men aboard the Flemish vessel – a fatal mistake.

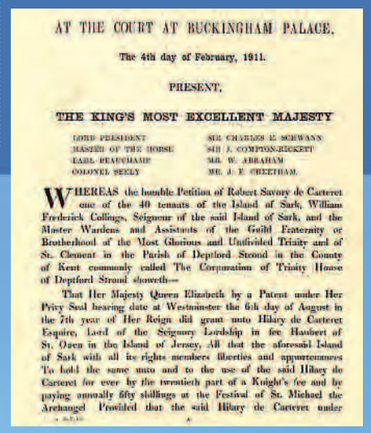
The raiders proceeded to the island chapel whereupon they locked the door and opened the coffin which contained not a corpse but weapons. Fully armed they vanquished the French garrison whose numbers had been reduced due to their fellows sent aboard the Flemish ship. Those men were also overpowered by the Flemings hiding below deck and the rout was complete . The alternative version of story goes that the Flemish with the help of pilots from Guernsey[1] landed nocturnally on Sark and ambushed the sleeping Gallic lookouts[2]. Whatever the truth, the Flemings were at that time subjects of Philip of Spain who was also the husband of the reigning English monarch Mary I (1553-1558). They presented the captured isle to the English Queen who is said to have been uninterested and ungrateful which caused the disgruntled Flemings to abandon the island.

Once again the French could not resist the attraction of Sark and an opportunistic Norman lord, the Seigneur of Glatney, began to colonise it at his own expense. This scheme failed when war broke out between England and France and Glatney's pioneers withdrew to the Continent[3].

Bloody Mary's short and sanguinary reign ended with her death in 1558. Her half-sister Elizabeth I succeeded her. On 6 August 1565 Elizabeth issued letters patent to a nobleman from the parish of St. Ouen in Jersey named Hilary (or Hellier) de Carteret. These letters patent appointed him the first Seigneur of Sark and allowed him to hold the island on behalf of his Queen in return for a quit rent and on condition that within two years he would settle the island with forty loyal tenants. Elizabeth also decreed that land on the island could not be sold without a licence from the sovereign.
De Carteret proved to be a good choice for he wasted no time and overcame considerable difficulties in pursuit of his goal of founding a colony consisting of forty tenements known as the quarantaine, meaning group of forty. Elizabeth's successor, James I (1603-1625), issued further decrees in 1612 that none of the forty tenements should be subdivided and that they should only pass in their entirety to the eldest son of the tenant and then to his son and so on. James also decreed that no one born out of Sark should be suffered to live there unless they took an Oath of Allegiance and obtained consent to remain from the Seigneur within six weeks of their arrival. So when Trinity House decided to build the lighthouse at Point Robert on the north-eastern flank of Sark the process of purchasing the land had to follow an unusual route. A petition to grant a licence to allow the sale to proceed had to be presented to King George V (1910-1936) jointly by the then tenant of that part of Sark, Robert Savory de Carteret, together with the incumbent Seigneur, William Frederick Collings, and the Corporation of Trinity House. The petition was considered by the Privy Council and fortunately, by Orders in Council dated 4 February 1911, His Majesty was pleased to give permission for the sale to proceed. The purchase price was £100 and the sale area included a site measuring approximately 200 feet by 120 feet on which the lighthouse now stands and also an adjoining area of rocky land 95 feet wide sloping steeply down to the swn in the local patois as a côtil.

1 *(The History of Guernsey and its Bailiwick: With Occasional Notices of Jersey by Ferdinand Brock Tupper (Guernsey) 1854).*
2 *Chroniques de Jersey by S Syvret (Guernsey) 1832).*
3 *(Tupper ibid).*

> *"Sark, fairer than aught in the world that the lit skies cover, Laughs inly behind her cliffs, and the seafarers mark. As a shrine where the sunlight serves, though the blown clouds hover, Sark."*
>
> *AC Swinburne.*



AT THE COURT AT BUCKINGHAM PALACE.

The 4th day of February, 1911.

PRESENT,

THE KING'S MOST EXCELLENT MAJESTY

LORD PRESIDENT	SIR CHARLES E SCHWANN
MASTER OF THE HORSE	MR J. COMPTON-RICKETT
EARL BEAUCHAMP	MR W. ABRAHAM
COLONEL SEELY	MR J. E CHEETHAM.

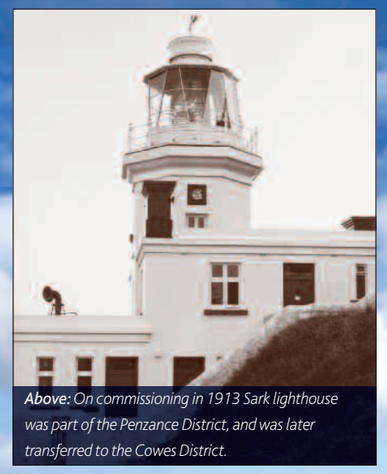
WHEREAS the humble Petition of Robert Savory de Carteret one of the 40 tenants of the Island of Sark, William Frederick Collings, Seigneur of the said Island of Sark, and the Master Wardens and Assistants of the Guild Fraternity or Brotherhood of the Most Glorious and Undivided Trinity and of St. Clement in the Parish of Deptford Strond in the County of Kent commonly called The Corporation of Trinity House of Deptford Strond showeth—

That Her Majesty Queen Elizabeth by a Patent under Her Privy Seal bearing date at Westminster the 6th day of August in the 7th year of Her Reign did grant unto Hilary de Carteret Esquire, Lord of the Seigneury Lordship in fee Haubert of St. Ouen in the Island of Jersey, All that the aforesaid Island of Sark with all its rights members liberties and appurtenances To hold the same unto and to the use of the said Hilary de Carteret for ever by the twentieth part of a Knight's fee and by paying annually fifty shillings at the Festival of St. Michael the Archangel Provided that the said Hilary de Carteret under

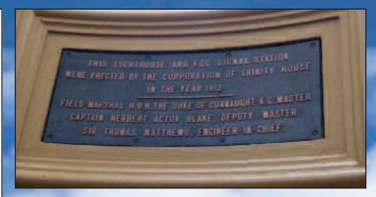
Above: *Title page of the Privy Council Order of 1911.*

Above: *An extract from a 1911 map showing land to be conveyed to Trinity House to enable the lighthouse to be constructed.*

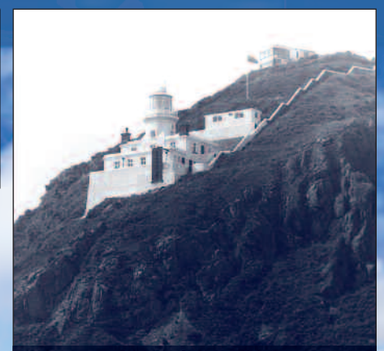
Main Picture: *Sark's Point Robert from seaward showing the lighthouse and côtil.*



Above: *On commissioning in 1913 Sark lighthouse was part of the Penzance District, and was later transferred to the Cowes District.*



Above: *Plaque commemorating the construction of the lighthouse in 1812.*



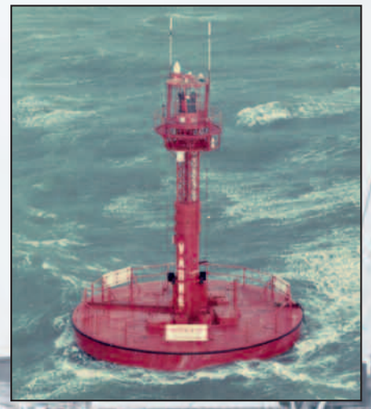
Keepers were withdrawn from Sark lighthouse on 21 July 1940 and staff next visited on 24 May 1945 when it was found that mines and booby-traps abounded round and close to the station.

Under the direction of Sir John Bowen, Engineer-in-Chief from 1924 to 1951, the station was repaired following wartime damage.

By **Adrian Wilkins,** CEng FIMechE FRIN

LANBY Buoys

THE LANBY BUOY WAS DEVELOPED IN THE UNITED STATES IN THE mid-1960s following the successful development of similar ocean data buoys. Referred to as a LNB (Large Navigation Buoy) by the US Coast Guard, the buoys were to replace their fleet of manned lightvessels. These were similar to ours. They had powerful electric main lights powered by diesel generators, compressed air driven fog signals and radio beacons. However, the American vessels also had propulsion machinery and overall costs were becoming prohibitive.



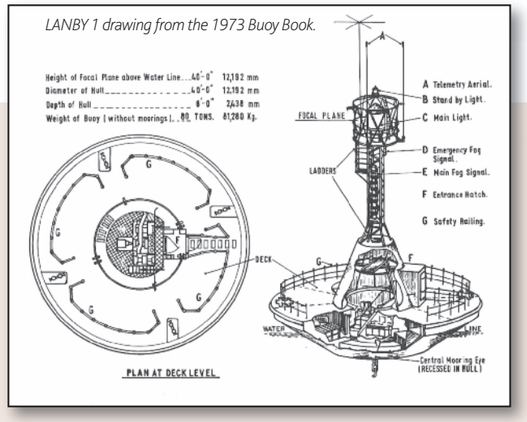
Top: *A LANBY under tow in gale conditions shortly before the tow wire parted, October 1977.*

Below: *200 Series LANBY on the Varne Station.*

The prototype LNB was trialled on the Sandy Hook station in 1967. Following these trials seven were built by the Convair Division of General Dynamics starting in 1970, followed by five more from 1974. These American buoys had a 12m diameter hull, a little over 2m deep, with a 12m tubular tower. The main light was an array of discharge tubes installed on the open tower top platform. This provided a very bright (14 mile range) light but with a very short flash.

The flash was so short that the buoy's position was often difficult to see. A second shorter range conventional light was added to provide a visual reference to establish the buoy's position. The fog signal was a 500Hz electric unit and some buoys also had a radio beacon. By the mid-1970s a racon was added. Meteorological equipment was also carried and the buoy's position monitored using LoranC. Power was provided by two single cylinder Lister, air cooled, diesel generators. One engine ran continuously the other started automatically if the first failed. The hull was sub-divided into a control room containing the automatic control and radio equipment, a battery compartment, fuel tanks, buoyancy compartments and ballast tanks.

The last two Trinity House manned lightvessels dated from 1963 and 1967. American developments in replacing manned vessels with automatic buoys were being closely followed here and a contract was placed in 1968 with Hawker Siddeley to develop a similar buoy. Known as LANBY (Large automatic navigation buoy) 1 (later to be 101) it was built in the Royal Albert Dock (London) and launched by Captain Sir George Barnard, Deputy Master, on 2 December



LANBY 1 drawing from the 1973 Buoy Book.

1969. This buoy was of similar overall size to the American buoys but with a deeper hull. Three water cooled diesel generators were installed in a single central engine room that had large electric cooling fans. A rotating optic with sealed beam lamps was housed in a small lantern on the tower top. Trials took place off Harwich and at the Shambles station where many of the on-board systems, both power and aids to navigation, suffered repeated failures.

While LANBY 101 was being trialled a decision was made to purchase modified versions of the American buoys. The first two, starting in 1970, were built by Bristol Channel Ship Repairers in Cardiff and the remainder by Camper & Nicholson at Southampton, under licence from General Dynamics. They had a more powerful discharge tube light and larger fog signal; these required twin cylinder Lister diesel generators to provide extra power. The first buoys were fitted with three mooring eyes to lay to a three leg mooring i.e. three equal legs of chain, each with an anchor. This was considered to be more secure than a single leg mooring. The crews in manned lightvessels shortened or lengthened the mooring in response to changing weather and sea conditions and it was considered that on exposed stations a single fixed length of chain would not be reliable. Three leg moorings proved very difficult to lay and recover and often became foul due to rotation of the buoy. Such moorings were soon discontinued and the buoys converted to a single central mooring eye which connected to a single length of chain terminating in a sinker and an anchor. Towing of LANBYs proved very difficult in anything but calm conditions. The 'stern' ballast compartment was filled with water to provide a 'bow up' attitude but the front of the buoy would tend to 'dig in' to waves resulting in broken tow lines. Another authority had a buoy capsize while under tow. Buoys were controlled and monitored via a VHF radio link that had a limited range, hence they were monitored from the nearest manned mainland lighthouse or Trinity House depot. Radio and control equipment were not as stable as modern systems and much time was spent tracing and rectifying problems. Very high voltage associated with the discharge tube light caused failures in the supply cable up the tower and in the light housings at the tower top. A problem peculiar to the engine installation resulted in spectacular fires in the air cooling system. The system was unusual in that the engine exhaust mixed with the cooling air in the duct that passed from the engine room and up the tower. This particular model of engine was prone to leaking small amounts of oil into the cooling air and fires resulted. Tower top motion was vividly demonstrated when planning a modification to the buoys. We were sitting on the small platform on the tower top of a buoy moored in Harwich harbour. The motion resulting from the wash of a passing tug was sufficient to catapult a pencil, from behind my colleague's ear, to clear the deck of the buoy and land in the water. Continuing equipment failures on the buoys resulted in a project to update the on board systems and convert them to the 300 series. Modifications included a new lubricating system for the engines, new engine cooling and exhaust systems, an enclosed lantern house to provide some shelter at the top of the tower and a rotating optic that had been developed by Trinity House during the 101 project. Electrical and radio systems were also updated and the buoys' reliability on station was significantly improved. However, problems associated with personnel carrying out the necessary maintenance work on board the violently moving buoys were never solved. It became clear that the LANBY would not provide the anticipated replacement for the manned lightvessel and two light floats were purchased from AGA Ltd. Delivered in 1980 these 21m vessels operated automatically with a gas light and primary battery-powered fog signal but had no remote control or monitoring facilities. These AGA light floats were the first large floating aids to be converted to solar power and one replaced the last Trinity House LANBY on the Varne station in 1995. The Irish service continued to operate two LANBYs for some years after Trinity House. The French service, who had developed their own version of the LANBY, operated theirs marking the Ushant traffic separation scheme until 2012. The French buoys had been re-engineered several times with the final version being solar powered.

Captain Simon Robinson has the last word: *'One of the happiest periods of my life was in the mid to late 1990s, watching the decommissioned LANBYs being dismantled by gas axe in Swansea, safe in the knowledge that I would never have to be violently ill all over the dreadful things again.'*

LANBY 101 nearing completion in the Royal Albert Dock, London. There is a short film of the buoy's launch in the Pathé News on-line archive to be found at www.britishpathe.com

The picture shows one of the first LNBs replacing the San Francisco lightvessel in 1971. These buoys had a planned maintenance visit every three months. They were to have a dockside re-fit every two years and major dry docking every four years.

By **Paul Ridgway**

Churchill *and Trinity House 1913–1965*

The Prime Minister, Winston Churchill, lit a cigar during the proceedings and incurred a fine of one shilling for so doing.

VIEWERS OF A CERTAIN AGE MAY RECALL THE TV NEWS PICTURES of 30 January 1965 of the State Funeral of Sir Winston Churchill. Of particular interest to many was the funeral flotilla steaming from Tower Pier upstream to Waterloo at the same time as the dockside cranes on the South Bank dipped in salute and the 16 RAF Lightnings flew overhead. In this assembly of small craft the lead vessel was *Nore* of the Port of London Authority and the Elder Brethren were embarked in the second vessel, THPV *Landward* of the London Pilotage District. In a film archive[1] for a few seconds you can briefly see the Earl Marshal, His Grace the Duke of Norfolk, also an Elder Brother, marching in slow time ahead of the procession down to Tower Pier and the vessels gathered there. A re-enactment of this flotilla took place on 30 January this year as part of the 50th anniversary commemoration and included *TH No1 Boat* with Elder Brethren and the Secretary embarked.

Winston Churchill, as First Lord of the Admiralty, was sworn in as an Elder Brother of Trinity House in 1913 and held the title until his death. He joined a long line of statesmen of the early 20th century who were elected as Elder Brethren: Arthur Balfour, Sir Henry Campbell-Bannerman, Henry Asquith and Ramsay MacDonald.

It is not known how frequently he attended the Corporation's events but certainly he attended lunches and dinners in the House and a group portrait on the ground floor shows him at a dinner in his honour held to mark his fifty years as an Elder Brother in 1963. There is no doubt that as a Former Naval Person he would have understood perfectly the workings of the Corporation and of the Lighthouse and Pilotage Services and would have been kept abreast of activities by means of Court Minutes and other correspondence.

Indeed he was proud of the uniform and a fine portrait of him wearing the ceremonial dress of an Elder Brother, complete with cocked hat, by Sir Oswald Birley and painted in 1951 hangs in the Library at Trinity House. Churchill signed a photograph of the painting for each of the Elder Brethren.

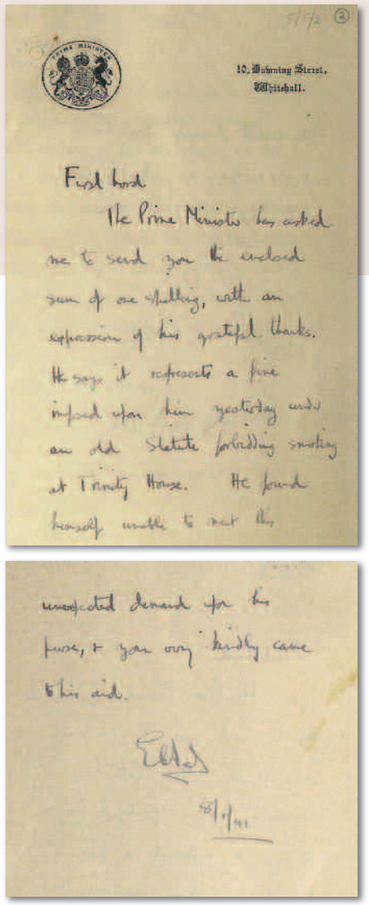
We learn from *Trinity House: Its unique record from the days of Henry VIII* by Commander Hilary P Mead that the wearing of Trinity House uniform by Honorary Elder Brethren was not at all uncommon and the author adds that Winston Churchill *'seems to have rejoiced in it and been very proud of it'*. Indeed, he recalls Churchill being approached by a French naval officer, possibly at the Versailles Peace Conference of 1919, asking about his uniform only to be informed that it represented *'Le Frère Aîné de la Trinité'* to which the enquirer replied: *'Mon Dieu, quelle influence!'*

Certainly Churchill's time at Trinity House had witnessed great events with world war, twice, and post-war restoration, twice. Within a few days of the destruction of Trinity House on 7 January 1941 a Special Court was convened and at which the Hon A V Alexander, First Lord of the Admiralty and later Lord Alexander of Hillsborough, was sworn in as an Honorary Elder Brother. According to Andrew Adams and Richard Woodman in *Light Upon the Waters* the Prime Minister, Winston Churchill, lit a cigar during the proceedings and incurred a fine of one shilling for so doing. It was pointed out to him that he had disobeyed an ancient ruling forbidding the use of tobacco at the Court. The great man did not have a shilling on him and Alexander came to his aid and paid the fine. A few days later Churchill had a shilling sent from No 10 to the First Lord in reimbursement.

Another Trinity House relic of Churchill is the news photograph taken in HMS *Prince of Wales* on 9 August 1941 at anchor in Placentia Bay, Newfoundland, and at which the Atlantic Charter was drafted, agreed and signed by the Prime Minister and President Franklin D Roosevelt. In this picture Churchill is wearing a form of Trinity House rig. Roosevelt had earlier arrived in USS *Augusta*. From this momentous event came the understanding that Britain and America were pursuing the same ideal goals of war. A painting of the event was eventually prepared and in time was given to the Corporation by Churchill's widow, Baroness Spencer-Churchill.

Churchill's name was perpetuated for a quarter of a century after his death for within our fleet of service craft that named W*inston Churchill,* was built by J Samuel White in Cowes, Isle of Wight, and commissioned in 1964. She was a sturdy workhorse of the Steam Vessel Service and carried out a multitude of tasks, as her sister ships had done for years: lightvessel towage, buoy servicing, lighthouse fuelling, crew reliefs, and wreck marking. She was sold out of service in 1989. We are proud of our Trinity House links and the many visitors to Tower Hill never cease to hear the story of the Great Man and our organisation.

Sir Winston in the uniform of an Elder Brother. This painting by Sir Oswald Birley hangs in the Library at Trinity House. Anecdotage has it that Captain Clifford St George Glasson, Elder Brother, from time to time sat for Birley in Churchill's place.



10, Downing Street,
Whitehall.

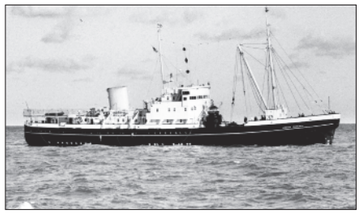
First Lord

The Prime Minister has asked me to send you the enclosed sum of one shilling, with an expression of his grateful thanks. He says it represents a fine imposed upon him yesterday under an old Statute forbidding smoking at Trinity House. He found himself unable to meet this unexpected demand for the purse, & you very kindly came to his aid.

8/1/41

Above: Facsimile of a letter dated 8 January 1941 from Downing Street to Mr A V Alexander, the First Lord of the Admiralty returning the one shilling mulct incurred by Churchill for smoking at the Court.

Above: Recording Churchill's celebrated meeting with Roosevelt in August 1941, this painting hangs in the Reading Room at Trinity House and was given to the Corporation by Sir Winston's widow, Baroness Spencer-Churchill in 1965.



Top: *In the funeral flotilla re-enactment on 30 January 2015* TH No 1 Boat *took part. Embarked were: Bowman, Bob Merritt and in the stern (left to right) Jon Kidd, 1st Officer; Simon Wakelin, Bosun, and Haydn Clarke, 2nd Officer. The Elder Brethren, centre are Commander Graham Hockley, Commodore Jim Scorer and Captain Ian McNaught.* *Photo: Hazel Gibb.*

Above: *THV* Winston Churchill, *a diesel-electric lighthouse tender of the Mermaid class, in service from 1964 to1989.*
Photo: ©Ambrose Greenway.

[1] youtube/RlFY8cqJbAI

By **Paul Ridgway**

Ballast *and all it entailed*

Provider of a major charitable income for the Corporation

TO QUOTE ADMIRAL W H SMYTH IN HIS SAILOR'S WORD BOOK: *A Dictionary of Nautical Terms,* first published in 1867, Ballast by definition is given as: *'A certain portion of stone, pig-iron, gravel, water or such like materials, deposited in a ship's hold when she either has no cargo or too little to bring her sufficiently low in the water. It is used to counterbalance the effect of the wind upon the masts, and give the ship a proper stability, that she may be enabled to carry sail without danger of overturning. The art of ballasting consists in placing the centre of gravity, so as neither to be too high nor too low, too far forward nor too far aft, and that the surface of the water may nearly rise to the extreme breadth amidships, and thus the ship will be enabled to carry a good sail, incline but little, and ply well to windward…'*

The gathering of spoil from the river bed was a foul task undertaken by men using leather 'cups' on poles, as shown in the accompanying illustrations, to scavenge the spoil and then stow it in the ballast dredger. It was hard but essential work reducing the shoals in the Thames and thus ensuring a degree of navigation safety at the same time as providing ballast for vessels trading in the port of London. From the earliest days until 1853 the ballast, when laid in a barge or lighter alongside the ship to be supplied, was heaved on board by men who were hired and paid by various waterside contractors, and subjected to great hardships, not only from the greed of their employers, but from a demoralising system of payment through publicans and local harpies. To paraphrase Sir Frederick Arrow, Deputy Master 1865-75: These evils were altogether removed by the establishment of a Heavers' Office under the control of Trinity House, where men could attend for employment, and where their wages could be paid with regularity and free from extortionate deductions. Administration of the ballast heavers was brought under control of the Corporation in 1853 at the insistence of HRH The Prince Albert, who was at that time Master of the Corporation. By the 1890s the business was no longer remunerative as Ballastage by then was based on the pumping of water into ships' spaces rather than loading solid or gravel ballast.

How Ballastage funded charity

In 1594 in the reign of Queen Elizabeth, Lord High Admiral Howard of Effingham surrendered the rights of Ballastage in the River Thames to the Corporation and these rights were confirmed by Queen Elizabeth on 11 June that year. Proceeds from Ballastage were applied to the relief of decayed seamen, their wives, widows and orphans and Ballastage was regulated under various Acts of Parliament of George II, George III and Queen Victoria. Trinity House enjoyed the exclusive right of Ballastage from London Bridge to the sea with the Corporation of the City of London exercising this right above London Bridge until the Thames Conservancy Act of 1864.

Income for the Corporation's charity by way of funds derived from Ballastage ceased in 1854 on the passing of that year's Merchant Shipping Act which directed that receipts from Ballastage should form part of the Mercantile Marine Fund. This fund also contained Light Dues and was under the control of the Board of Trade and to it was charged the cost of maintenance of the Lighthouse Service, among other functions.

According to Captain Thomas Golding, Elder Brother, in his privately circulated *The Trinity House from Within: A digest of matters relating to the Trinity House of Deptford Strond* published in 1929, *'At times considerable profits were made, and in 1866 £13,068 14s was transferred from the Ballast Office Account to the Corporation and a Ballastage Reserve Fund was opened in the books.'*

The balance of the Ballastage Reserve Fund was maintained until the 1920s and Golding said: *'The question of dealing with the Capital of this Fund is to be considered when the two surviving pensioners die.'*

How Ballastage was managed

By 1823 Trinity House employed a fleet of 40 lighters and in Ballast Committee Minutes of 2 January 1838 laid before the Court we see the usual half yearly report from the Superintendent of the Ballast of the number, tonnage, condition and value of the Ballast Lighters and Barges.

As for supervision it has been researched in Trinity House Court Minutes held in the London Metropolitan Archives that on 3 May 1842 the Court approved the appointment of Captain John Rees as Supervisor of the Ballast Department vice Captain Nelson *'who goes out by rotation'*. The following year the Court on 6 June *'resolved also unanimously that Captain Daniel Stephenson be appointed a Supervisor of the Ballast Office vice Captain Drew who goes out by rotation'*. Further, on 1 April 1851 the Court heard that the earnings of the men employed in the Ballast Department had recently improved: *'the Court concurred with the supervisors in considering that there no longer exists any necessity for entertaining the prayer of the Memorialists…'*

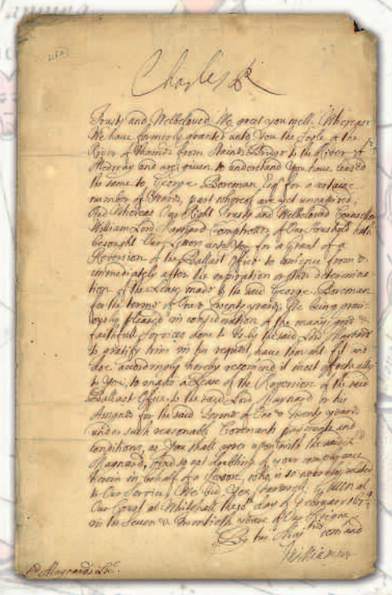
Above: *Embellished arms of the Corporation on the south side of the ground floor, east, at Trinity House. Note the ballast heaver's leather 'cup' on a pole at 3 o'clock.*

With the advent of steam power mechanical dredging was possible and in time the Corporation operated the steam dredgers *Goliath* and *Hercules* with six lighters and a staff totalling 24 with some at Trinity House on Tower Hill in the Ballast Office, situated approximately where the Navigation Directorate and the Library stands today. Others were at the Ballast premises in Ratcliff (with a wharf) in which riverside parish Trinity House had moved from Deptford in 1618 when it became the seat of the Corporation until 1660 following which we moved to Water Lane in the City.

The Ratcliff holding comprised a riverside wharf known as No 20 and No 22 Narrow Street. By the 1930s this had been let to a barge repairing and engineering business and a small building here formerly used as the Ballast Heavers' Hall was subsequently let as a warehouse to the brewer Watney, Combe and Co. It is understood that this final parcel of Trinity House property in Ratcliff was disposed of in the 1990s.

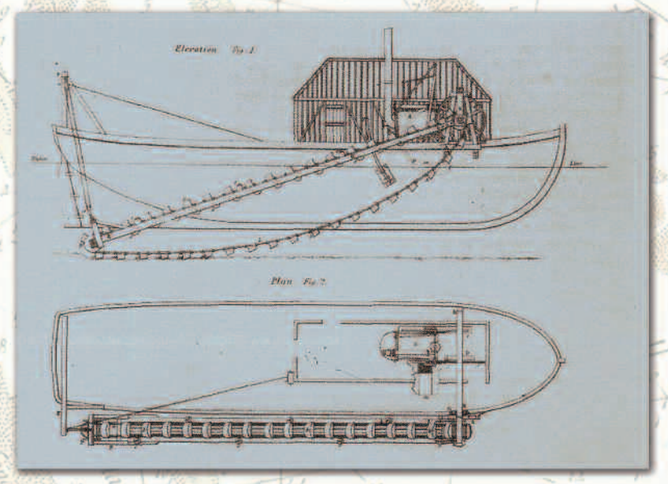
To give a further idea of the magnitude of the ballast task it was stated in evidence to a Royal Commission in 1834 that in the years from 1594 to that year some four hundred million tons of ballast had been raised by the Corporation's Ballast Heavers providing huge receipts for the Corporation's charities which, of course, meant not only the benefit for those in need mentioned above but also for the provision of the almshouses, annuities and pensions, a not inconsiderable liability for by the mid-1930s there were more than 8000 pensioners together with women and children for whom aid was provided.

Several pages in Chapter Six of *Light Upon The Waters The History of Trinity House 1514 - 2014* by Andrew Adams and Richard Woodman are devoted to Ballastage and the Thames.



Above: *Bearing the Sign Manual of Charles II this letter concerns the contentious issue of ballast or 'the soyle of the Thames' granted from Staines Bridge to the Medway.*

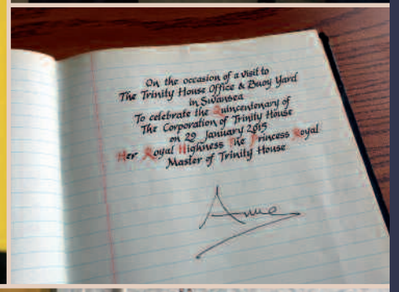
Above: *An eighteenth century ballast receipt showing the laborious method of raising ballast.*



Above: *Steam-powered ballast dredger, formerly the gun-brig Blazer, of 1806.*

Badges worn by Ballast Officers. *The left-hand badge shows the leather bucket in use and demonstrates the manual nature of the work.*

Visit of HRH The Master to Trinity House Swansea **29 January 2015**



Main picture; front row (left to right):
Selwyn Hughes, Lee Carter, Stuart Austin, Martin Price, Shaun Phillips, Rob Dale, Deputy Master , HRH The Master, Stuart Mason, Rachel Davies, Ian Arthur, Mike Roberts, Jim Veall.

Back row (left to right):
Dan Maskell, Steve Summerfield, Jack Lawson, Paul Thomas, Keith Cameron, Vince Laing, Mike Williams, Jeff Bloffwitch, Hugh Thomas, Ian Horsley, Phil Horner.

Trinity House at 500 or how to celebrate a quincentenary

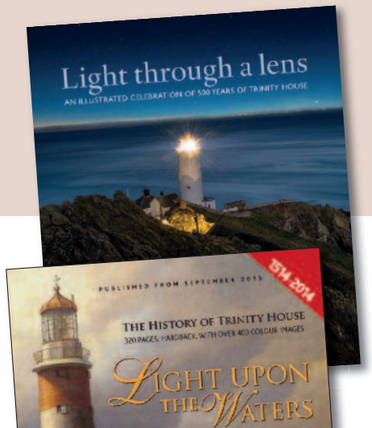
IN THE YEAR IN WHICH WE CELEBRATED THE FIVE CENTURIES SINCE Henry VIII granted the Corporation its charter there were more than 30 quincentenary events, including two at Guildhall in the City of London and one at St. Paul's Cathedral. These events provided an opportunity for over 4,500 people of the wider Trinity House family and their guests plus those of the Corporation to enjoy this unique commemoration.

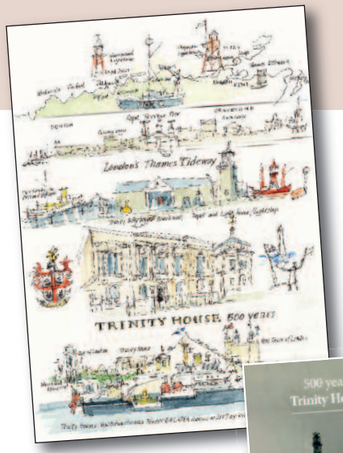
In January this year the Court unanimously offered a vote of thanks to all those involved in the quincentenary events and associated projects.

To close this momentous year let us hear what the Executive Chairman Captain Ian McNaught had to say by way of reflection: *'It is a great pleasure to be able to use the pages of Flash to thank everyone, throughout the Corporation, who contributed so much to the celebrations of our quincentenary. It has been a most momentous year and one which I hope has given everyone some special memories to remember it by. We can now build on the strength of those five centuries of achievement and look ahead to the start of our next half millennium still providing those things we were established to deliver way back in 1514: safety at sea, benevolence to the needy mariner and fellowship through the Fraternity and wider Trinity House family.'*

Throughout the year we have been privileged to show Her Royal Highness The Master something of our work and to enable her to meet our people at Harwich, St Just, Swansea, Walmer and afloat.

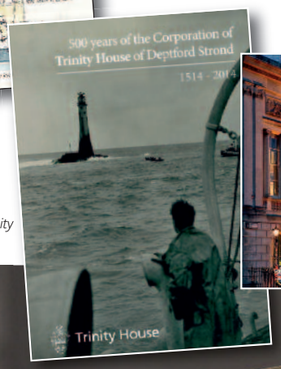
Below: *Two books;* Light Though a Lens *and* Light Upon the Waters.





Above: *The topographical artist Peter Kent produced a collection of Trinity House themed paintings.*

A custom-designed mug.



Right: *500 years of the Corporation of Trinity House of Deptford Strond 1514-2014.*

Left: *A commemorative photo book depicting the many events which took place in the year.*

The replica Admiralty Mace presented by the Admiralty Court.

Above and right: *The exhibition in the National Maritime Museum to run to January 2019 opened by HRH The Master.*

Above: *A timeline, mounted externally at Trinity House on Tower Hill.*

Above & inset: *The new Thames Waterman Cutter* Trinitytide *christened by Mrs Susan McNaught.*

Above: *The accommodation and facilities hub at Mariners' Park, Wallasey.*

Above: *The refurbished RNLI Station at Ramsgate*

Left: *A stamp issue by Royal Mail.*
Below: *A £2.00 coin from the Royal Mint.*

By **Rear-Admiral John Lippiett,** CB CBE DL CEO The Mary Rose Trust, Younger Brother.

The *Mary Rose* story continues....

THIS MAY SAW THE SECOND ANNIVERSARY OF THE OPENING OF the Mary Rose Museum in Portsmouth Historic Dockyard. It quickly gained a reputation as one of the finest museums in the country and is regarded as an exemplar of good museum practice setting high standards in curation, interpretation and research, as well as leading the field in museum learning and outreach.

Two years on and it continues to receive much acclaim and recognition here in Portsmouth, as well as on the national and international front. The Museum has welcomed over 780,000 visitors, including some 50,000 children and young people through the Stavros Niarchos Foundation Learning Centre. The Museum's reputation has spread far and wide, with visitors travelling from all over the world to see the hull reunited with her unique collection of artefacts.

We welcomed our 500,000th visitor some 13 months after opening. We expect to receive our 1,000,000th visitor just before we close the museum in early October for the next phase of the museum project (closing for some six months). Visitor feedback is exceptional, which is reflected in a few of the comments below:-

'Unique Museum Visit. A remarkable and fascinating journey through a Tudor time capsule. The whole experience is superbly presented and we found the tour guides eager and very well informed.'

'Astonishing! A quite exceptional museum experience that focuses as much on the crew and artefacts…An extremely well designed building that is built with layers of viewing galleries around what remains of the vessel.'

'Stunning. This museum was spell binding. The feat of bringing the ship up and preserving it is amazing in itself. What they found on board and have preserved is remarkable. Sensitively done, they have reconstructed some of the lives of the people who drowned on the Mary Rose.*'*

'Eighth Wonder of the World. The Mary Rose Museum exceeded my expectations by a country mile! It is stunning, the scale of the ship and the operation to extricate it from the seabed and put it on display is just awe inspiring. I have seen the Terracotta Army in Xian, been to the top of the Empire State Building in New York…but nothing compares to the Mary Rose *for jaw dropping incredulity! And, the guides were terrific, knowledgeable and with an excellent style of imparting the information. Wonderful experience!'*

The interaction with our staff and volunteers is seen by visitors as an integral and important part of the Mary Rose experience. Over 100 volunteers give their timely freely to welcome and inform visitors about the *Mary Rose*. They come from all walks of life with different life experiences, but they share one thing, their passion for the *Mary Rose*. They can be seen throughout the Museum talking to visitors about the ship and the artefacts, or bringing the story to life through replicas. Their knowledge and enthusiasm does much to inspire visitors of all ages.

Left: *New interior. Mary Rose, the 'sailing machine'. In two years the Museum has welcomed over 780,000 visitors, including some 50,000 children and young people.* ©Hufton + Crow.

Below: *More than twenty awards have been gained by the Museum for excellence in architecture, construction, exhibition, conservation, education and innovation.* ©Hufton + Crow.

Our partnership with Trinity House enables people of all ages and abilities to engage with navigation and seamanship in exciting and diverse ways.

A major achievement for the Museum has been the wealth and breadth of awards it has won. More than twenty have been gained for excellence in architecture, construction, exhibition, conservation, education and innovation. As well as being a finalist for the Art Fund prize for Museum of the Year for 2014, we have been nominated for the European Museum of the Year, the outcome of which was being decided as this edition of *FLASH* was being completed in May.

We continue to be very grateful for the support of Trinity House. The Navigator's Case in the Men of the Upper Deck Gallery acknowledges the support given in the construction and creation of the museum. It contains a unique collection of navigational equipment found on board the ship. The ongoing support for our learning programme is acknowledged through activities in the Stavros Niarchos Foundation Learning Centre. Our partnership with Trinity House enables people of all ages and abilities to engage with navigation and seamanship in exciting and diverse ways. We are able to provide a range of stimulating sessions based on the collection of Tudor navigational equipment from the *Mary Rose*. In 2014, 2,000 primary and secondary children and teachers attended nearly one hundred of these workshop sessions. We have taken this out to schools, and even to the national Big Bang Fair where we used the 'tipping ship' model to demonstrate stability. This proved a great hit with all age groups.

The controlled air drying has now brought the hull to a stable condition, allowing us to start Phase 2 of the museum project. We will be removing the air drying tubes around the ship and dismantling the walls between the ship and its mirror image. There will then be interrupted views of the hull from all three levels and from the end galleries. On the upper deck, visitors will enter the ship hall through airlocks, so as to be in the chamber with the ship thus giving the finest view available. The museum will be closed from 5 October this year for work to start and will reopen in late Spring 2016.

The *Mary Rose* is a unique time capsule providing an extraordinary insight into the lives of the people on board when the ship went down 500 years ago. We continue to strive to ensure that the story of the *Mary Rose* and her crew is told in an imaginative and informative way for future generations.

Above: *The 'tipping ship' being demonstrated to HRH The Prince of Wales and the Duchess of Cornwall.*

Above: *Over 100 volunteers give their timely freely. They share one thing, their passion for the* Mary Rose.

Top right: *At the Big Bang Fair for UK Young Scientists and Engineers, July 2014.* ©Nautical Archaeological Society

Lower right: *On a school trip, a potential member of the Fraternity maybe. In the museum, the Navigator's Case and associated interactive display sponsored by Trinity House have proved popular.*

By **Philip Wake** MSc FNI Chief Executive Officer, The Nautical Institute

The Nautical Institute in 2015

MANY READERS OF *FLASH* WILL HAVE KNOWN ABOUT THE INSTITUTE for several years and indeed some will be members. Much has changed in recent years so an update on our work may be useful. What has not changed is that the Institute is still very much an international professional body for individuals involved in the control of seagoing ships. Total membership is currently 6,600 working at sea in some 116 countries with a healthy level of recruitment providing growth.

New members are working in the offshore sector and are attracted to join due to the 2010 revision of the membership criteria which based full membership on STCW and other maritime professional qualifications rather than limiting it to Master (Foreign Going) certificates of competency. This revision also introduced the Associate Fellow grade to recognise professional development and experience beyond paper qualifications. Membership benefits include professional recognition, access to the worldwide branch network, seminars, and legal defence insurance to guard against criminalisation in the event of an accident. The Institute is a charity and company limited by guarantee which in the past ten years or so has seen turnover of approximately £1 million from membership and publications grow to in the region of £3million with a more balanced range of funding *(see pie chart on right)*.

Continuing Professional Development (CPD) is a major focus of the Institute's work, both in terms of promoting its necessity to the industry as a whole and providing members with the means to undertake, record and reflect on it. There are many ways to carry out CPD in addition to formal courses. The Institute's range of publications, written by expert practitioners for practitioners, are an important CPD service and include over one hundred titles in books as well as the monthly journal, *Seaways*, and two periodicals issued three times per year – *Alert!*, the Human Element Bulletin now in its twelfth year funded by the Lloyd's Register Foundation, and *The Navigator,* a relatively new magazine aimed at the new generation of navigators but equally relevant to the whole bridge team. Each issue is themed on a particular aspect of navigation, for example radar, and includes an incident report to learn from. With generous funding from the International Foundation for Aids to Navigation (IFAN), the aim of the 100,000 print run is to get this publication in every SOLAS class ship to raise the knowledge and professional confidence of the world's navigators. This is being achieved through direct mailings to fleets, ships' agents and missions and booksellers, plus delivery on board by a host of volunteers – pilots, surveyors, welfare visitors, inspectors, ships' staff, and so forth – for which we are very grateful.

Below: *The Nautical Institute's monthly journal* Seaways.

Left: *A speaker from the floor at the Command Seminar held at, and sponsored by, Trinity House.*

Other forms of CPD provided by the Institute are the longstanding Harbourmaster's Certificate and Command Diploma schemes, both subject to recent revisions, plus the recently launched International Sail Endorsement Scheme (ISES). This is a joint venture with Sail Training International to provide a qualification endorsement for both square rig and fore and aft rig in that sector. The Institute has also developed its accreditation of specialist training providers including oil spill response and ship's welfare visitors against industry agreed standards. We have been working with stakeholders to develop standards for ice navigation training due to the growth of shipping operations in polar waters. This work has been input to the IMO meetings on the Polar Code.

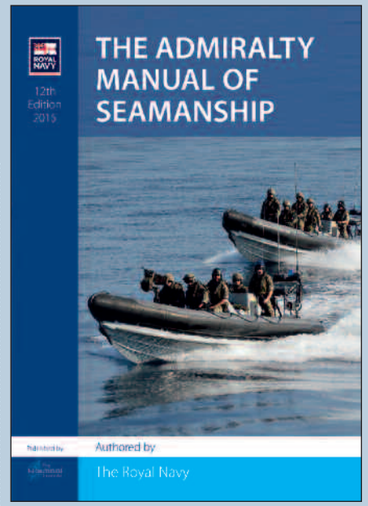
The largest training scheme run by the Institute on behalf of industry stakeholders is the Dynamic Positioning (DP) Scheme to train DP Operators. Over 25,000 DP certificates have been issued since the scheme's inception in 1982 as the qualification is generally a charterer's requirement, and the demand for them has e scalated rapidly in the past five years as oil exploration moved into deeper waters and the DP capable fleet grew strongly. It was certainly the case that we struggled to cope with this increase in very rapid demand but the staff of eighteen is now at full strength (half the total staff) and a new online application system is proving its worth in efficiency gains. As a result, a revised scheme came into force in January 2015 after two years' negotiations within the industry. Revalidation of the certificate every five years was also introduced.

Apart from CPD, continuing work includes e-Navigation, the integration of ship and shore based navigation systems, which is intended by the IMO to be based on user needs. We work closely with Trinity House on all safety of navigation issues, particularly highlighting the vulnerability of GNSS and the dangers of over-reliance on GPS alone leading to the degradation of skills using other methods and systems. Reduction of sea room due to the increasingly large arrays of wind farms and other devices to generate renewable energy is another subject of mutual concern and is just one part of our work on Marine Spatial Planning which, with the World Ocean Council, is aimed at raising the awareness of the maritime industry and developers of the need to work together.

Implementation of ECDIS carriage and the necessity of effective training, the design of lifeboat release mechanisms to improve safety in their use, and the revision of GMDSS requirements are all subjects on which we have engaged with industry representatives to develop guidance and solutions.

All these issues are debated within the Institute's membership through the branch and governance structure as well as in a LinkedIn Group of some 15,000 maritime professionals moderated by the staff. The Institute also makes good use of Facebook, YouTube, Twitter and an eNewsletter to engage throughout the industry. These are all forms of mentoring on a mass scale in addition to promoting the re-establishment of one-to-one sharing of experiential knowledge.

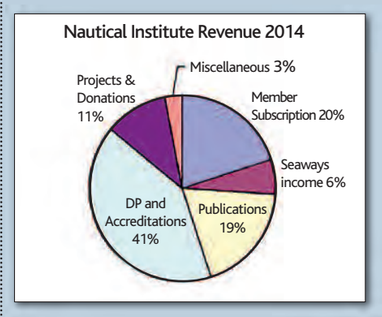
Improving the safety and efficiency of shipping operations remains the primary aim of the Institute and features in the many seminars and meetings organised by staff and members.



Above: The Admiralty Manual of Seamanship *authored by the Royal Navy and published by the Institute.*

An example is the Command Seminar series on Navigational Competence organised last year in Sydney, London, Cyprus, Glasgow and Manila. There was excellent participation by Generation Y seafarers in each seminar. Among the conclusions reached was that there is a gap between training and rapidly evolving technology.

Above: *Cover for a recent edition of* The Navigator. *All issues can be downloaded from* **www.nautinst.org**



Above: *Pie chart showing income. The Institute is a charity and company limited by guarantee which in the past ten years or so has developed from a turnover of approximately £1million from membership and publications to £3million.*

Main picture: Discoverer Inspiration, *a Dynamic Positioning vessel. The largest training scheme run by the Institute on behalf of industry stakeholders is the DP Scheme to train DP Operators. Over 25,000 DP certificates have been issued since the scheme's inception in 1982.* *Photo: Transocean.*

By **Tiina Tuurnala,** *Deputy Director General, Traffic and Information.*

The Finnish Transport Agency:
a young organisation with a long history

FINLAND IS HEAVILY DEPENDENT ON MARITIME TRANSPORT. Over 80% of our import and export goes through our ports. Because maritime transport is a vital part of the transport chain that supports Finland's economy and the welfare of its citizens, the major ports need to be kept open all year round. Finnish coastal areas, with their large archipelago areas, shallow waters, rocky seabed and narrow fairways, are challenging to navigate even during the open water season. Ice conditions during wintertime can make it even more challenging. Under these circumstances the consequences of a pollution accident would also be quite severe. Therefore, it is very much in our interest to maintain and develop fairways with aids to navigation, Vessel Traffic Services, nautical charts and other e-Navigation services which assist all merchant ships navigating our waters.

A holistic view of the transport chain

The Finnish Transport Agency (FTA) is a governmental agency which was formed in 2010 by merging the Finnish Road Administration, the Finnish Rail Administration and the Finnish Maritime Administration. The history of all three of these administrations goes back to the early 19th century. FTA proudly continues the legacy of these predecessors by assuming responsibility for the planning and maintenance of the major traffic infrastructure in Finland including roads, railways and waterways. FTA employs approximately 650 professionals.

The maritime sector of the Finnish Transport Agency is responsible for the construction and maintenance of the major part of the Finnish waterways network and the related infrastructure and services that ensure the safety of navigation, such as traditional aids to navigation. FTA also provides the three fundamental cornerstones of e-Navigation services: reliable chart information, reliable position information and reliable communication links between shore and ship. Our first priority is to ensure the safe navigation of vessels, but we also enable smoothness and efficiency of transportation.

Providing safe waterway infrastructure

The Finnish Transport Agency is responsible for the maintenance of approximately 8,200 kilometres of coastal fairways and 8,000 kilometres of inland waterways. The total length, some 16,200 kilometres, includes 3,900 kilometres of fairways used for merchant shipping. In total, Finland has around 20,150 kilometres of public, charted fairways. These fairways are marked by more than 34,000 traditional maritime aids to navigation (lighthouses, buoys, signs, leading beacons and so forth), for which around 25,700 the Finnish Transport Agency is responsible. FTA is also responsible for the 32 Finnish lock canals. The most important of these is the 43 kilometre long Saimaa canal, which has a total of eight locks and connects the large Saimaa watercourse in the Eastern part of Finland to the Baltic Sea. The canal is normally closed during wintertime for a couple of months due to the ice conditions. The Saimaa Canal is a unique canal because almost half of it, including five of its locks, is located in Russian territory. The area around the canal is being leased from the Russian government to the Finnish government until 2063.

In Finland the costs of fairway maintenance are covered by fairway dues. The actual fairway maintenance work is nowadays almost totally outsourced, but the tendering of maintenance contracts and supervision of maintenance work is carried out by the Finnish Transport Agency. Contracting includes service and maintenance of waterways, for example maintenance dredging and repairs and maintenance of the traditional aids to navigation. Ice conditions during wintertime cause some extra challenges to the maintenance work. Floating aids to navigation may get submerged under the moving ice, and after the ice breakup, it is not uncommon that floating aids to navigation have moved out of position or have even completely disappeared from sight.

Above: *In Finland the costs of fairway maintenance are covered by fairway dues. The actual fairway maintenance work is nowadays almost totally outsourced.*

Main picture: *Fairways in Finnish waters are marked by more than 34,000 traditional aids to navigation of which 25,700 are the responsibility of the Finnish Transport Agency.*

Above: *An icebreaker towing.*

Above: *The Finnish Transport Agency's icebreaker service is highly regarded.*

Northern Challenges – winter navigation

While ice conditions cause challenges to the maintenance of fairways, they also create a very concrete obstacle for commercial vessel traffic. The Baltic Sea is an inland sea, and its northern parts freeze every winter. In severe winters it can freeze over completely. Ice conditions typically change continuously. Wind moves the ice fields and the prevailing southwest wind tends to pack ice walls around the Finnish port entrances. Ridged ice is much more difficult to deal with than an even ice cover, and in these cases icebreaker assistance is often necessary. It is important to the Finnish economy and welfare that the ports can be kept open all year round. For this reason ensuring smooth winter navigation is one of the key tasks of the Finnish Transport Agency. This includes ordering icebreaking services and making the authority decisions associated with winter navigation. FTA continually collaborates with its Swedish counterpart on issues concerning winter navigation. The Finnish Transport Agency and the Swedish Maritime Administration closely co-ordinate and share their responsibilities of the icebreaker operations in the northern Baltic Sea. Particularly in severe winters, the Finnish and Swedish icebreakers divide the duties, thus ensuring optimal traffic flow to the ports of both countries.

Vessel Traffic Services

The Finnish Transport Agency is also the vessel traffic service (VTS) authority in Finland. Almost all of the Finnish merchant fairways are included in VTS areas. FTA operates three VTS centres: two for the coastal area, in Helsinki and Turku and one in Lappeenranta for the Lake Saimaa area. The coastal area 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. In the deep water channel in Lake Saimaa INS is provided to vessels when the Saimaa Canal is open for traffic. Operation of the VTS centres is enabled by maintaining a comprehensive traffic image of all of the Finnish sea areas.

The traffic image is compiled using wide ranging coastal AIS and a radar sensor network. The Finnish system for maritime traffic monitoring and search and rescue with its sensors and arrangements for information exchange is developed, and to a large extent acquired, through a joint procurement with other Finnish maritime authorities. The so called FIMAC co-operation was initiated over twenty years ago and is still a unique example of extensive co-operation between authorities. At present, co-operating parties include the Finnish Transport Agency, the Finnish Transport Safety Agency, the Finnish Border Guard and the Finnish Navy.

In addition to VTS services, the Finnish Transport Agency jointly operates a Ship Reporting System, GOFREP, in the Gulf of Finland with Estonia and Russia. There is regular and frequent passenger ferry traffic between Finland and Estonia in the Gulf of Finland area crossing the gulf in a north-south direction. Russia has several large oil transportation ports at the east end of the Gulf of Finland. Tankers going to and coming from these ports follow the Gulf of Finland in an east-west direction. The routes of tankers and passenger ferries cross in the middle part of the Gulf of Finland, creating an area with an increased risk of collision.

The average depth of the Baltic Sea is only 57 metres, compared to the average depth of the Mediterranean Sea which is 1.5 kilometres. The eastern part of the Gulf of Finland and the coastal areas are even shallower. The average depth of the Gulf of Finland is 37 metres. Accidents in the area could have disastrous effects on the environment, marine life and the coastlines of the surrounding states. To mitigate the risk, a mandatory traffic separation scheme and ship reporting system have been established in the area. The jointly operated SRS system is

➥ *Continued on page 32.*

The Finnish Transport Agency:
a young organisation with a long history

Continued from page 31.

also a unique example of cross border co-operation in traffic monitoring. The three countries involved: Finland, Estonia and Russia all monitor their own areas of responsibility and exchange ship reports and other relevant information in real time.

Hydrographic Services

The Finnish Transport Agency is also a national authority in publishing nautical charts for commercial shipping and other waterborne vessels. The current portfolio for printed and electronic charts covers all Finland's sea areas and major inland lakes. In addition to chart publication, FTA provides Notices to Mariners, chart update services and other related publications which navigators are required by the IMO and the national safety authority to have onboard.

Enabling future e-Navigation

There are a few basic elements that have to be in place before e-Navigation can become a reality. These include reliable electronic charts, reliable electronic position information and communication links between shore and ship. The Finnish Transport Agency is contributing to all three of these elements in Finnish waters.

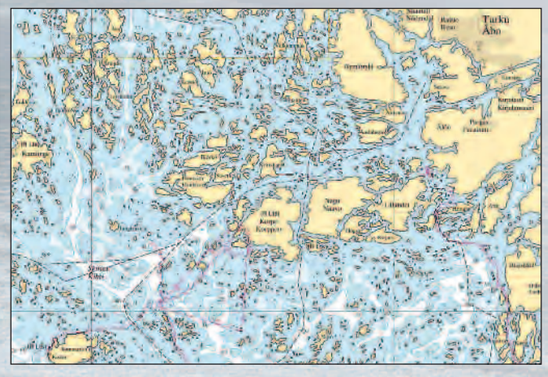
We are responsible for providing official electronic charts of our waters. To support and secure the GNSS-based electronic navigation FTA provides a DGNSS augmentation service in all coastal areas and in the Lake Saimaa area. The provision of the service is co-ordinated with Sweden to achieve more reliable service with fewer transmitting stations in the Gulf of Bothnia. FTA has closely followed the development of resilient Positioning, Navigation and Timing (PNT) and even carried out some of its own tests related to terrestrial backup systems (e.g. R-mode of MF-transmissions).

FTA also maintains the Finnish National AIS network. Currently there is only a limited amount of information services provided via this communication link. We provide some basic information using AIS Application Specific Messages (ASM), for example meteorological information and virtual aids to navigation. In the future when the system evolves to VHF Data Exchange System (VDES) there will be more bandwidth available and we expect to use this communication link increasingly for ship-to-shore and shore-to-ship communication.

Looking into the future

The Finnish Transport Agency will be responsible for providing many of the planned services in the e-Navigation Maritime Service Portfolios. To make sure the planned services are useful to mariners, we will test and validate the planned concepts in projects and test beds. The project Enhanced Navigation Support Information (ENSI) is a test bed for a two-way electronic navigation service that could increase vessel traffic safety and facilitate the work on ships' bridges. Currently the service is being piloted in the coastal VTS centres in co-operation with several Finnish shipping companies. Through ENSI, a vessel's tactical route plan is sent out to maritime authorities. The safety of the voyage plans will be automatically checked in advance. All anomalies or defects in the plans can be observed at an early stage, and vessels will be notified of these observations. The aim is to reduce the possibility of human errors made during route planning. Route plans received from vessels are also incorporated in the VTS centres' real time traffic image to help detect possible traffic congestion and risk situations in advance. Automatic alarms will also help the VTS operators focus their attention on areas where it will be needed. When using the service, vessels plan their route with ECDIS as usual, and using a simple chart application, they can send the route plan to VTS. Using the same application, they can also give the information that is required in the mandatory report for GOFREP. The aim is to lessen the burden on board and the need for VHF communication when vessels enter the area. Also ordering a pilot for Finnish ports can be done at the same time.

After navigators have sent their route plan, they will be able to easily see if the route plan is safe or if there is a need for altering the route. At the same time navigators can choose other information that will be displayed on the chart. This includes information on weather and ice conditions, ice waypoints, navigational warnings and information about other possible hazards or anything unusual along the route that pertains to the planned voyage. The technology for providing the services currently tested in the ENSI project is developing rapidly. The Finnish Transport Agency will continue the development of these services and route exchanges in collaboration with other authorities and test beds. This will ensure that the development will lead to harmonized services and enable some of the planned services to be operational in the near future.



Top: *The Saimaa Canal is unique as almost half of it, including five of its locks, is located in Russian territory.*

Above: *The Saimaa canal in summer. In the deep water channel in Lake Saimaa a navigation service (INS) is provided to vessels when the Saimaa Canal is open for traffic.*

Main picture: *While ice conditions cause challenges to the maintenance of fairways, they also create a very concrete obstacle for commercial vessel traffic.*

Clockwise from top left:

- *The Finnish Transport Agency is also the vessel traffic services (VTS) authority in Finland. Almost all of the Finnish merchant fairways are included in VTS areas. FTA operates three VTS centres: two for the coastal area, in Helsinki and Turku and one in Lappeenranta for the Lake Saimaa area.*
- *The Saimaa canal in winter.*
- *Extract from FTA General Navigational Chart INT1024.*
- *Vessels plan their route with ECDIS and using a simple chart application, can send the route plan to the VTS centre.*

By **Paul Ridgway**

The Mysteries of *the Order Book*

ONE OF THE MANY BOOKS TO BE KEPT AT A TRINITY HOUSE STATION is the hardback, ruled Order Book. The publication was to be, in the words of the Service Regulations: *'Entered up in the proper manner, kept for reference'* Interestingly, this was one of a broad selection of titles kept at a Trinity House station and of course the list varied from lightvessel, lighthouse or tender and included *Whitaker's Almanac* and *Pear's Encyclopaedia* as well as various items of stationery and reference works necessary for the efficient accounting of stores and in the running of a light station. These amount to: the Oil Book, the Fog Signal Store Account Book, the Circular Book, the International Code of Signals, the Medical Guide, Brown's *Flags and Funnels*, and Commander Irving's *Bends, Hitches, Knots and Splices*. To this were added instruction cards for Morse and semaphore as well as directions as for the use of the Schermuly pistol rocket apparatus.

In a steam vessel the ship's order book carried instructions as to the duties of the Deck Watch, that the volume should be: *'kept up to date and readily available to all concerned. The Order Book was directed to be kept in the charge of the Master and to be seen and initialled by the District Superintendent monthly. Committees afloat may enter any orders that may be considered necessary for the general efficiency of the vessel.'*

Of course, the first entry in any lightvessel or lighthouse Order Book was that concerning the first putting in of the light and the last edition of the Book, or a series of Books, closed with a report of stores being removed and the light being decommissioned. The annual Visiting Committee of Inspection also commented within on the state of the station and mention was made of the Elder Brethren making the inspection.

A dip into Order Books of the past make interesting reading:

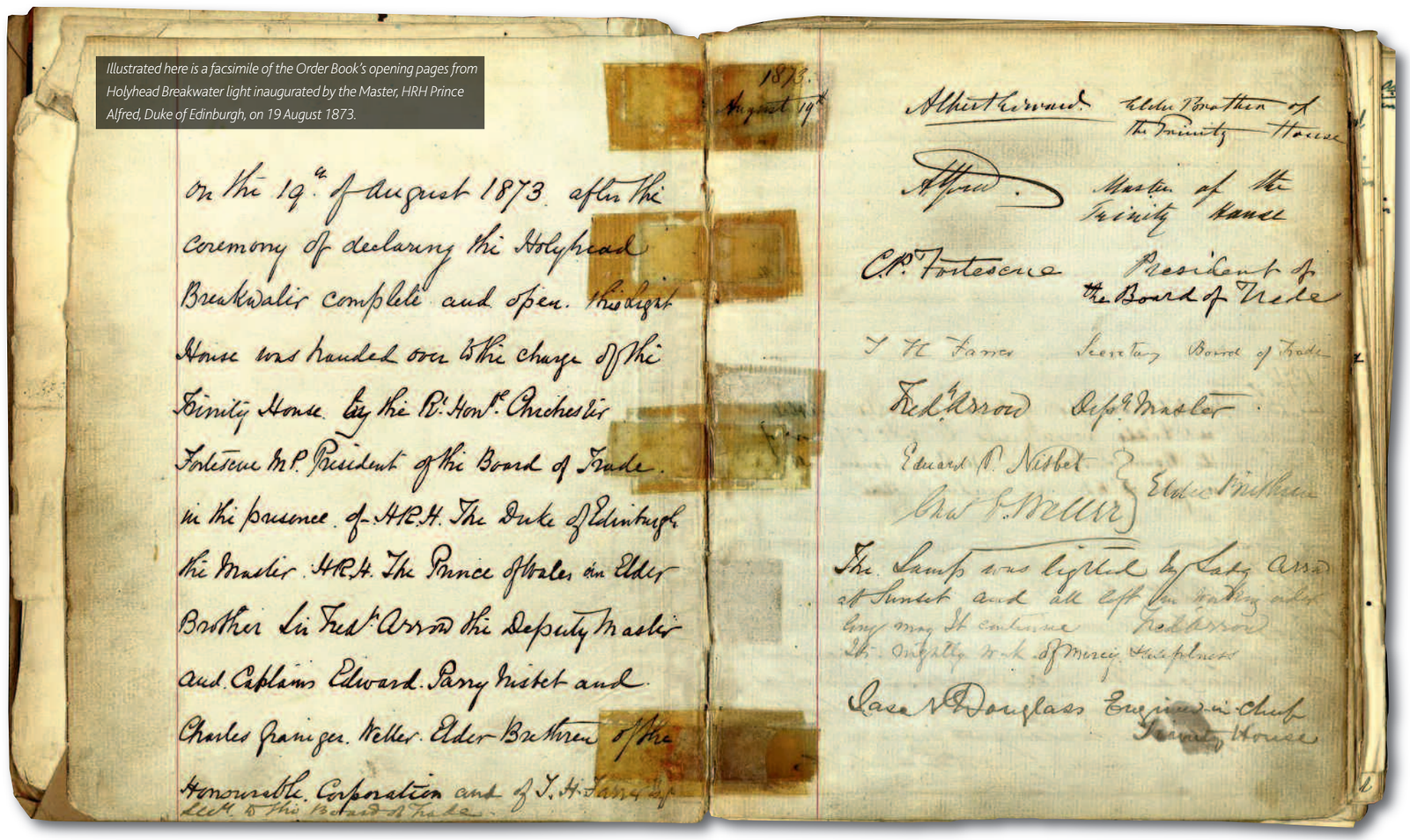
For example on 9 July 1851 at **Plymouth Breakwater** Lighthouse we read: *'It having come to the knowledge of a Committee of Elder Brethren that persons are in the habit of visiting the Light House on Sundays the Light Keepers are hereby order'd not to admit any visitors on that day – there being six days in the week for viewing the building without intruding on the Sabbath.'*

Captain William E Farrer
Captain Henry Shuttleworth
Captain James Drew

The Superintendent, Captain T E Ditcham was forced to make the following entry in 1852: *'The Elder Brethren having visited this lighthouse and observed a beer barrel placed in the Oil Room, after it had been directed by the Superintendent that it should at all times be kept in the cupboard of the Water Room. I am directed to signify their surprise at this instance of neglect of the Superintendent's Orders, and that any repetition of such disobedience will subject the Keepers to dismissal from the Corporation's Service.'*

Enter'd this 2nd day of April 1852
by the Superintendent, order of the Corporation.

Holyhead Breakwater light was inaugurated in 1873 and the Order Book carries the following on its first page: *'On the 19th August 1873 after the ceremony of declaring the Holyhead Breakwater complete and open this Light House was handed over to the charge of the Trinity House by the Rt Honble Chichester Fortescue MP President of the Board of Trade in the presence of HRH The Duke of Edinburgh, the Master, HRH The Prince of Wales an Elder Brother Sir Fredk Arrow the Deputy Master and Captains Edward Parry Nisbet and Charles Granger Weller, Elder Brethren of the Honourable Corporation and TH Farr, Secy of the Board of Trade.'* Those present signed the Order Book and the following was added: *'The Lamp was lighted by Lady Arrow at Sunset and all left in working order, long may it continue.'*



Illustrated here is a facsimile of the Order Book's opening pages from Holyhead Breakwater light inaugurated by the Master, HRH Prince Alfred, Duke of Edinburgh, on 19 August 1873.

At **Withernsea** Lighthouse the light was exhibited for the first time at sunset on 1 February 1894. From the Order Book we note that modernisation gathered momentum in 1936 for in accordance with Notice to Mariners No 8 of that year we see that the Light (Electric) was installed and exhibited on the 17 September 1936 at sunset with altered character:- *'The new character is as follows:- one white flash of about 0.1 second every 2.5 seconds.'* In the Service in the 1890s there had occurred a fire at a station but the location is not given. However, it was necessary that a form of safety circular had to be issued to the Service and from the Withernsea Order Book the following instruction was written out and applied to the Order Book, presumably before the days of duplicators or the Roneo system:

Trinity House 11 February 1895.
It has been brought to the notice of the Board that, on the occasion of a Fire which recently occurred in the Lantern of a Lighthouse, the Assistant Keeper was absent from the premises and in the adjoining house after sunset, the Elder Brethren have ordered that for this serious breach of the Regulations, he be severely reprimanded and removed at his own expense to another Station; – The Principal Keeper who was primarily to blame for the mishap, being placed on Pensions List for neglect of written orders in not having a Bucket and Flannels in the Lantern, and for his general inefficiency when the fire originated. I am to add as respects the Assistant Keeper above referred to, that had it not been for his previous good record he would have been much more severely dealt with.

Charles Alston Kent, Secretary to the Corporation.

At **Barrow Deep** Lightvessel (formerly Princes Channel Lightvessel) the Order Book starts on 6 April 1854 when the station was visited by Captains Henry Bax, William Pigott and T Narramore Were.

On 19 May 1900 a letter was written into the Order Book from Trinity House London reading: *'It having been represented to the Board by the War Office authorities that extra expense is occasioned and much additional time occupied in effecting Repairs to signal guns in cases where attempts have been made by inexperienced Persons to rectify damage that may have been caused by them. I am to signify the instructions of the Elder Brethren that you caution the Officers of Light Vessels to exercise great care in dealing with the guns, especially when engaged in cleaning out the Vent by means of the steel "bit" which work should not be attempted by an inexperienced member of the crew, also, that in the event of a gun becoming unserviceable no attempt be made to remedy the defect but that the same be at once reported.'*

Signed **Chas. A. Kent**, Superintendent

15 May 1919 J Hattersley, Superintendent commented: *'…the manual Fog Horn to be cleaned up & kept in order…The Hammocks of Naval Ratings to be scrubbed.'*

10 July 1929 *A further notice by the Superintendent: 'Inspected from Alert S/T on relief. Vessel clean and efficient. Mechanic (AGA) visited ship on 8 July and took ashore the upper mixer.'*

On **5 August 1931** a line from N J Williams, Master, *Satellite: '…AGA representative visited & inspected apparatus.'*

War clouds had gathered and on **7 June 1940**; *'No 83 LV towed from station & placed at Barrow Deep (Admiralty Station) to ground moorings 100fms NE & SW arms 20fm G. Riding chain 1 5/8" breeches. No 26 towed to London.'* **N G Williams,** Master.

28 October 1940. By A. Morrell *'No 83 visited from Triton by Deputy Master. Certain damage to lantern etc. caused by magnetic mine. Mechanic Rigg joined from Triton to attend to same. Otherwise all well.'*

28 November 1940. Barrow Deep Station discontinued & vessel withdrawn owing to war conditions.

Signed **S W A Jarrett** Chief Superintendent, **28 March 1949**.

I look forward to turning the pages of the Order Book as the months go by.

The paths trodden by *Trinity House Yeomen*

IN 1994 THE ELDER BRETHREN OF TRINITY HOUSE HAD THE FORESIGHT to support the Merchant Navy Scholarship Scheme designed for cadets to achieve their Certificate of Competency and more recently the Officer of the Watch certification. In 2002 the Yeoman scheme was introduced in order to encourage those cadets, once they had qualified, to maintain a link with Trinity House. Today, we have a pool of a hundred Yeomen and the Fraternity is interested to know what has happened to these past cadets. How far afield have the Yeomen reached in the maritime industry and what experiences have they gained on their individual career paths?

Above: *Richard O'Donnell, right, and his father. Father and son both in the maritime business.*

In response to a request for a short biography, replies revealed men and women have worked in over a hundred countries around the world, for government and commercial vessels, employed as deck, engineer and electro-technical officers in ships and in management ashore. Yeomen are found in employment as ship operators and managers, working with vessels carrying hazardous cargoes on Moss-Rosenberg, Membrane and 'Q-Max' LNG carriers; crude oil and product tankers, Floating Production Storage and Offloading (FPSO) vessels and transporting nuclear material. Yeomen have supported military operations into Iraq and protected shipping from Somali pirates. Closer to home they are working ferries around the British Isles, whether this is crossing some of the busiest shipping lanes in the world or navigating, ship handling, berthing and anchoring in Scottish lochs and sounds.

Small coasters tramping around European ports have provided some with a fast learning curve on cargo and ship operations. One person enjoyed time in a collier trading to Kent, but European legislation related to the burning of coal ended the trade and the ships were sold.

Yeomen have worked their way through the ranks to become the senior staff in luxury cruise ships, conveying passengers to spectacular locations around the world. There are also those working as professional crew in super yachts ranging from 50 metres to 160 metres in length.

In coastal waters there are Yeomen as deck and engineering officers in Trinity House and Irish Lights vessels, commercial sand dredgers, fisheries research and protection vessels. On reaching port Yeomen can be found overseeing vessel traffic services, as assistant harbour masters and tug crew.

There are those that do not stop their interest in the sea when they are home on leave, one worked as a volunteer with the Jubilee Sailing Trust, another had his first command on mv *Balmoral,* a ship included in the UK's National Historic Fleet.

Further afield there are superintendents and managers of specialist vessels and associated services in the Australian and Asia Pacific region; then there are those working in cold weather operations with the British Antarctic Survey.

Worldwide there are Yeomen working as engineers, deck officers and managers in the offshore industry specialising in the construction and decommissioning of oil, gas exploration and production and wind farm structures. This work requires operating vessels specially designed and constructed and with engineering that is using some of the most technically demanding equipment on the high seas today. These include platform supply vessels, anchor handlers, emergency response and rescue vessels, heavy lift pipe-lay vessels, diving support craft, the accommodation semi-submersible flotel and 3D seismic survey ships. Many of these require officers to have Dynamic Positioning Operators' qualifications. One of these sophisticated vessels is the world's largest six legged wind turbine installation vessel.

Our Yeomen are working in shore-based employment and now influence commercial shipping in many varied vocations. The seafarer may hope to avoid an inspector for the Marine Accident Investigation Branch but will no doubt benefit from the wisdom of their published reports on maritime incidents written by a Yeoman.

Further education has played an important role for many. One person completed a BSc Honours top up degree course, then was awarded a degree in Marine Operations Management and is now embarked on the Institute of Chartered Shipbrokers' examinations. Another chose the legal profession and is now working as a solicitor for a company located just a stone's throw away from Trinity Square. Others work with P&I Clubs as claims handlers.

One engineer was awarded a degree with the Open University then became a Fellow of the Institute of Marine Engineering, Science and Technology (IMarEST) and an Incorporated Engineer. As a ship manager he may find Yeomen colleagues in competitor companies working as superintendents or responsible for all ISM/ISPS* activities as the company Security Officer and Designated Person Ashore.

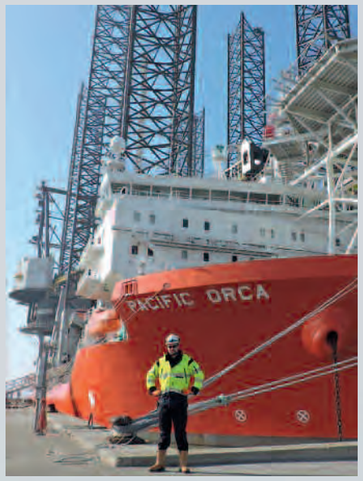
There are those supporting industry trade associations, a Yeoman runs the UK Chamber of Shipping's Careers at Sea website and the Careers at Sea Ambassador scheme, promoting education and training within the Merchant Navy. Another one is providing seafarers with advice and guidance through the seafarers' union Nautilus International and the International Shipping Federation.

Yeomen can be found in education establishments for example training seafarers in maritime and offshore safety, teaching lifeboat skills, sea survival, fast rescue boat operations and introducing underwater escape training courses.

A number of others are still pursuing careers both within and without the maritime sector.

The Trinity House Board remains interested and committed to support Yeomen as they continue their career paths. Yeomen may seek advice and information from a pool of 50 Younger Brethren each of whom is a leader and specialist in their field of maritime expertise.

Those wishing to know more about the scheme should contact Captain John Rose (*Chairman: The Trinity House Yeomen Scheme*) by email at **john.rose@trinityhouse.co.uk**



Above left: *Trinity House Yeoman Will Whatley is serving as Chief Officer in a vessel of the British Antarctic Survey.*

Above right: *Yeomen go afloat in sophisticated craft such as the world's largest six legged wind turbine installation vessel,* Pacific Orca*, shown above.*

Above: *Yeoman Andrew Corrie is afloat in* Pacific Orca.

Main picture, below: *Will Whatley returning to RRS* Ernest Shackleton.

* International Safety Management Code/International Ship & Port Facility Security Code.

Visit of HRH The Master to ***Walmer Homes and THV*** **Alert**

ON 21 APRIL HRH THE MASTER VISITED Trinity Homes Walmer accompanied by her Lady-in-Waiting, Mrs Margaret Hammond, and the Lord Lieutenant Viscount De L'Isle. They were in turn introduced to the Executive Chairman, Captain Ian McNaught, Captain Colin Stewart, *(Elder Brother with the Homes portfolio)* then to Commander Graham Hockley, Secretary to the Corporation, Mrs Joanna Hockley and Mrs Carole Furness, Supervisor of the Homes. The party viewed the Gardens and were introduced to Captain and Mrs Lawrence Stroud in their bungalow. Residents gathered in the Common Room for coffee and Mrs Furness presented Captain Edwin (Ted) Robinson, the Senior Captain at the Homes. Thereafter Her Royal Highness met as many of the residents as were able and after signing the Visitors' Book she departed for Dover Harbour.

At the tug berth the Master was met by Captain Tony Wright, Trinity House Marine Superintendent who introduced the CO of THV *Alert*, Commander Ben Lankester.

Passage was taken to the Varne Bank to show the Master how the new buoyage has reduced the number of vessel infringements into the Varne Bank Alarm Zone. An opportunity was taken for her to tour the ship and to inspect its multibeam sonar before returning to Dover and departing.

All Images by Mark Dalton © Trinity House 2015.

Above: *Captain Colin Stewart (Elder Brother), HRH The Master, Lieutenant-Commander John and Mrs Valerie May.*

Above: *HRH The Master with Captain Ted Robinson (Walmer Senior Captain aged 94), Mr Brian Davies (Radio Officer) and Mrs Breda Sutton.*

Above: *Extreme left, the Secretary, Commander Graham Hockley, Captain Ted Robinson, Mrs Carole Furness (Homes Supervisor), HRH The Master and Mrs Mary Dunn (Deputy Supervisor).*

From left to right: *Rob Fenwick, Chief Engineer, Commander Ben Lankester, Captain Tony Wright (partly hidden behind the Master), 2/O Ryan Palmer, 2/O Neal Sandquest, AB/Mechanic Mark Howard and Mechanic/AB Owen Gow (shaking hands with the Master).*

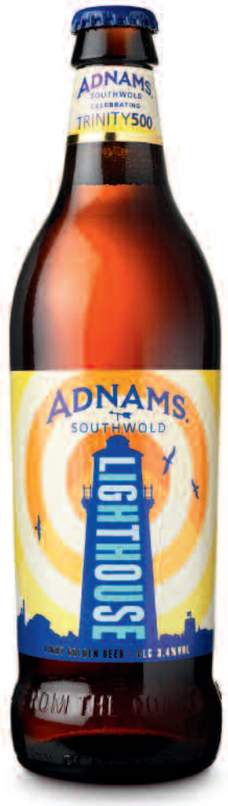
TVH Alert *arriving at the western entrance to Dover Harbour.*

Adnams Lighthouse beer competition

The photograph below was taken as part of the TH500 celebrations, specifically a promotion undertaken during 2014 with Adnams of Southwold whereby their Lighthouse bottled beer *(see right)* was branded for a limited time with the TH500 logo and Adnams used their website to promote awareness of our 500th anniversary.

Paul Howe reported: '*Three competitions were run by Adnams. The first was to win a case of Lighthouse beer, the second was a trip with a technician to maintain Southwold Lighthouse and to have a tour of the Adnams brewery. The third competition was to win a week-long stay in a lighthouse cottage.*

'According to Adnams these competitions obtained the best response to any promotion undertaken online by the company in recent years with in excess of 4000 entrants.'



Below, at Adnams's brewery, *from left to right: Master Brewer Fergus Fitzgerald, Tour Guide Jane Leonard, Angela Beaver and Sarah Parkinson (the two prize winners who won the maintenance visit to Southwold Lighthouse) with Senior Technician Paul Dunning.*

On 13 November the Trinity House Annual Awards ceremony took place at Tower Hill to recognise the achievements of several members of staff and some contractors in a busy and successful year.

Awards for long service were presented to **Gavin Johnson, Simon Wakelin, Stephenie Rawlins, Wayne Belsey, Nicholas Davies, Dawn Culley** and **Denis Pitt**. All have completed 25 years service.

Sarah Harman and **Russell Clarke** (absent) received an award for their work in creating a Fixed Asset Register in a format that could be used by not only Trinity House but also the other General Lighthouse Authorities and the support they gave to the Commissioners of Irish Lights in populating and helping them with the revaluation aspect of the register.

Malcolm Nicholson was similarly awarded for achieving his fellowship of the Royal Institution of Navigation for his '*contribution to the improved safety of navigation*'.

The award for Outstanding Team Achievement Benefitting Trinity House was presented to THV *Patricia* crewmen **Jon Kidd, Jamie Campbell, Kevin Taylor, Daniel Griffin, Bradley Thomas, Colin Williams** and **Daniel Pritchard** for attending a Mayday situation on a Dive Vessel in the Western Dover Strait on 14 June 2014.

In addition all the crew on the Port and Starboard watches of THV *Alert* are recommended for an award for their repair work to No 17 Lightvessel following damage by MV *Bramau*.

Job related professional qualifications were achieved by:

Chris Pearson: Postgraduate Diploma in Advanced Engineering Design
Nick Chappell: NVQ Level 3 in Engineering Technical Support
Mike Gardner: NVQ Level 3 in Engineering Maintenance
Aaron Thurlow: BTEC Level 3 Advanced Certificate in Electrical Engineering
Thomas Arculus: Bachelor Degree in Law
Emmeline Payne: Chief Mate's Certificate of Competency
Robert Dale: Master of Business Administration
Joanna Thornicroft: CIPS Level 4 Diploma in Procurement and Supply
Jonathan Billot: Deck Cadet of the Year, Warsash Maritime Academy
Lawrence Hughes: Microsoft Certified Solutions Expert Qualification

Honouring the Corporation's long term partnerships with some excellent contractors, two awards were given this year: to **Bam Nuttall,** for their work on Nab Tower (collected by **Mike Hodgson**), and to **Yare Shipping** for supply of food stores to the Trinity House Vessels over many years (collected by **Chris Fields** and **Matt Hammond**)

Above: *Gavin Johnson receiving his award for Long Service from Captain Ian McNaught, Executive Chairman.*

Recognising the importance of Health and Safety in the workplace, certificates of merit were collected by **Malcolm Johns** and **Terry Graves** on behalf of Engineering and Field Operations who achieved a zero reportable accident rate since September 2010.

All Trinity House vessels in the year under review excelled in their safety standards, with only one MAIB reportable incident across the fleet. As such each vessel was awarded a Certificate of Merit for their work in reducing accidents. Awards were collected by **Owen Gow** (*Alert*), **Jonathan Turnbull** (*Patricia*) and **Richard Grieve** (*Galatea*).

Finally, a Certificate of Commendation was awarded to **Jon Cuthbert, Paul Dunning, Tina Gochin** (absent) and **Jason Hollands** for coming to the aid of a seriously injured motorbike rider outside the Harwich premises and controlling the situation until the emergency services arrived. The medics and police on scene were extremely grateful for the first aid care administered and the continued help offered. All staff that attended this incident promoted the best professional standards that we strive to achieve at Trinity House and Certificates of Commendation were awarded to those involved accordingly.

Weddings

The Editor would like to apologise for failing to include the following wedding notice in the last issue of *Flash*:

On 13 June 2014 **Hanna Smith**, Commercial Administrator married **Adam Mayhew** on the beach in Gran Bahia Principe Akumal, Mexico, surrounded by close family and friends; a second reception was held at The Waterfront, Dovercourt, in July.

Births

To **Joanna Thornicroft**, Procurement Manager, and **Kevin**, a son, ***Thomas Alfred***, on 22 December 2014. He weighed 9lb 6oz.

Congratulations

Dr Nick Ward At the 59th Session of the IALA Council held in St Germain-en-Laye last December Dr Nick Ward, Director of Research & Radionavigation of the General Lighthouse Authoritiess, was created an Honorary Personal Member of IALA for his contribution to the international development and standardisation of maritime radionavigation and related systems over many years. At IALA he served as chair of the Radionavigation and AIS Committees and then as vice-chair of the e-Navigation Committee for its first eight years.

He is a Chartered Engineer, Chartered IT Professional, a Fellow of the Royal Institute of Navigation and an Associate Fellow of the Nautical Institute.

Christmas cards and Calendars

At this time of the year plans are in hand for the next Trinity House Christmas card and our ever-popular Lighthouses Calendar.

Readers are invited to keep in touch with Commercial Services at Trinity House Harwich by telephone on +44(0)1255 245156 where details may be obtained and orders placed.

Eventually orders may be made online at www.trinityhouse.co.uk/commercial/giftshop/ using a credit or debit card.

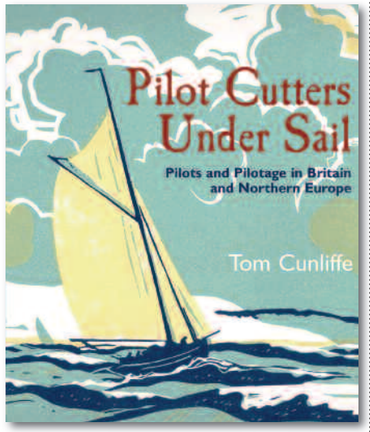
Lighthouse Photography Competition

Choose your favourite image from the 12 which will feature in the 2016 'Lighthouses' calendar. Vote now for your favourite - the overall winner will be awarded with a stay at one of our beautiful Lighthouse Holiday Cottages *(see below)*.

Do you have a photo of one of our Trinity House's lighthouses? To vote and to submit your image for our 2017 calendar visit:

www.trinityhouse.co.uk/lighthouses/photography-competition

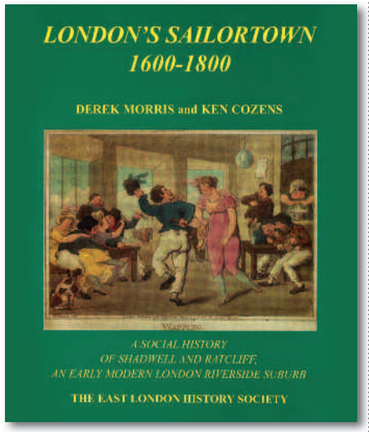
Pilot Cutters Under Sail: *Pilots and Pilotage in Britain and Northern Europe.*
By **Tom Cunliffe** (hardback). Published by Seaforth Publishing. 224 pages ISBN 978 1 84832 154 0
Price: **£30.00**



Published in association with the Royal Yacht Squadron which this year celebrates its bicentenary this book is by an established author who has written on traditional sail and working craft where he is no stranger to the pilot cutter. These vessels operating around the coasts of northern Europe until the First World War were amongst the most seaworthy and beautiful craft of their size ever built. Few have survived to inspire yacht designers, sailors and traditional craft enthusiasts. In their day pilot cutters possessed lines unlike any other working craft and were known for their speed, strength and seaworthiness combined with sound design, build and rig delivered to provide an exemplary craft to enable the pilot to work with confidence in difficult conditions. There is no shortage of Trinity House references in this book for the Corporation has been involved with maritime pilotage in these waters for more than five centuries. Today, it has a deep sea pilotage licensing responsibility and it is good to see the Trinity House official history, *Light Upon the Waters*, by Captain Andrew Adams and Captain Richard Woodman being acknowledged as a source for further study.

Profusely illustrated and well researched Cunliffe's book describes the craft, their crews and the pilots and the skills needed for the competitive and dangerous work of pilotage. He explains the differences between the craft of the waters of the Isles of Scilly, Bristol Channel, northern France, the English Channel, Thames Estuary and Norway – and weaves into the history of their development the stories of the men who sailed them.

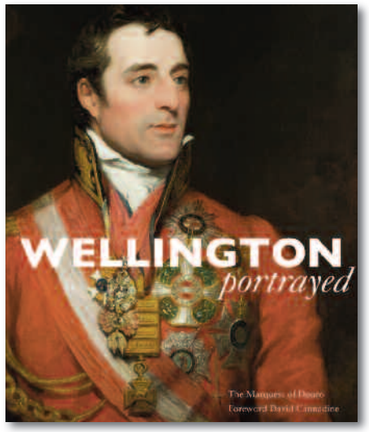
LONDON'S SAILORTOWN *1600-1800*
By **Derek Morris** and **Ken Cozens** (paperback). Published by The East London History Society. 207 pages. ISBN 978 0 9564779 2 7.
Price: **£12.60**



Subtitled ***A social history of Shadwell and Ratcliff, an early modern London riverside suburb*** this valuable history is available from the Society at **www.eastlondonhistory.org.uk** From here, east of the Tower, one of the world's great industrial complexes was created to build, fit out, maintain, victual and man ships which ventured across the globe and became known worldwide. It should not be forgotten that here Trinity House, too, had its being for the Corporation settled in White Horse Street, Ratcliff after leaving Deptford in 1618 before moving further west to Water Lane in the City in 1660 although the Brethren returned to Deptford to dine each Trinitytide.

In St Dunstan's Church, Stepney, is a memorial to Sir Thomas Spert of the parish. He was one of the original petitioners to Henry VIII in 1513 and became the first Master of Trinity House the following year. Members of the Fraternity lived locally. In Ratcliff was the Ballast Office, another responsibility of the Corporation and one which the authors expand upon. They have skillfully brought together a wealth of material of so many facets of a riverside community each of which ensured the smooth operation of commerce for the period under review. This saw great expansion east of the City, increased traffic into the port and the beginnings of the East India Company with all that entailed and many references are indexed. Overall there was created a network trading internationally with merchants financing a lasting British Empire with Trinity House close to the centre.

WELLINGTON *portrayed*
By **Charles Wellesley**, Marquess of Douro (hardback). Published by Unicorn Press Ltd. 240 pages.
ISBN 978 1 910065 12 9
Price: **£30.00**



This year the nation commemorates the bicentenary of the Battle of Waterloo in which Arthur, Duke of Wellington (the 'Iron Duke') with an Anglo-Dutch-Prussian army defeated Napoleon in June 1815. He was twice prime minister, one of the leading figures in the House of Lords, and remained Commander-in-Chief of the British Army until his death in 1852. From 1826 he was Constable of HM Tower of London, from 1829 Lord Warden of the Cinque Ports and from 1837 Master of Trinity House. In *Light Upon The Waters* authors Andrew Adams and Richard Woodman tell us: '… *he gave the Corporation considerable political gravitas*…' Court Minutes refer to correspondence from him at Walmer on lighthouse and pilotage business. One indicates: '… *His Grace will be pleased to sit for his Portrait to be drawn in the costume of an Elder Brother by such Artist of Eminence as His Grace may nominate for that purpose*…' The Court commissioned the portrait by John Lucas (1807-1874) which now hangs in the Luncheon Room at Trinity House.

This large format (305 x 260mm) is a revision of a 1935 book and indicates the whereabouts of likenesses of Wellington, probably the most painted and sculpted individual in British history: the National Portrait Gallery alone holds 339 images of Wellington versus 84 for Nelson, 85 for Marlborough, 90 for Henry VIII and 125 for Elizabeth I. The book provides historical background with copiously-illustrated narrative of Wellington's life, attitude to sitting, notes on painters, sculptors and caricaturists who captured the distinctive face and features to be found in many collections.

Commodore Jim Scorer FNI FCMI RN
The early retirement due to recent health complications was announced at the end of February of Commodore Jim Scorer, Director of Operations, an appointment he had held since 2007. On his retirement the Executive Chairman, Captain Ian McNaught, paid tribute by reflecting upon Jim's energy, enthusiasm and commitment that he had shown within the role of Director of Operations.

During this time Jim Scorer was instrumental in moving the Lighthouse Service forward, including the incorporation of new tonnage with vessels such as *Galatea* and *Alert*. He reorganised the front line of Trinity House as a General Lighthouse Authority and thereby enabled it to deliver operations more efficiently. Part of this was the development of a new Planning Centre, arrangements for the Tri-General Lighthouse Authority helicopter contract due to be implemented later this year and the continued modernisation of our lighthouse estate.

Born in 1953 he joined Britannia Royal Naval College Dartmouth in 1973 and had a distinguished naval career in which he filled seagoing, staff and NATO appointments culminating in that of Director, Maritime, at the Defence Academy, Shrivenham. He was admitted as a Younger Brother in 2007 and an Elder Brother the same year. As Director of Operations he was a member of the Lighthouse Board and with regard to the Corporation he continues as a member of the Corporate Board.

Reg Rowles
Reg Rowles of the Corporate Department at Trinity House retired in November 2014 at the age of 71. He joined in 2005. On Tower Hill, firstly under Maintenance Manager Brian Lane then the current post holder Ian Rider, his responsibilities included cleaning and maintenance of the House, its furnishings and fittings as well as daily preparation of ceremonial rooms for events. Other activities including guidance of contractors during the annual Summer refit thus ensuring the best facilities for our clients and maintaining our position as a splendid venue eagerly sought after for meetings, conferences, receptions, weddings and so forth. In uniform Reg was on duty at Trinitytide. Away from Trinity House he was an accomplished shot and for more than 35 years a dedicated wildfowler on the Essex marshes, particularly Foulness, and successfully trained generations of dogs to the gun. In an earlier life he had worked for the manufacturer of the Sterling machine gun in Dagenham and for forty years was on the maintenance staff of the Ford Motor Company.

Commander Roger Swinney THS
(seen here above with HRH Prince Philip, Immediate Past Master). After 29 years' service on 25 November Commander Roger Swinney retired. **Captain Tony Wright**, Marine Superintendent writes: '*He joined Trinity House in March 1985 as a temporary Second Officer assigned to the guard ships that were protecting the Channel cable crossing construction complex. Roger was permanently employed in February 1988 and has since served on each of the service vessels at one time or another plus undertaken occasional secondment ashore in Navigation and Operations. Roger stood by the building of THV* Alert *and was in command for the delivery voyage from Poland to Harwich. Roger remained in command of Alert until June 2011 when he transferred to THV* Patricia *as Chief Officer and relief Master before returning to resume command of* Alert. *Roger starred in a number of TV productions involving Trinity House demonstrating his true professionalism and extensive knowledge of the* organisation. *His upbeat nature and endearing sense of humour has left an indelible mark on many of his friends and colleagues at Trinity House.*'

PROMOTIONS

Commander Dave Cooper THS
Commander Dave Cooper of THV *Patricia* has been promoted to Captain. Dave joined Trinity House as 3rd Officer in 2002 and in his time with the Service he has served as 3rd, 2nd and 1st Officer in various Trinity House vessels; he also enjoyed a three-year spell as Marine Planner in the Trinity House Operations and Planning Centre. Dave obtained his Master Mariners Certificate in 2012 and has since spent periods in acting command of THVs *Alert*, *Galatea* and *Patricia.* Dave took up his new role as Master of THV *Patricia*, Port Watch, in January.

Commander Bob Culley THS
Commander Bob Culley has been promoted to Captain. Bob joined Trinity House as 3rd Officer in 2005 and in his time with the Service he has served as 2nd and 1st Officer in various Trinity House vessels; Bob obtained his Master Mariners Certificate in 2013 and has since spent periods in acting command of THVs *Alert, Galatea* and *Patricia*. Bob is currently Master of THV *Galatea,* Starboard Watch.

STARTERS

Welcome to the following new members of staff who have joined us between 1 October and 31 May 2015.

SVS

David Porter, Seaman, Full-time employee, 8 October 2014.

Livis Skrundenieks, Seaman Auxiliary, Full-time employee, 8 October 2014.

Scott Ravizza, Engine Room Assistant, Full-time employee, 8 October 2014.

Iain Rowlands, Second Engineer Auxiliary, Full-time employee, 8 October 2014.

Nicholas Hill, Seaman Auxiliary, Full-time employee, 29 October 2014.

Michael Marchetti, Electro-Technical Officer, Full-time employee, 29 October 2014.

Summer Barbrook, Trainee Deck Rating, Fixed term, 10 December 2014.

Ellis Robinson, Trainee Deck Rating, Fixed term, 10 December 2014.

James Charles, Second Officer, Full-time employee, 31 December 2014.

Lloyd MacPhee, Trainee Deck Rating, Fixed term, 31 December 2014.

Benjamin Thompson, First Officer, Full-time employee, 21 January 2015.

Scott Garner, Seaman Auxiliary, Full-time employee, 21 January 2015.

Stephanie Keohane, Second Officer, Fixed term, 11 February 2015.

Harwich

Robert Vanston, Procurement Manager, Fixed term, on 1 October 2014.

Katrina Clover, Light Dues Administrator, Full-time employee, 3 November 2014.

Julian Coles, Design Technician, Fixed term, 17 November 2014.

Christopher Clayton, Design Technician, Full-time employee, 17 November 2014.

James Turner, Supplies Officer, Full-time employee, 15 December 2014.

Sarah Neal, Receptionist, Fixed term, 12 January 2015.

Jenna Pedder, Purchasing Administrator, Fixed term, 9 February 2015.

Peter Hill, Estates and Property Manager, Full-time employee, 9 March 2015.

Lloyd Beeney, Finance Administrator, Full-time employee, 16 March 2015.

LEAVERS

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

Tower Hill

Anna Gibb, Legal Advisor, Full-time employee, after three years' service on 14 December 2014.

SVS

Adrian Sear, Seaman, Full-time employee, less than one year's service on 8 October 2014.

Stephen Amner, Electro-Technical Officer, Full-time employee, after 11 years' service on 9 October 2014.

John Hobson, Boatswain, Full-time employee, after ten years' service on 14 November 2014.

Craig Ramsay, Commander, Full-time employee, after four years' service on 24 November 2014.

Roger Swinney, Commander, Full-time employee, after 29 years' service on 25 November 2014.

Charles Darwall, Second Officer, Full-time employee, less than one year's service on 15 December 2014.

Emmeline Payne, Second Officer, Full-time employee, after four years' service on 7 January 2015.

William Sadler, Captain, Full-time employee, after 12 years' service on 21 January 2015.

Neil Williams, Carpenter, Full-time employee, after 14 years' service on 22 February 2015.

Anthony Hill, Cook, Full-time employee, after nine years' service on 25 March 2015.

Harwich

Angela Duncan, Light Dues Administrator, Fixed term, less than one year's service on 31 October 2014.

Stephen Nunn, Finance Administrator, Fixed term, less than one year's service on 31 October 2014.

Sarah Gorham, Engineering Administrator, Full-time employee, after seven years' service on 17 December 2014.

Jill Aitken, Finance Administrator, Full-time employee, after nine years' service on 28 December 2014.

Denis Gibbons, Apprentice, Full-time employee, after two years' service on 31 December 2014.

Barry Corris, Supplies Officer, Full-time employee, after 17 years' service on 4 January 2015.

Christine Gochin, Field Operations Administrator, Full-time employee, after 27 years' service on 1 February 2015.

Terence McBurney, Supplies Supervisor, Full-time employee, after six years' service on 15 February 2015.

Swansea

Denis Pitt, Supplies Manager, Full-time employee, after 25 years' service on 5 October 2014.

Robert Hewitt, Buoy Yard Team Member (Craft), Full-time employee, after four years' service on 19 November 2014.

Captain John Mallett MNI THS

Died 19 February 2015 suddenly, in command of THV *Galatea* at sea, at the age of 56. Before entering the Merchant Navy he worked in charter fishing vessels then went to sea for initial training in 1975 and for four years served in LPG bulk carriers of the Bibby Line.

Captain Simon Robinson, Marine Operations Manager, Younger Brother writes: *'Bare facts do not get remotely close to explaining John's personality and why his untimely death has had such an impact on those who worked with him. When John joined Trinity House in 1984 he had already served as Chief Officer in gas tankers and it was immediately clear that he was an exceptional practical seaman. It was also clear that he also had an abundance of personality, and was very much from the work hard – play hard school of seafaring.*

'His early days as 2nd Officer saw John working in various ships of the "old" Trinity House fleet, but when THV Mermaid *was delivered in 1988 he was appointed to the starboard watch as part of the first cadre of officers in the new ship, where as well as proving himself a highly competent 2nd Officer, he also introduced to the ship the challenge of making a circuit of the Officers' Lounge without touching the deck – the record for which he held until* Mermaid *was sold out of Service in 2007!*

'Promotion to Chief Officer came in 1992 and to substantive Master in 2002, in the first instance John took command of THV Mermaid*, but when the time came to select the first Master's for THV* Galatea *on delivery in 2007 John's exceptional competence in both traditional and modern high-tech seamanship made him a natural choice.*

'Once installed in the THV Galatea *build team John demonstrated his adaptability and quickly became familiar with all of the systems in* Galatea*. In particular he developed an exceptional understanding of the Dynamic Positioning equipment – typically, it was not enough for John to be able to use it – he needed to know how it worked and became completely familiar with the theory which was always prepared to share with others – this included the Duke of Edinburgh on his occasional visits to* Galatea*.*

'Two of John's proudest professional moments came in 2007, firstly taking command of Galatea *for the delivery trip and bringing her into Harwich for the first time and then taking her up to the Pool of London and welcoming HM The Queen on board for the official naming ceremony; both of these events were accomplished with John's customary high level of professionalism.*

'At the time of John's funeral, inevitably, many stories and memories of John were shared; the impressions of John were all similar – highly competent, capable and professional; set high standards for his crew but was also supportive and understanding of people's needs; a good ambassador for Trinity House; highly respected by his colleagues; and passionate about passing on his seafaring skills to the next generation.'

Commander Raymond Prain THS

Died 10 January 2015 aged 77.

Captain Tony Catesby writes: *'Ray Prain was born and brought up in Dundee, before going away as a young man in 1954 into the Merchant Navy, like so many young men in those days, when everyone knew someone who was at sea. Ray was to serve in many ships, initially sailing from Scottish ports worldwide, before ending up for eighteen months on the London to Australia run in the Orient Liner* Orcades *as Quartermaster, where he studied in his time off to obtain his BoT certificate for a career in navigation.*

'Avoiding the magnetic pull of the Northern Lighthouse Board, Ray joined Trinity House in 1963 initially in the Lightvessel Service based at Great Yarmouth and served on the Cross Sand LV as Lamplighter, where he soon qualified to transfer into the Steam Vessel Service as it was then known. He first joined THV Mermaid *(1959) at Great Yarmouth as Junior Second Officer in 1970, before going on to serve in* Winston Churchill *and* Stella *as Second Officer. Ray married Shirley in 1975 and in 1977 they had a daughter Charlotte. By 1979 Ray was promoted to Chief Officer and joined THV* Patricia *(1938) port watch, remaining in her until January 1982 when we stood by the new build* Patricia *at the yard of Henry Robb in Leith, before bringing her to Harwich in the July. Ray remained as Chief Officer in the new* Patricia*, being involved in Royal Escorts and annual Cowes Week events.*

'During this time Ray showed great patience and aptitude in instructing junior officers and seamen in their duties and skills, and many have since commented on this attribute. Ray later went on to serve as Chief Officer in the new Mermaid*, before returning once more to* Patricia *upon promotion to Commander THS in 1999, and continued to serve in* Patricia *until his retirement in February 2002. Ray had a very dry sense of humour, and a great skill at cartoon sketching. It was not uncommon to come onto the bridge after Ray had gone down below, and find a sketch on the chart table depicting some humorous or disastrous event that had occurred earlier in the day. In the days when we still relieved the lightvessels by ship, he produced a sketch showing the Cross Sand LV on her beam ends in a heavy sea, with a balloon reading* "Good lee for the relief, sir" *directed at the approaching tender!*

'Retiring in 2002 to his home in Mulbarton just south of Norwich, where he devoted much time to the National Coastwatch Institution, serving at Gorleston on Sea where he became a trustee, keeping a finger on the pulse, using the benefit of his local knowledge of that coastline to best advantage. He retained his interest in classical music, sketching, astronomy and model making. Ray frequently attended SVS reunions on an annual basis and always enjoyed meeting up with his old friends.

'Sadly his wife Shirley's health started to fail in 2009 and Ray became her full time carer for the next five years. By December 2014 she deteriorated and had to be admitted to a nursing home just before Christmas. Even more unfortunately Ray then suffered a heart attack on 10 January this year from which he did not recover. His only daughter Charlotte was with him at the end having travelled to see him that day.

Lawrence (Laury) Reynolds

Died 16 May 2015 aged 96, retired Principal Scientific Officer, Trinity House Lighthouse Service.

Laury was born the day after Armistice Day 1918 in Newport, Isle of Wight and educated at the Isle of Wight County Secondary School where he was its first pupil to gain a place at Cambridge. Graduating during the early months of the Second World War he joined the Admiralty as an Experimental Officer to work on the early development of radar.

At the cessation of hostilities he spent three years as Senior Scientific Officer at the Radio Research Station for the Department of Scientific & Industrial Research, where he published papers on microwave and aerial systems. In 1951, he moved to Trinity House as Principal Scientific Officer and served for 32 years until his retirement in 1983.

During this time he was involved with the design of the xenon electric arc lamp as a light source which was first installed at Dungeness Lighthouse, built in 1961. He presented many papers to international conferences on lighting and with IALA and was editor and co-author of the first edition of the International Dictionary of Aids to Marine Navigation, published by IALA in English, French, German and Spanish. Away from work he was a life-long photographer, ciné film enthusiast, movie buff and connoisseur of music, art and architecture.

Dr Nick Ward writes: *'Laury Reynolds was a modest and approachable person who carried out outstanding work on the science behind aids to navigation, much of it still in use today. Through his involvement with IALA, he ensured that his scientific knowledge and expertise benefited the lighthouse world and ultimately enhanced the safety of navigation.'*

Captain Douglas Leicester JP

Died 8 January 2015 aged 94, retired Trinity House Ruler of Pilots, Gravesend. Richard Dobb *recalls: 'From memory, Douglas must have been appointed Ruler in about 1962 and I joined a year afterwards, working at Tower Hill. We became colleagues a few years later when I was seconded to the Royal Terrace Pier, Gravesend, on work connected with the pooling of pilots' earnings. I consider that as Ruler of Pilots he had a terribly difficult job for there were many differences and it was frequently remarkable how he was able to defuse many highly charged and difficult situations with calm and a good dose of common sense. He soon came to earn the great respect of the warring factions that were the Channel and River Thames pilots, and here he was unique.'* All pilots were self-employed in those days. Douglas Leicester, the last Ruler of Pilots and holder of a title dating back to the 17th century, was kindly but authoritative and always a gentleman to his staff, it was said. In 1988 port pilotage ceased to be the responsibility of Trinity House.