# flash

SUMMER 2016 ISSUE 25

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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 9 June 2016*

Captain Ian McNaught MNM *(Deputy Master)*
Captain Nigel Palmer OBE MNM *(Rental Warden)*
Rear-Admiral David Snelson CB FNI *(Nether Warden)*
Captain Roger Barker FNI
Captain Nigel Hope RD* RNR
Captain Stephen Gobbi JP MA LLB
Commodore Bill Walworth CBE MNM RFA
Commodore Rob Dorey MA RFA
Malcolm Glaister Esq BSc MCSI
Richard Sadler Esq FREng FIMarEST MRINA

Commander Graham Hockley RN *(Secretary)*

## Lighthouse Board *as at 9 June 2016*

Captain Ian McNaught MNM *(Executive Chairman)*
Captain Nigel Palmer OBE MNM
Captain Roger Barker FNI
Commodore Rob Dorey MA RFA
Mrs Dawn Johnson
Professor Peter Matthews CBE
David Ring Esq
Ton Damen Esq

Jon Price Esq *(Secretary)*

# editor's note

MANY THANKS AS ALWAYS TO EVERYONE WHO CONTRIBUTED to the pages of *Flash*; as we move forward and explore new channels for communicating with our various audiences and raising awareness about what we do and why we do it, I'm excited to report that our new website will carry over some of the fascinating content that we present in the pages of our magazine.

The new website (**www.trinityhouse.co.uk**) – launched in April – has proved to be a flexible and easily accessible portal for stakeholders, customers and the wider public to engage with us and get the information or the function they require.

In the same issue that sees us conclude our trawl through historical station Order Books to present a selection of stories and snippets from our past, only a few pages away the reader can delve into the cutting-edge developments in store for the future of aids to navigation; this is just one example of the scope that this organisation tries to communicate, and we are confident you will continue to find it interesting.

We welcome contributions from anyone and we're open to suggestions and feedback. Please get your submissions to me for the next edition of *Flash* by 9 September 2016.

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**COVER IMAGE:** The crew of THV *Galatea*, dwarfed by Type 1 Special Mark Buoys in the background, prepare the ship's workboat for marine operations. *Image by Beeston Media©.*


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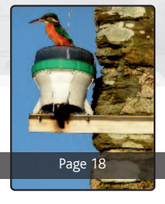
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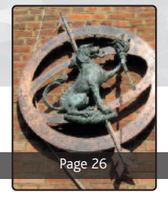
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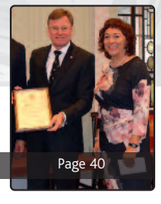
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## INTRODUCTION BY THE EXECUTIVE CHAIRMAN Captain Ian McNaught

AT THE NOVEMBER COURT WE WELCOMED COMMODORE ROB Dorey of the Royal Fleet Auxiliary and Malcolm Glaister from the world of finance who were sworn in firstly as Younger Brethren then as Elder Brethren and Assistants of the Corporation; Rob Dorey is the new Director of Operations and Malcolm Glaister replaces The Rt Hon The Viscount Cobham on the Corporate Board. I have thanked Lord Cobham for his considerable contribution to the Corporation's work and for his support on the several committees on which he sat as well as for his valuable contributions as Chairman of Trinity House Events and as a Non-Executive Director of Trinitas.

At the commencement of the Annual Court Simon Sherrard, Rental Warden to the Corporation, retired from the Corporate Board, and was thanked for his sound counsel and guidance in support of the Corporation's Corporate and Maritime Charities. On Simon Sherrard's retirement as Rental Warden to the Corporation his place was taken by Captain Nigel Palmer, formerly Nether Warden. The new Nether Warden is Rear-Admiral David Snelson.

In May Richard Sadler Younger Brother, former Lloyd's Register Group CEO, was sworn in as an Elder Brother and I wish him well in his new role as an Assistant with particular responsibilities as the Charities' Business Trustee.

In March Her Royal Highness The Princess Royal, our Master, visited Trinity House London to meet the staff to learn more about and discuss their individual roles. The Palace reported that;

***"The Princess was very pleased to meet so many people from every department, and to learn more of the history, and of the day to day workings of Trinity House."***

As with all of these occasions, it serves to highlight the fact that Trinity House has a great story to tell.It was a pleasure to present the Annual Awards in November to dedicated staff for long service, outstanding achievement and in gaining job-related professional qualifications. Additionally we have been able recognise contractors who have given exceptionally effective service to Trinity House. My congratulations again to all.

A busy year lies before us as we continue to move ahead with the Fleet Review. Led by the General Lighthouse Authorities, the Review is to explore and develop greater integrated planning and coordination, assess and test the viability of the commercial market to supplement the core fleet in support of operations, determine the level of commercial work achievable against the necessary level of reserve capacity and have the freedom to explore alternative delivery solutions as they emerge. Our day job of delivering a reliable, efficient and cost effective aids to navigation service must of course continue and remain our key focus.

Now to close I wish you all, ashore and afloat, the very best.

Ian McNaught

# a review of the last ten months at TRINITY HOUSE

## SEPTEMBER 2015

### IMO presentation

At the London headquarters of the International Maritime Organization on 24 September the Deputy Master presented to the organisation for long-term display the unique three-sided Second Order optic from Orfordness Lighthouse as a token of our respect for IMO. The then Secretary General Koji Sekimizu unveiled the optic as a feature of World Maritime Day, a day of presentations to young people from around the world about the wide variety of maritime careers available to them, supported in part by Trinity House.

Photo: ©David Rees

### Lord Mayor's Show

14 November saw the 800th Lord Mayor's Show proceed through the streets of the City of London. A vehicle float carried *TH No1 Boat*, accompanied alongside and on board by staff, Trinity House Cadets and representatives from maritime charities assisted by the Corporation.

The previous day at Guildhall the new Lord Mayor, Alderman Lord Mountevans, a Younger Brother of Trinity House, was presented by the Deputy Master and Commander Graham Hockley, the Secretary, with a Peter Kent print depicting Trinity House activities and showing the new Lord Mayor's coat of arms.

Image © Clive Totman

## NOVEMBER

### Staff Awards 2015

The Trinity House Annual Staff Awards Ceremony took place at Tower Hill on 19 November recognising the achievements of several members of staff and some contractors in another busy and successful year.

Awards were made to 24 members of staff who had completed 20 years' service or more. A further six were recognised for their outstanding individual achievements benefitting Trinity House while nine had achieved job-related professional qualifications in the year 2014/2015.

Finally, two contractors were recognised for their exceptionally effective service to Trinity House. See page 40 for more details.

In the words of Captain Ian McNaught, Executive Chairman: "*It was a pleasure to be able to recognise and celebrate the many achievements this year. Many congratulations to all of the award winners.*"

### Innovation in Maritime Navigation event

A conference with the theme of Innovation in Maritime Navigation was held at Trinity House London on 2 March, hosted by the General Lighthouse Authorities of the UK and Ireland, the Royal Institute of Navigation (RIN) and the Knowledge Transfer Network (KTN). Approximately 80 delegates attended from a cross section of the maritime community.

This event was opened by the Executive Chairman who pointed out that the art of navigation – exercising due care and caution – was as necessary to keep mariners and ships safe at sea today as it had been for centuries.

Rear-Admiral Nick Lambert, chairman of the day, invited delegates to keep in mind that the gathering was intended to address how new technology might be used to make global navigation satellite systems (GNSS) better and more reliable. Here the uniquely difficult maritime environment makes imperative the need for development in the provision of resilient systems. Sessions concerned the mariners' perspective and that of the pilots, reliability of systems and chart information and more, including an industry view of developments and opportunities. To round off the day Rear-Admiral Lambert invited comments from the floor with a view to summarising what had been heard.




## MARCH-APRIL 2016

### Visit of HRH The Master

On 3 March we were privileged to welcome HRH The Master to Trinity House on Tower Hill. During her two hour stay she was introduced to every department, giving staff the opportunity to describe their work for either the General Lighthouse Authority or the Corporate department, which she thoroughly appreciated. Given as a token of appreciation on behalf of the staff, the Deputy Master presented her with a drawing of Trinity House by the artist Peter Kent, signed on the reverse by the headquarters staff.

### Longstone Visitor Centre

At Longstone Lighthouse on 8 April the upgraded visitor centre was reopened, telling the story of Grace Darling and her father William, of the famous *Forfarshire* rescue and the family's life at the lighthouse. The visitor centre also looks at the history of Trinity House and brings visitors up to date on what the maritime charity and General Lighthouse Authority are doing today to carry on the work we began in 1514.

In putting together the new and improved displays we have been assisted in part by the team at the RNLI Grace Darling Museum in Bamburgh; for this we are very grateful and it is expected that the two attractions will complement each other.


## JUNE

Photo: Nichole Lambert-Kelly

### Trinitytide

The 502nd Trinitytide Annual Court was held on 8 June when HRH The Princess Royal was re-elected Master of the Corporation for the ensuing year. Captain Ian McNaught was re-elected Deputy Master. Captain Nigel Palmer and Rear-Admiral David Snelson were 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 in the City of London for the Annual Trinitytide service where the preacher was the Rt Revd Martin Seeley, Bishop of St Edmundsbury and Ipswich.

### HM The Queen's 90th birthday

To celebrate Her Majesty's 90th birthday on 21 April over 1,000 beacons were lit throughout the United Kingdom, Channel Islands, Isle of Man and parts of the Commonwealth.

Beacons were lit outside eleven Trinity House lighthouses and at Trinity Pier, Harwich. Captain Ian McNaught reflected: "*Trinity House has a long-standing relationship with, and an enormous amount of respect for the Royal Family, counting HRH The Princess Royal as our Master, and HRH The Duke of Edinburgh as the Immediate Past Master and their Royal Highnesses the Prince of Wales and the Duke of York as Elder Brethren of the Court; as such, we are very proud to be able to mark this momentous birthday by lighting beacons in some of the nation's most beautiful locations. We at Trinity House wish Her Majesty a very happy birthday!*" Chosen stations were: Longstone; Flamborough Head; North Foreland; Portland Bill; St. Catherine's; Lizard; Lundy South; St. Ann's Head; Bardsey; South Stack and St. Bees.

*Lundy South Lighthouse, Devon.*

Photo: Hamish Beeston.

## **Simon Sherrard** DL *retires as Rental Warden*

At the commencement of this year's Annual Court **Simon Sherrard** stood down as Rental Warden of the Corporation a post he had held since 2014. He was sworn as an Elder Brother in 2001 and elected Nether Warden in 2013. On relinquishing that position he has also retired as a member of the Corporate Board and Trustee of the Charities. He will remain an Elder Brother and member of the Court.

**Commander Graham Hockley**, Secretary to the Corporation paid this tribute:

*'Based on his many years' experience in the worlds of finance, charities and business Simon Sherrard's wise counsel and guidance has been most welcome to the Corporation in enabling it to pursue its chartered aims. In particular as the Business Trustee he has helped keep the Board focused on the central issues and the generation of its income through its properties and investments. He has also given great service as Chairman of the Corporate Pension Trustees' Committee, the Remuneration Committee, and as a member of the Investment and Audit Committee.'*

His years as a trustee saw the Corporation's charitable expenditure increase appreciably and the Corporate Board oversaw many of the events and initiatives that marked the 500th anniversary of the incorporation by Royal Charter in 1514.

Simon Sherrard started his career at Samuel Montagu & Co Ltd, Merchant Bankers, and after seven years moved to Jardine Matheson & Co Ltd in the Far East. In 1985 he joined the Bibby Line Group Ltd, in Liverpool as Managing Director becoming Executive Chairman in 1997.

Previous appointments include chairmanship of the Port of London Authority, the A & P Group Limited and Abacus Syndicates, a Lloyd's Underwriting Agency. He was a director of Lloyd's Register for sixteen years, ending as Deputy Chairman.

Simon was President of the UK Chamber of Shipping in 2000/2001 year and Vice Chairman of the International Chamber of Shipping, until retirement in May 2001 after eight years as UK representative. He was High Sheriff of Cheshire in 2004/2005.

He is a former Trustee of the Council of the Mission to Seafarers, a Freeman of the Company of Watermen and Lightermen, a Trustee of the White Ensign Association, a Council Member of the RNLI and Chairman of the Trustees of the Cornwall Multiple Sclerosis Therapy Centre.

In 1994 he became a Liveryman of the Worshipful Company of Shipwrights, a Member of the Court in 2002, Warden in 2006 and Prime Warden in April 2010.

## Wardens' appointments

On the retirement of Simon Sherrard as Rental Warden to the Corporation at this year's Annual Court his place was taken by Captain Nigel Palmer, previously Nether Warden.

The new Nether Warden will be Rear-Admiral David Snelson. He was elected as an Elder Brother in 2013 and in 2007 was Admitted as a Younger Brother. He is a member of the Corporate Board and is also an Examiner.

### **Captain Nigel Palmer** OBE MNM

He commenced his sea career as a Cadet with the BP Tanker Company in 1967 and served in a variety of ship types prior to attaining command in 1984 of the 25,000 dwt product carrier *British Humber.* Following retirement from BP Shipping in 2004 as Director of Government & Industry he continued to be involved in the shipping industry forming his own company in 2005 to provide general industry marine advice.

He is currently Chairman of the Britannia Steamship Insurance Association (a marine liability insurer or P&I Club) and Chairman of Trustees of the Marine Society & Sea Cadets. He is a Trustee of the Shipwrecked Mariners' Society. He is Trustee and former Chair of the Maritime Advisory Board of the Confidential Hazardous Incident Reporting Programme (CHIRP).

*The Marine Society & Sea Cadets.*

## New Elder Brother – **Richard L Sadler** FREng FIMarEST MRINA

### **Rear-Admiral David Snelson** CB FNI

David Snelson served in the Royal Navy from 1969 to 2006 and his commands included HMS *Ark Royal*. He was Naval Commander for the invasion of Iraq in 2003.

From 2006 to 2011 he served on the Board of the Port of London Authority as Chief Harbour Master. During the same period he was also a specialist advisor to the House of Commons

Defence Committee. From 2012 to 2015 he was a Trustee of the Marine Society & Sea Cadets.

He is currently a non-Executive Director of the Maritime and Coastguard Agency and the Port of Milford Haven. He is also Chairman of Appeal Patrons for Sea Change, a young people's sail training charity using Thames barges. In addition he is a member of the Honourable Company of Master Mariners and a Fellow of the Nautical Institute.

*Sea Change.*

**Richard Sadler** was sworn in as an Elder Brother of the Corporation at the Court of 17 May 2016. He is now a member of the Trinity House Corporate Board.

He was admitted as a Younger Brother in 2014. Born in 1957, he spent time in the Royal Navy as a midshipman before gaining a BSc (Hons) in Naval Architecture in 1979. After a series of posts in engineering he was appointed in 2004 as Director of Asset Management for the Royal Bank of Scotland (Shipping and Offshore Energy division). Here he enhanced the role by developing a risk system for asset, operator and market assessment of globally financed assets.

### At Lloyd's Register

In 2007 he was appointed CEO of Lloyd's Register Group, an organisation which grew in his tenure to a £1.1billion turnover company with 9,500 staff providing compliance and consultancy services to 60,000 global clients in 78 countries. This growth was achieved through technical services in the marine, energy and other sectors including management system certification to mitigate company risks. The group is owned solely by the Lloyd's Register Foundation that exists to protect life, property and the environment and provide public benefit in the areas of research and education. He was instrumental in this governance change and establishing the Foundation as a major source of funding to Education and Research institutions around the world. During his eight years as CEO Lloyd's Register he focused on technology, external representation and ensuring a valued contribution to its clients. In turn the Group established two global technical centres in Southampton and Singapore and reinforced the historic brand value to ensure sustained growth.

### Background

In 2014 he joined the University College London – International Energy Advisory Panel to bring commercial project and market experience in energy production and energy shipping to the academic strategy of the centre.

From 2010 to 2013 he was co-chair of the Government's Marine Industries Council which led to the development of the maritime sector growth strategy, part of the Government's key sector growth plans.

At the request of the Singapore Government he joined the Singapore Energy and Maritime Institute – International Advisory Panel from 2012 to 2014 and assisted in developing the sector strategy and investment plan for Singapore.

He is a Fellow of the Royal Academy of Engineering and of the Institute of Marine Engineering, Science and Technology and a member of the Royal Institution of Naval Architects.

In academia he has been visiting Professor of Dalian Maritime University, visiting Professor in Ship Science at the University of Southampton and holds Honorary Doctorates from the Universities of Newcastle upon Tyne and Southampton. At Newcastle he was a member of the University's Industrial Advisory Board in the School of Marine Science and Technology. He was President of the Welding Institute from 2008 to 2011.

### Current

Richard Sadler was appointed Chairman of Meteo Group in October 2015 to bring sector expertise and strategic skills to help the weather forecasting and risk management company. The same year he was appointed Consultant Advisor to the Foresight Group, a multi-sector shipping, drilling, hospitality and shoe manufacturing company in private ownership, in order to achieve new growth and strategic plans.

### Personal life

Away from industry he is a Trustee of The Gloriana Trust which is a lasting legacy of The Queen's Diamond Jubilee in 2012. The Queen's rowbarge *Gloriana* is an inspiration for national pride, a showcase for traditional British boat-building and craftsmanship, and a means of encouraging people, especially young people, to engage with the River Thames and the sport of rowing.

# Resilient PNT – *If not eLoran, then what?*

By **Dr Nick Ward** C Eng FRIN AFNI
GLA Research Director.

**ENGINEERING REVIEW-1**

IT IS GENERALLY AGREED THAT RESILIENT PNT (Positioning, Navigation & Timing) is essential for the maritime sector. E-navigation and newer developments, such as sea traffic management and autonomous ships will not be viable in the long-term, without totally dependable positioning and communications. However, there is little consensus on how to achieve resilience. eLoran has been demonstrated as an effective terrestrial complement to GNSS, but some European countries have switched off their Loran transmitting stations, which are essential to the future provision of eLoran.

## Need for resilience

Shipping, in common with other transport sectors and wider industry has become heavily dependent for positioning and timing on Global Navigation Satellite Systems, in particular GPS. By their nature these satellite systems provide an extremely weak signal at the Earth's surface. These signals are vulnerable to disruption, by natural causes, such as space weather, accidental interference and deliberate jamming. Since all GNSS share the same frequency bands and low power, having more than one system provides limited benefit. Resilience can only be achieved by providing complementary, but dissimilar systems.

## Alternatives to GNSS

The options include high power terrestrial systems operating at lower frequencies, radar and non-radio systems. eLoran is the most advanced of the terrestrial alternatives. It has been shown to meet IMO requirements for the port and harbour approach phases, as well as coastal navigation. It relies on very high power, low frequency transmissions, with long ranges. Another option currently being explored is R-mode, ranging on existing transmitters, in particular medium frequency radio beacons and AIS (VHF). Radar positioning has been evaluated and shown to provide good accuracy, but only at limited ranges. Non-radio alternatives include inertial systems, which can also give good accuracy, but for limited periods, so they are useful for stabilising output from other systems and coping with brief outages, but do not provide long-term resilience.

## eLoran status

Initial Operational Capability (IOC) of eLoran was established for seven major ports on the East coast of the UK in 2014. This gave positioning accuracies of 10 metres (95%) in the ports and their approaches, with accuracies in the region of 50 m along the coasts. This meets the requirements set out in IMO Resolution A.1046(27) for a World Wide Radio Navigation System. However, moving to Full Operational Capability (FOC) depended on the continuation of transmissions from the other European stations, in France, Norway, Germany and the Faeroes. Therefore the termination of transmissions from these stations puts the planned FOC for the UK in doubt. Meanwhile the US appears to be moving towards reversing its decision to close down Loran transmissions, in order to provide a backup to GPS, initially for timing, but eventually for positioning too.

Loran systems also exist in other parts of the world, notably the People's Republic of China, the Republic of Korea, Russia (Chayka), India and Saudi Arabia. A contract has been awarded for development of eLoran in the Republic of Korea and proposals to modernise systems to provide eLoran are at different stages of development in other countries.

## R-mode

Ranging mode has been demonstrated on an MF beacon in the Netherlands and test results are promising. However, considerable work is still needed on technical development, frequency and coverage planning and regulatory arrangements. The advantages of this option would be its world-wide applicability, although coverage would depend on station availability and geometry. Ranging on AIS transmissions has yet to be demonstrated and there may be fundamental limitations on accuracy and range. Given a suitable multi-system receiver, ranging signals from different sources could be combined, together with those from Loran, to provide a much more widespread service.

## Radar positioning

Trials carried out in the EfficienSea and ACCSEAS projects demonstrated that good accuracies could be provided using range and bearing from a specially designed, digital radar, in conjunction with enhanced radar beacons on shore.

The radar beacon or racon signals were modulated with information on their identity and/or location to allow the processing in the radar to produce a fix. Usable ranges were limited to about ten miles from the coast and the number of enhanced racons required would be large. However, the major obstacle would be the need to replace or modify all the existing radars on ships, making this a difficult and very long-term solution.

However, another approach being explored is the use of 'map matching' using added processing in the radar to recognise the coastline and provide a position from the map developed. This could be an automatic 'learning' process, using other sensors as references. There is considerable technical development work required and there would still need to be some modification or added equipment to existing radars.

## Non-radionavigation options

Inertial systems, using gyroscopes and accelerometers, have advanced in recent years, but mainly at the lower end of the market, with micro-electromechanical systems (MEMS) devices providing low-cost sensors for land vehicle and personal navigation. At the higher end, navigation grade inertial devices remain expensive and still do not have the long-term stability needed for a full back-up to GNSS. Some experts believe that there are fundamental barriers to such an application, but in any case it appears to be some way in the future. Another solution for the future could be quantum devices, tracking the perturbation of atoms using lasers, on which considerable research effort is being expended.

The use of visual marks is another non-radio possibility and a working prototype of a relatively low-cost ePelorus has been produced and demonstrated. This makes use of existing visual aids to navigation and other landmarks, in conjunction with an electronic chart to establish the user's position, using a self-contained, onboard device. It is of course limited by visibility and the availability of suitable marks.

## Future direction

It seems unlikely that a worldwide consensus can be reached on a single backup system for GNSS, however, agreement on the need for resilience seems to be growing stronger. One relevant development is a new performance standard agreed in IMO for a multi-system receiver. This would use whatever positioning signals are available – multi GNSS, or terrestrial – to arrive at the best position, carrying out integrity checks to ensure that erroneous information does not degrade the solution. This could be the most practical approach to real resilience in positioning and timing.







Images: ©Ambrose Greenway

*It is little appreciated that the bridge window is regarded as a navigational aid. In the words of Captain Ian McNaught, Executive Chairman, writing in MAIB Safety Digest 1/2016: "Please look out of it, get out of your chair regularly and check the view out of the window. Doing so will give you the best view of the situation around you and that feeling of spacial and situational awareness that will help you make the best decisions to ensure a safe passage, backed up by the information on screen."*



Image: ©IMO

*International Maritime Organization Offices, Albert Embankment, London.*

# Wave Loading on Rock Lighthouses

By **Dr Alison Raby,**
Associate Professor (Reader) in Coastal Engineering, School of Marine Science and Engineering Faculty of Science and Engineering, Plymouth University.

**ENGINEERING REVIEW-2**

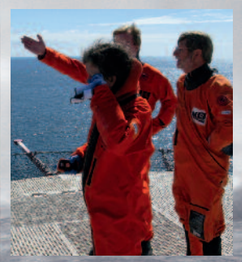
HOW DO ROCK LIGHTHOUSES BEHAVE WHEN THEY ARE POUNDED by giant waves? Anecdotal evidence from the archives and contemporary observations by Trinity House staff suggest particular responses, but to date very few measurements have been made. All that changed in 2013/14 when the Eddystone Lighthouse was instrumented to record the wave runup and subsequent motion response.

***Above and inset:*** *Ruggedised case containing video monitoring hardware fixed to the helipad support structure.*
*Photos: ©Tony Tapp.*

***Left:*** *Canoeists at Eddystone.*

***Lower left and far left:*** *Initial discussions during the reconnaissance mission with Chief Civil Engineer Ron Blakeley.*

***Main Picture:*** *Storm lashed Longships lighthouse.*
*Image: © Tim Stevens.*



The frustration of having no wave impact data on which to base lighthouse designs was expressed by Alan Stevenson in 1848:

"*No systematic or intelligible attempt has been made practically to measure the force of the wave, so as to furnish the Engineer with a constant to guide him in his attempts to oppose the inroads of the ocean.*"

In fact Alan's brother Thomas invented an instrument – the Marine Dynamometer – to record impact pressures. It was deployed on both Bell Rock and Skerryvore Lighthouses and provides rare measurements of impact pressures. But of the motion response of these towers, nothing is available. Anecdotal evidence includes a "*loud booming noise*", "*chinking of glasses in cupboards*", "*oscillation…similar to minor earthquake*".

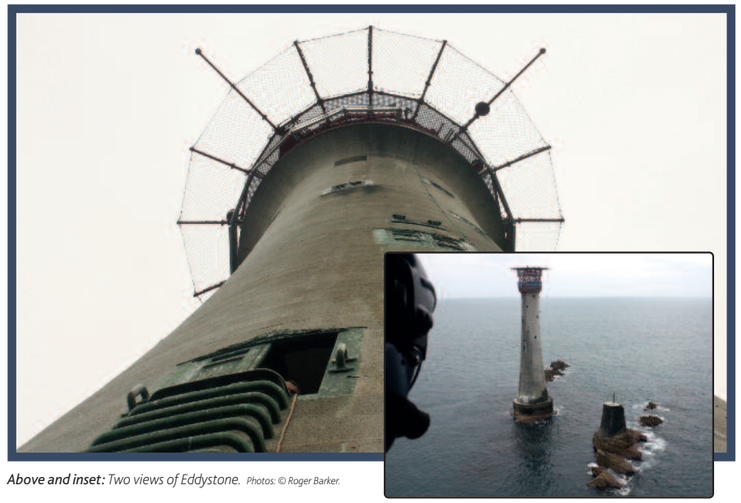
But what is actually happening to the structure? A pilot project on the Eddystone Lighthouse, hoped to reveal some of the secrets.

Trinity House teamed up with Plymouth University who have been at the forefront of field-based wave loading on structures since the 1980s, contributing to the BS6349 Part 7 Design Guidance for Breakwaters and leading the design of novel wave impact pressure-aeration units on Alderney Breakwater.

Eddystone Lighthouse, having line of sight to the university campus, was deemed to be a perfect candidate for such an investigation. There would be severe constraints to traditional monitoring methods due to its remote location, low power availability and the hostile environment. Rather than the standard methods of determining wave impacts by fixing pressure transducers to the outside, a pragmatic approach was devised comprising video cameras and geophones.

Four video cameras were fixed to the helipad supporting structure, arranged to provide views around the entire perimeter.

Two of the cameras focused on the prevailing southwesterly wave direction – one near-field and one far-field. The cameras were remotely controlled via a wireless bridge to the university, enabling them to be activated when nearby buoys indicated significant wave activity. Furthermore, when waves were detected on the cylindrical based of the tower, the acquisition speed increased from 1 fps to 5 fps. Meanwhile, two geophone units were placed within the tower itself. More often used for seismic applications, they would provide motion response information. They were battery-powered, sending activity alerts via the GSM mobile phone network when the tower motions exceeded a certain threshold, controlled remotely.



***Above and inset:*** *Two views of Eddystone.* *Photos: © Roger Barker.*

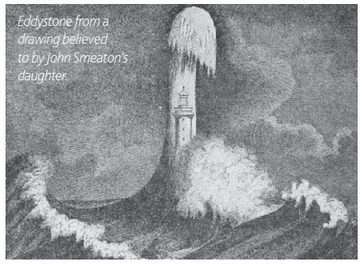
Deployment was undertaken by university technicians in the summer of 2013. October 2013 storms came and went, with no alerts being sent from the geophone systems (causing a little concern about the effectiveness of the method). However, just before Christmas that year, the first of a system of twelve storms rolled in and around 3,000 individual motion events were recorded over a couple of months.

Short-duration velocity-time histories obtained from the geophones could be integrated to obtain displacements of the tower (which were never more than a fraction of a millimetre) and differentiated to obtain accelerations (the largest of which were comparable to earthquake events). Comparisons with video images led to the identification of different wave impact types, governed by breaking distance from the tower.

***Video data revealed details of waves that were responsible for the largest tower motions. They also showed that for the largest events the wave ran up a considerable vertical distance with spray completely obscuring the video cameras at its highest.***

Also, transforming the geophone data into the frequency domain enabled modal information on the tower response to be obtained.

The response of the tower was found to be affected by the wave height and period and complicated by the instantaneous water level, a wave being unable to hit the tower in its most energetic unbroken form unless there is sufficient water on which to ride. The angle of the incoming wave was also a big factor at the Eddystone due to the specific bathymetry on which it is built.



*Eddystone from a drawing believed to by John Smeaton's daughter.*

In parallel with the field monitoring a Finite Element Model of the Eddystone Lighthouse was constructed. This would be validated by the geophone data and provide an insight into the structural behaviour at locations other than those where the geophone systems were located. Data for the lighthouse materials were obtained from archive sources and the De Lank quarry in north Cornwall from where much of the granite was sourced.

With the model successfully validated, agreeing with the fundamental frequency of the tower to within a few percent, an estimation of the stability of the Eddystone was undertaken. Wave loads were based upon methods provided in ISO 21650 Actions from wave and currents on coastal structures using wave buoy data and video images. Analysis suggests that, as expected, the Eddystone Lighthouse is stable for material failure, sliding and overturning. Even without a thorough knowledge of the wave load in their design, the great engineers of the 19th century built structures capable of withstanding these harsh conditions.

Next steps are to take methodologies and findings from this pilot study to more exposed lighthouses of the General Lighthouse Authorities (GLAs). Funding for project STORMLAMP (STructural behaviour Of Rock Mounted Lighthouses At the Mercy of imPulsive waves) has been secured from the UK Engineering and Physical Sciences Research Council and will commence this year (2016).

It will further develop combined physical and numerical modelling for both wave loading and structural behaviour that will be validated by direct measurements of full-scale performance. The tools and extended full-scale observations will provide the means for the GLAs to manage lighthouse structural condition and safeguard their role.

# Innovation in Maritime Navigation

By **Neil Jones,**
PR and Records Manager,
Trinity House.

A conference at Trinity House London on 2 March 2016, hosted by the General Lighthouse Authorities of the UK and Ireland, the Royal Institute of Navigation and the Knowledge Transfer Network.

***"As many Ships are lost by Ignorance and Negligence, as by stress of Weather, so a Master of a Ship hath a very great Charge, and ought to be a sober Man, as well as skilful Mariner: All Helps of Art, Care and Circumspection are to be used by him, that the Lives of Mariners (the most useful of their Majesties Subjects at this Juncture) and the Fortunes of honest Merchants under his Care, may be preserved."***

***Top:*** *Captain Ian McNaught, Executive Chairman addressed the delegates at the opening of the event.*

***Above:*** *Captain Roger Barker, Director of Navigational Requirements, presented examples of charting/ECDIS weaknesses.*

The conference was opened by Executive Chairman Captain Ian McNaught reading the extract above from Younger Brother Greenville Collins' Preface to his *Great Britain's Coasting Pilot*, published in 1693 and dedicated to the Master, Wardens and Assistants of Trinity House; he pointed out that the same art, care and circumspection – if not more so – were required to keep mariners and ships safe at sea today. After some opening remarks from Captain Peter Chapman-Andrews, Director of RIN and Mr. Bob Cockshott on behalf of the KTN, Rear-Admiral Nick Lambert invited the delegates to keep in mind that the day was intended to address how new technology might be used to make GNSS better and more reliable; the uniquely difficult maritime environment makes imperative the need for development in the provision of resilient systems, and the marine user community needs to address the difference in outlook between the new generation of 'digital natives' and the present generation of practitioners and those involved in preparing requirements and standards, who might be termed the 'transitional generation'.

## Mariners' perspective

Speaking first was Captain Robert McCabe, President of the Nautical Institute, on the impact of modern systems on the conduct of ships. He described the mariner's requirement for systems as being compact, always-available and reliable, and expressed a concern that 'machine centred automation dulls situational awareness'

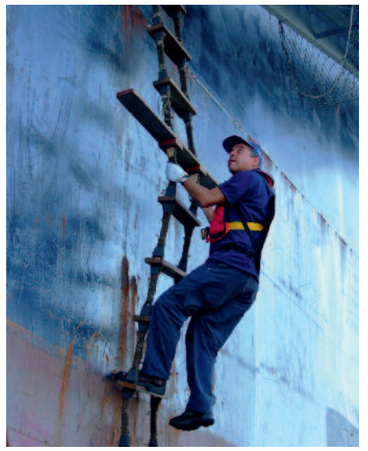
## Pilots' perspective

Nick Cutmore, Secretary General of the International Maritime Pilots' Association, argued that the pilot continues to depend on the utilisation of a spectrum of technologies that includes aids to navigation, varied displays, Positioning, Navigation and Timing (PNT resilience, Portable Pilotage Units (PPUs) and port terrestrial positioning systems.

***Inset left:*** *Art, care and circumspection remain required to keep mariners and ships safe at sea today.*
*Photo: ©Simon Gaskin / IAIN.*

***Main Picture:*** *HMS* Dragon; *Andrew Middleton described inertial devices. His organization, Defence Science and Technology Laboratory, announced later in March that it is seeking suppliers to help build and sustain UK maritime science and technology expertise.*
*Photo: ©MOD.*





***Far left:*** *tests of bridge systems highlight their vulnerability to cyber-attack.*

***Left:*** *the speaker from IMPA drew attention to the major challenges presented by piloting and berthing in the confines of modern ports.*

## Trustworthiness of PNT and chart information

Captain Roger Barker, Director of Navigational Requirements at Trinity House, presented examples of charting/ECDIS weaknesses, wherein vessel bridge teams were courting disaster by not keeping up to date their navigation data; discrepancies in how teams handle changes to paper and ECDIS navigation information (such as carriage requirements and passage planning) meant that the need for physical aids to navigation is as vital as ever.

## Is inertial integration the answer?

Professor Terry Moore of the University of Nottingham gave an overview of the range of primary Global Navigation Satellite Systems now operational (Global: GPS, GLONASS, Galileo, BeiDou and Regional: QZSS, IRNSS) together with the main Space Based Augmentation Systems (EGNOS, WAAS, MSAS, GAGAN, SDCM). He also summarised the development of Inertial Navigation Systems, which are based on a set of three gyros, three accelerometers and three axes contained within an Inertial Measurement Unit (IMU).

## Diversity in integrated navigation

Dr Paul Groves of University College London asserted that while many GNSS problems can be mitigated by utilising the multiple constellations now available, the challenges of jamming and multi-frequency can only be solved by other techniques; he outlined a variety of other techniques and their respective errors and introduced some possible positioning systems alternative to GNSS.

## Opportunistic radio positioning

Dr Ramsey Faragher of Focal Point Positioning introduced the concept of making use of radio signals that are not intended to be used for positioning. He looked at the various pros and cons of various radio frequencies used for PNT, including piggybacking on existing safety-critical systems as well as television and DAB radio signals, concluding that there was no one perfect combination.

## R-mode & Radar positioning

Dr Paul Williams, speaking on behalf of the General Lighthouse Authorities, remarked upon the importance of international consensus in the ongoing search for Maritime Resilient PNT; as an alternative to eLoran he posited the concepts of R-Mode (on IALA DGPS and AIS) and Radar Absolute Positioning. R-Mode, using IALA MF DGPS radio beacons to provide PNT and data, may utilise the quite extensive background of eLoran research and development already built up by the GLAs. He also briefly presented a roadmap, under development within IALA, on the technical and political development of R-Mode and highlighted the need to raise awareness at the level of decision makers in order to facilitate international consensus on the adoption of the system.

## Training of end users in GNSS reliability

Mark Broster of ECDIS Ltd. played footage from a head-mounted camera of a bridge team member in a simulation of a technologically advanced bridge, as an example of how a "digital migrant" (someone taught using analogue methods) responds to a primarily-digital bridge environment. This highlighted the importance of managing seafarer training to accommodate the additional layer of data that needs to be processed properly. He also broached the effects of cybercrime on a modern tech-dependent bridge.

## Local positioning systems in support of Dynamic Positioning platforms

Dave Sanderson of Guidance Marine introduced some of the positioning systems developed by his company to help improve safety of vessel docking, similar to those used in self-driving cars.

## Quantum sensors for Position, Navigation and Timing

Andrew Middleton described the MOD's attempts to investigate the potential of new perspectives in physics – specifically quantum theory – to solve positioning challenges faced by the Ministry in the precision warfare arena. He also looked at denial-of-service scenarios in the likely event of intentional disruption to positioning systems in any future conflict. Although theoretical at this stage, the MOD's target was to see inertial navigation equipment reduce drift from 1km a day to 1 metre a month using quantum gyros and accelerometers and laser cooling.

## Flexible Digital Navigation

Lt-Cdr. Adam Egeland-Jensen from the Royal Navy's Navigation Training Unit summarised their approach to the transition from navigation on paper charts to navigation using ECDIS.

## Industry view of developments and opportunities

Sean McCarthy (Satellite Applications Catapult) explained that the Satellite Catapult was concerned with encouraging growth in the UK's space sector, exploring intelligent transport, the blue economy and sustainable living; the uses for GNSS, he said, went far beyond just the maritime sector.

## Conclusion

To round off the day Rear-Admiral Lambert invited comments from the floor with a view to summarising what had been heard. The comments reiterated that there are many alternative navigation systems on the market; that awareness of GNSS vulnerability is growing; there are opportunities for cross-sector (especially aviation and maritime) exchange of lessons identified; as unmanned vessels look set to become a reality, what will the seafarer of the future need?

# E-navigation – *Where is it going?*

By **Dr Nick Ward** CEng FRIN AFNI GLA Research Director *and* **Dr Paul Williams,** CEng BSc(Hons) FRINGLA R&RNAV Principal Development Engineer.

E-NAVIGATION IS AN INTERNATIONAL MARITIME ORGANIZATION (IMO) initiative for future, digital navigation in the maritime sector. It was conceived about ten years ago following an input to IMO's Maritime Safety Committee from several leading maritime nations. This highlighted a clear need to equip the master of a vessel, and those responsible for the safety of shipping ashore, with modern, proven tools to make marine navigation and communications more reliable and thereby reduce errors.

Key objectives of e-navigation include: safe and secure navigation of vessels, facilitating communications, including data exchange between vessels and shore, integration and presentation of information onboard and ashore to maximise navigation safety benefits and minimise risk of confusion, as demonstrated in projects such as Mona Lisa 2.0.

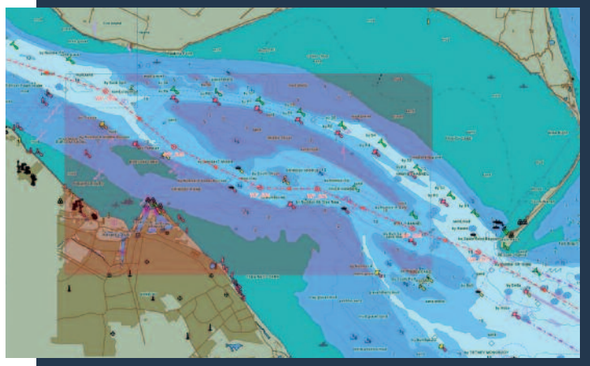
## Progress in IMO

The IMO Maritime Safety Committee (MSC), has developed and approved (in November 2014) an e-navigation Strategy Implementation Plan (SIP) to be implemented during 2015-19. Four work programmes are planned for this period covering:

- Revised performance standards for Integrated Navigation Systems relating to the harmonisation of bridge design and display of information;
- Guidelines for the harmonised display of navigation information received via communications equipment;
- Guidelines on standardised modes of operation (referred to as S-mode); and
- Revised general requirements for electronic navigational aids relating to 'Built-In Integrity Testing' for navigation equipment.

A further work item on Maritime Service Portfolios (MSP) was deferred until MSC 96 (May 2016). MSP have been identified as the means of providing electronic information in a harmonised way between shore and ships. This output proposes to harmonise the format, structure and communication channels, functional and physical links, and message formats used for exchange of that information. The input to MSC 96, supported by many national members and international organisations, should lead to an MSC Resolution providing general guidance to international organisations and service providers to develop MSP in a coordinated and harmonised manner.

In the long term and for complete harmonisation of MSP and their display on board, it may be necessary to revise the requirements contained in SOLAS Chapter IV and V and some of the supporting performance standards for the relevant equipment.


***Top left:*** *A typical Dover Strait AIS feed.*

***Above:*** *Delegates at the IALA Gothenburg seminar on Maritime Digital Infrastructure and Test Beds.*

***Above:*** *The racon in question is between 9 and 10 o'clock (3 dashes). There are two other racons visible (long dashes) near the bottom and right-hand edge of the display. The green line is the Electronic Bearing line (EBL), which is set by the user. The vessel's position is the dashed circle at the origin of the EBL. The target above it is an AIS response from another vessel*

***Above:*** *E-navigation services, such as routeing guidance and no-go areas shown in the approaches to the Humber.*

## Progress in IALA

At the 17th and 18th Sessions of the IALA* e-navigation Committee (ENAV) in October 2015 and March 2016 work continued on the development of standards, communication and navigation systems, Maritime Service Portfolios and product specifications for data exchange.

In December 2015 IALA held a Seminar on Maritime Digital Infrastructure and Test Beds in Gothenburg. The conclusions were:

1. Adoption of e-navigation and use of digital infrastructure depends on sound business cases with clear tangible benefits.
2. IALA should consider establishing a collaboration forum across the maritime domain including other IGO, NGO and industry, to ensure harmonious implementation of e-navigation.
3. There is merit in local and regional implementation as a means to obtain global acceptance of e-navigation solutions
4. A coordinated, decentralized approach could be used for information sharing and service interaction between different domains.
5. The Maritime Architecture Framework can be useful for visualising different perspectives of e-navigation and their inter-relationships in the maritime domain.
6. There is a compelling need for universal identification of actors and information objects etc. to enable interoperability.
7. Cyber security issues need to be addressed.
8. IALA ENAV could consider hypothesis driven validation methodology when assessing test bed results
9. Increased visibility of themes being addressed in test beds and establishment of Special Interest Groups may enhance collaboration

A workshop is taking place in May 2016 in Lisbon on *Shore-based Maritime Services from Theory to Practical Use: Who Will Do What When.* This is expected to move the MSP development process forward.

## Projects & Test Beds

A repository of test beds is maintained on e-navigation.net and IALA encourages those establishing new test beds to provide information about them on that site. As part of its contribution to the EU Horizon 2020 Project EfficienSea 2, IALA is establishing links between that project and all other relevant test beds, particularly those developing e-navigation applications.

## e-navigation communications

Two fundamental components are required for e-navigation to work. Resilient PNT (Positioning, Navigation and Timing), but dependable communications are also essential. Automated reporting, route exchange, maritime safety information, virtual Aids to Navigation – almost every e-navigation solution relies on communications. A recent report produced by the General Lighthouse Authorities and provided as an input to IALA, showed that new systems such as the VHF Data Exchange System (VDES) and Navigation Data (NAVDAT) had important roles to play in many e-navigation applications. A few applications demand very high bandwidth and would benefit from broadband via satellite, but most requirements can be met by VDES and NAVDAT, which use available maritime VHF and MF channels, respectively. The use of satellite (VSAT) based broadband is expanding, with the current number of terminals deployed rising from 20,000 today to a projected 40,000 terminals by 2020. This expansion of use is being driven by the mariner's requirement to be online all the time, particularly for infotainment and social media applications.

## Future Direction

It seems likely that the ground work for implementation of e-navigation will continue in IMO, while the development and definition of MSP is progressed in parallel by IALA. Applications and solutions will be tested and demonstrated in the various test bed projects and those that offer real benefits to mariners, pilots, ship operators, ports and other stakeholders will be adopted and standardised. So e-navigation will be realised by a process of user selection, rather than top-down imposition.

*A Tideland Sea Beacon 2 System 6 radar beacon or racon being carried by Dr. Jan Šafář, R&RNAV Development Engineer. This unit has been modified to provide data on location, but that is not visible.*

*International Association of Marine Aids to Navigation and Lighthouse Authorities.

# Trinity House Support Vessel Service 2015

By **Captain Simon Robinson**
Senior Manager, Marine Projects
Trinity House Lighthouse Service,
Younger Brother.

For the Trinity House fleet, 2015 while relatively routine in many respects, still managed to produce a number of interesting and unusual events.

The basic operational output figures do not make exciting reading:

- Routine servicing of 445 buoys
- 46 lightvessel tows (some very short)
- 93 maintenance visits to lightvessels and lightfloats
- 32 support visits to lighthouses (the majority of which involved joint operations with the service helicopter)
- 25 maintenance visits to beacons
- 55 hydrographic surveys
- 85 casualty rectification visits to various aids to navigation
- 663 local lights inspections.
- In addition the ships carried out work on a commercial basis for other authorities on 241 occasions including 176 buoy maintenance operations.
- In progressing all the above, our three ships – *Patricia, Galatea* and *Alert* – steamed a total of 44,594 nautical miles, burning around 2,304 tonnes of marine gas oil in the process.

These statistics do not tell the whole story. Over the course of any year our ships tend to become involved in various other events and operations. A quick trawl through the respective log books has unearthed some that took place in 2015 and are set out below.

### THV *Patricia*

- In March 2015 *Patricia* underwent her routine dry docking in Hull – this was her seventh five-year special docking – the statutory certificates were all renewed and she is certificated through to 2020.
- Support was provided to the Northern Lighthouse Board (NLB) to enable NLV *Pharos* to carry out lucrative commercial work to the south of Ireland. This was a positive example of Tri-GLA co-operation enabling the most suitable vessel to be released for commercial work while ensuring that core business carried on uninterrupted. After spending some time catching up with NLV *Pole Star* in order to borrow the necessary local charts *Patricia* rendezvoused with the NLB helicopter at Ailsa Craig and Lady Isle Lighthouses to deliver building materials and stores.
- Age notwithstanding, during a quiet summer Sunday passage from Scillies to Lundy *Patricia* was the youngest ship seen, *Marco Polo* (1965), *Mair* (1977), *Scillionian III* (1977), *Waverley* (1948), *Oldenburg* (1958) all of which were already working ships when *Patricia* was delivered into service in 1982.
- During the summer, following work in the Channel Isles, *Patricia*, assisted by a sympathetic tidal stream managed 18.1 knots through the Alderney Race – believed to be her best.
- Carrying out local light inspections from ship's boat at Teignmouth some difficulty was experienced in finding one of the light structures – it was finally located in the garden of the Jolly Sailor pub – unfortunately the time of day (early morning) prevented a more thorough inspection of the site being undertaken.
- This was a year of change for *Patricia*. After 38 years with Trinity House, the last 13 of which were spent in command of *Patricia*, Captain Trevor Dann retired, much missed by his colleagues and the many passengers who timed their trips in *Patricia* to coincide with Trevor's on-duty periods. Trevor's place has been taken by Captain Richard Eggleton, who became the first Trinity House Captain recruited from outside the service. Among Richard's contacts is a close association with RNLI – this recently resulted in an impromptu combined emergency exercise with the Bembridge Lifeboat while *Patricia* was working in the Solent.

### THV *Galatea*

- The year started with a requirement to place wreck marking buoys close west of the car carrier *Hoegh Osaka* which stranded on the Bramble Bank on her way out of Southampton.
- A BBC film crew joined *Galatea* in March 2015 to film series two of the *Channel Patrol* documentary – this was shown on weekday mornings later in the year.
- In June the same year *Galatea*, with HRH The Master and HRH The Immediate Past Master embarked, represented the Corporation at the 200th Anniversary of the Royal Yacht Squadron at Cowes.
- In August *Galatea* also provided support to the NLB when their vessel *Pharos* was forced to undergo emergency repairs. This involved working at a number of NLB lighthouses in conjunction with the NLB service helicopter, and a transit around the north of Scotland before resuming Trinity House work at Longstone Lighthouse – this is certainly the first time in recent memory that a Trinity

➥ *Continued on page 16.*


***Above:*** *TH* No 1 Boat *at the Royal Yacht Squadron 200th anniversary celebrations, Cowes Castle.*

***Left:*** *On 21 March, THV* Galatea *conducted routine checks on the lightfloat on handover to Mersey Docks and Harbour Company where the BAR Light Float is now classed as a local Aid to Navigation.*

*Photo: © Rob Dorey.*

*THV* Patricia *at Oban.*

***Main picture below:*** *Pot of gold astern,* Galatea.

# *Trinity House Support Vessel Service 2015*

➥ *Continued from page 15.*

House vessel has circumnavigated the British Isles.

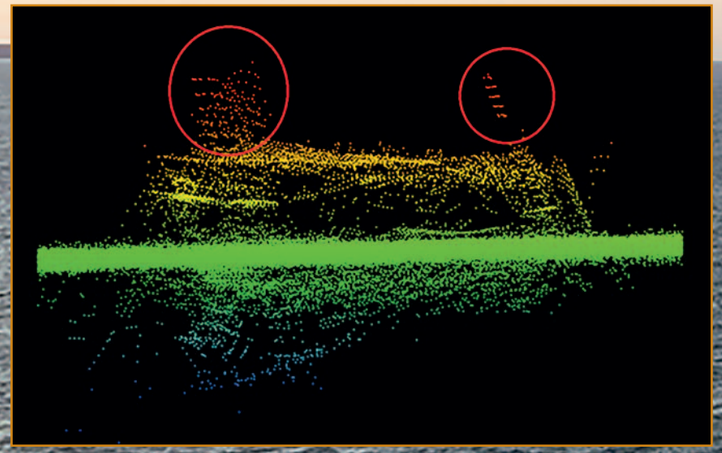
- Longstone Lighthouse figured a number of times in *Galatea*'s programme for 2015 – a major modernisation of the station was undertaken, *Galatea* was involved in the mobilisation and demob phases – this was high intensity work with more than 200 underslung loads being transferred from ship to lighthouse via helicopter in less than two days on each occasion. On completion of the works the Examiners' Viewing Trials to confirm the effectiveness of the new light were conducted from *Galatea*, after which the ship removed the lightvessel which had provided a temporary light while the upgrade was being carried out. The tow back to Harwich was hampered by bad weather and at one point *Galatea* was making a pedestrian 2 knots with the engines at full ahead.
- Seventeen Type 2 buoys were loaded on to *Galatea* in support of commercial operations at Duddon Sands – this is a record for the ship and therefore for Trinity House.

## THV *Alert*

- The year started with a requirement to search for the potentially dangerous wreck of the lost fishing vessel *Morgenster* in the Dover Strait.
- A second ECDIS (electronic chart system) was fitted with the intention of *Alert* becoming the first Trinity House vessel (or indeed of any GLA vessel) to abandon paper charts and navigate purely electronically. This is expected to be achieved in 2016 with *Alert* becoming the trail blazer for other GLA ships in this respect.
- In April 2015 HRH The Master was embarked in Dover and taken to sea to view the revised arrangements for marking the Varne Bank in the Dover Strait.
- In June the same year *Alert* was tasked with searching for the wreck of a houseboat off Beachy Head. Although the boat had sunk, and was later located using *Alert*'s multibeam echo-sounder, one piece of ship's equipment had stayed afloat – a wooden hot-tub which *Alert* managed to recover at the request of Dover Coastguard.

It should also be mentioned that 2015 was also a sad year for the SVS. The tragic loss of Captain John Mallett, who died on the bridge of *Galatea* was referred to in an earlier edition of this publication; but John's funeral was only one of a seeming endless procession of funerals of serving and retired SVS staff in 2015. As well as John, Captain Ray Prain, Second Engineer Officer Don Gaythorpe, Chief Engineer Ken Curtis and Captain John Barnes, were among the 15 who crossed the bar last year. With the exception of John Mallett all of them had enjoyed a period of retirement, however, one of the sadder moments of the year was the loss of Commander Roger Swinney, who lost his battle against cancer in November, less than a year after being forced to retire through ill health.

2016 promises to be at least as eventful as 2015, having already started with some of the worst weather that we have seen in years.



***Top:*** *Multibeam image by* Alert *of the sunken house boat, a potential danger to navigation in the Dover Strait.*

***Above:*** *The hot-tub being secured by ship's staff from* Alert *after it had become free of the stricken houseboat off Beachy Head.*

***Main picture:*** *THV* Galatea *towing the lightvessel from its station established while engineering works were underway at Longstone Lighthouse.*

***Top right:*** *The Trinity House helicopter working from* Galatea *at Longstone lighthouse.*

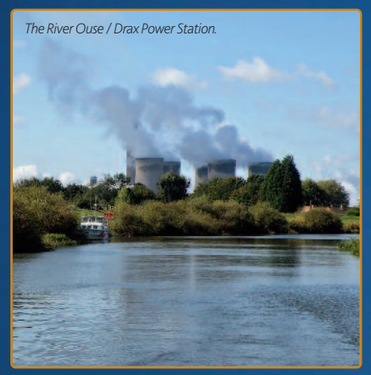
***Middle:*** *From* Alert *an image of the* Morgenster *wreck on the seabed.*

***Lower:*** *THV* Galatea *with a deck full of buoys at Duddon Sands, off Walney Island, Cumbria.*

# Places, People and Problems: *All in a Day's Work*

By **Captain Graeme Proctor**
Inspector of Seamarks,
Trinity House.


*The author.*


*The River Ouse / Drax Power Station.*

MANY WILL BE AWARE OF THE ROLE, BUT FEW WILL HAVE MET THE Inspector of Seamarks. I have a desk within the Navigation Directorate at Trinity House, London, but my days are spent on the road visiting all the local lighthouse authorities, ports, harbours, rivers, estuaries and beaches taking in every nook and cranny of our shores, from Northumberland all the way around the coast of England and Wales to Cumbria, including trips offshore to all the oil rigs of the southern North Sea and the ever growing numbers of windfarms. Every year over 11,000 individual aids to navigation are inspected, taking in over 21,000 miles of driving and 35 weeks on the road.

To achieve this task, I find myself engaging with a wonderfully wide and diverse range of people, embarking on all forms of transport to view aids to navigation, finding myself in extremely odd places and on more than one occasion raising the suspicions of the long arm of the law.

Like painting the Forth Bridge, no sooner have I finished my year's programme – the data collected and collated by the Navigation Directorate, the annual report written – then I begin planning my next year's travel. With my diary programmed and the previous year's report on the Director of Navigational Requirements' desk, come February I am on the road again.

I have collected together a few of the interesting and more unusual things that occur during my travels to highlight the diverse, the unusual and the odd with which the Inspector of Seamarks finds himself dealing.

## Fire fighting on the River Dart

Following an early breakfast I am down on the jetty in front of the Dart Harbour Commissioners Office at 0730, ready to catch the rising tide for the day's inspection of the River Dart.

With my inspection papers at the ready, we set off and begin the process reviewing and commenting on the navigation marks in the river. As we arrive up in Totnes some two hours later, I quietly reflect that we will be back in Dartmouth in good time for me to get the ferry and drive to Brixham for my next meeting that day. But as we set off on the return journey, clouds of smoke are seen billowing from the quay ahead of us, a small boat has just launched, only for his engine to burst into flames; suddenly our trip is turned into an emergency response as the Harbour Master shifts into an 'action man' role, coordinating support for the fire brigade as we help move the rapidly sinking boat to a safe jetty. Needless to say my timetable is now hours out; I phone Brixham to make my apologies. With that evening's lights inspection to follow it proved to be another very long day, eventually getting back to my hotel long after dark.

## Plymouth and a brush with the law

Early evening, dusk is falling. I am waiting for the lights to come on across the river at Saltash Town Quay, having found a perfect vantage point under the Tamar Bridge. I can also see what will be the navigation lights on the bridge buttresses, and the most important ones I seek: the lights marking each end of the Ernesettle Royal Naval Armaments Depot loading jetty for the Devonport Naval Base.

As ever I find myself on site a little early waiting for darkness to fall, looking out with my binoculars willing those lights to come on. It is at this time that the Military Police arrive, asking me what I am doing looking so intently at the armaments jetty, asking for proof to corroborate my reasons for looking so suspicious. I suggest they call the Devonport harbour control, or Trinity House Planning Centre at Harwich, any



*Main image: A Kingfisher is seen perched on a navigation mark within the harbour at Fowey Port. Image © Encountercornwall.com via Fowey Harbour Commissioners.*

of whom will verify my credentials; an hour or more passes before they are satisfied that I am genuine, by which time the lights were flashing brightly, albeit without, I might say, those of the armaments jetty, which were subsequently reported as extinguished, at least justifying my time spent with the Police.

## The River Ouse and unusual activity at Drax power station

The River Ouse inspection is conducted by driving 15 miles up and down each bank between Selby and Goole. I was warned by the local Harbour Master that in order to gain access to the Drax loading jetty, we would need to go through a somewhat labyrinthine security clearance process at the power station main gate; this achieved, we were eventually on our way down towards the river, a narrow road running in the opposite direction away from the power station, twisting and turning through the fields. We turned the final corner and were confronted by what can only be described as a scene from *Close Encounters of The Third Kind* – lights, vehicles and people everywhere – which turned out to be tractors working nights on the potato harvest, immediately next to the gate we needed to undertake the jetty lights inspection. I wondered if those farmers had gone through the same security clearance problems we had had…

## Getting out to the inspections

As you might imagine, navigation marks can be notoriously difficult to access. In addition to ships and the usual pilot and survey boats – not forgetting many long muddy walks along clifftops and river banks – I have travelled on an odd variety of transport to get to my inspection: a fish farm tractor, a Second World War landing craft, yachts, speed boats and a 4x4 sand buggy. I am still waiting, however, for a Harbour Master to offer me a ride on a hovercraft or helicopter.

## Characters you meet

Having a face to face relationship with such a varied customer base is clearly an important part of my job and a fundamental public relations role for Trinity House; the most noteworthy may be the 92 year old Harbour Master in the quaint Cornish harbour of Polperro. As I arranged my appointment with him I was told in a broad Cornish accent to walk down through the village (no cars) to the harbour, where he would be sat on the wall by the post office waiting for me. True to his word there he was; he set off with his sticks to lead me along the coast path, out through the village and up over the rocky cliff top path, regaling me with interesting anecdotes and tales of days gone by. Finally, descending the steps with pride to his lighthouse, he unlocked a cabinet door from which he produced a little ladder for me to step up and check the lantern. All well, we locked up and made the long walk back to the village, before bidding me farewell until next year's inspection.

## So there it is

The Inspector of Seamarks is a quirky and unique role, and – like Marmite – very much an acquired taste. Many would not relish the miles on the road, the long unsocial hours, nor the numerous nights in franchise hotels complete with evening meal cloned from one town to the next. Nevertheless, the diversity of the role makes it so interesting and dynamic, with no two days the same.

The year 2016 started in February, first stop was Cromer and the North Norfolk coast, I look forward to the adventures that await me this year.

# Harbour Masters – *Knowledge and understanding assured*

By **Peter Moth** FNI
Executive Officer UK
Harbour Masters' Association,
Younger Brother.

IN THE BRITISH ISLES, THE ROLE OF HARBOUR MASTER MAY BE TRACED BACK TO THE very earliest days of organised maritime transport – perhaps to Roman times, or before – when harbours first began to evolve from simple havens, used only by local communities, into defined coastal areas that catered for an ever-increasing demand for seaborne trade. As the ports developed, so too did the need for supervision and regulation of the various activities of the harbour and, as a consequence, the core responsibility of a harbour master – that of ensuring the safety of all harbour users – became common practice, often supported by local byelaws or other provincial regulation.

Many years later the role of the harbour master gained full legal credibility when many of its functions were incorporated into national legislation, most notably in the definitive Harbours Docks and Piers Clauses Act of 1847. Under this statute – which, with amendments, remains valid today – a harbour master gained the powers of 'direction' – essentially the legal authority to regulate the time and manner of ships' entry to, departure from, and movement within a harbour, its approaches and in any related waters. The new authority also extended the right to remove unserviceable vessels and any other obstructions to safe navigation within the harbour.

The same Act also empowers a statutory harbour authority to appoint (or dismiss) a harbour master who shall be entrusted to ensure not only the safe operation of navigation but also the myriad of other marine activities within the harbour's geographical limits. Surprisingly, given the comprehensive nature of these powers, there are no specific qualifications required of the harbour master, it being left to his employer, the harbour authority, to satisfy itself that he/she is suitably competent and experienced to take on these responsibilities.

> ***'The harbour master has day-to-day responsibility for the safe operation of navigation and other marine activities in the harbour and its approaches',***
>
> Port Marine Safety Code, Department for Transport, 2015.

More recently and by common practice, the Harbour Master is normally qualified at least to a level equivalent to that of a Master of the largest vessel to visit the port. For most large commercial ports, a Master Mariner Class 1 Certificate of Competency (STCW*), or Royal Naval equivalent, has served the test of time as the standard qualification, but in recent years these certificates have become far less prevalent and alternatives have been sought. In some totally recreational harbours, a Royal Yachting Association Yachtmaster or equivalent qualification has proved most satisfactory (normally with a commercial endorsement or an appropriate level of experience in a port environment).

In 2008, the issue of Harbour Master qualifications came to the fore when the proposed Marine Navigation Bill raised concerns over the lack of consistent safety standards exercised between harbour authorities. The Bill proposed that ports should employ only qualified persons as Harbour Masters although it fell short on guidance as to what constituted a 'qualified person'. The (House of Commons) Transport Select Committee, in their report on the Bill, suggested that it was time for the Transport Secretary to prescribe such standards, but such a requirement was removed from the eventual Marine Navigation (No 2) Act in 2013 and, currently, there continues to be no mandatory qualifications to hold the position of Harbour Master. It is a decision for the port, or more specifically the port's Duty Holders, to satisfy themselves that the Harbour Master is suitably competent to carry out their responsibilities under the terms of the industry-standard Port Marine Safety Code (PMSC).

Recognising that many ports may need guidance in this regard, the ports' industry – through its training and consultative body, Port Skills & Safety (PSS) – compiled the National Occupational Standards for Harbour Masters (NOS) which set out the basic levels of knowledge, understanding and experience required for harbour masters to comply with the PMSC. In 2012 this resulted in the joint development with the UK Harbour Masters' Association (UKHMA) of a new qualification – the Harbour Master Certificate, a comprehensive and rigorous examination of a harbour master's knowledge, understanding and experience against the benchmark set out in the NOS. In practice, the HM Certificate assessment process takes place over a prescribed twelve-month period during which a candidate is required to identify, gather and present evidence relating to the seventeen units of NOS for appraisal by two independent and remote assessors nominated by the HM Certificate Management Group, a sub-group of the UKHMA. On successful completion of the assessment process, the candidate is invited to attend a face-to-face oral interview meeting, conducted by two different assessors, where the full scope of NOS is explored. The overall appraisal is overseen and uniquely endorsed by the Maritime and Coastguard Agency. Once issued, the Certificate has a validity of five years, with revalidation based on a prescribed level of Continuing Professional Development (CPD) activity.

To date, over 70 Harbour Masters have embarked on the assessment process and, by mid-2016, management of the scheme will transfer to Liverpool John Moores University where further associated training will be developed and opportunities opened for those without a seafaring background to progress along a Harbour Master career path.

Alternative qualification routes are also open to both aspiring and in-post Harbour Masters including those officers emanating from outside the UK or those with alternative career targets. A twelve-month distance learning International Diploma for Harbour Masters is offered by Lloyd's Maritime Academy that combines port marine safety with management skills applicable to harbour masters and port captains from throughout the world, and potentially leads to accreditation towards further academic qualification such as an MBA. The Nautical Institute has also re-launched its Harbour Master Certificate scheme, based on its publication *The Work of the Harbour Master.*

As ships get larger and sea lanes become more crowded, it is reassuring to know that those entrusted with the safety of navigation though our ports and harbours continue to be qualified to some of the highest standards in the maritime world and that the traditional role of the Harbour Master continues to evolve to meet modern-day challenges.

*per IMO: Standards of Training, Certification and Watchkeeping for Seafarers.

**Author's note:**
The UK Harbour Masters' Association (UKHMA) is a professional association of harbour masters, formed in 1993, and now boasting a membership that covers most ports and commercial harbours in the United Kingdom. Membership consists of harbour masters from ports large and small, publicly and privately owned, and represents a unique source of up-to-date, hands-on experience in a range of port and maritime operations. The principal harbour master, or any person who in the normal course of their duties is expected to deputise for the principal harbour master, of any statutory port or harbour in the UK, Channel Islands and the Isle of Man is eligible to become a Full Member of the UKHMA, while further categories of membership accommodate other port marine officers such as VTS staff, dock masters and so forth and those providing commercial products or services to ports.

Widely acknowledged as a competent partner in the shipping and port industry throughout the British Isles, the UKHMA's wealth of experience is sought after and highly appreciated in many inter-industry forums, working groups and consultations, including those initiated by the MCA, DfT, MAIB, Marine Scotland and others. The UKHMA maintains a permanent seat on the MCA's Port Marine Safety Code Steering Group.

**Further information:**
www.ukhma.org/training.php
www.ibc-academy.com/event/harbour-master-distance-learning-course
www.nautinst.org/en/accreditation/schemes/harbour-masters.cfm


***Below:*** *A typical Harbour Master's launch.*


***Below:*** *Harbour Master's flag.*

***Above left:*** *A small port's VTS*

***Top:*** *Award Group – the award of the UKHMA's Harbour Master Certificate to the first tranche of successful candidates.*

***Lower:*** *VTS office.*

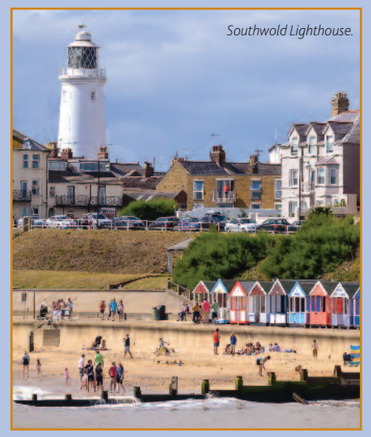
## Changeover day for the Sandettie Lightvessel

**Ryan Palmer,** Second Officer on THV *Alert* (Starboard watch), captured this scene as THV *Galatea* and THV *Alert* made preparations to tow the Sandettie Lightvessel.

If you have any photos of Trinity House that you'd like to share, please go to **www.trinityhouse.co.uk/send-in-your-photos**

# A spring digest of Service news

**Southwold,**
**Orfordness,**
**& Longstone Lighthouses,**
Trinity House, Harwich.



*Southwold Lighthouse.*


*Much of the design of the upgraded visitor centre at Longstone are devoted to telling the story of Grace Darling and her father.*

### Southwold Lighthouse

Early in January work commenced here on replacing the existing main light which had proved to be unreliable under certain conditions. The new light is a rotating white LED unit comprising six sides of eight white LEDs. Each LED is housed in its own optic arrangement to maximise the output from the light source. This provides a 24 nautical mile range using only 160W of power and highlights the efficiency of LEDs over other light sources. In order to contain the heavier unit a new aluminium pedestal was created above the existing drum lens with the original lens being used as an emergency light in the event of the new light failing. The new light was first exhibited on 15 January.

### Orfordness Lighthouse

This station was decommissioned and sold to a private buyer in 2013 as the sea was eroding the environmentally sensitive shoreline of Orford Ness and threatened the long term viability of the structure. At the time of the sale it was known that the lighthouse had a limited future and it is understood that the new owner has been successful in encouraging visitors to the Ness to see the lighthouse which was built in 1792.

By March 2016 the shoreline was then in the region of one metre from the lighthouse base and it is expected that the next severe storm will probably expose the tower's foundations potentially rendering the building unstable. The owner is planning to remove the lantern room and rebuild it further inland using as much of the original material as possible, it is understood.

### Visit from the High Sheriff of Essex

On 9 March the then High Sheriff of Essex Mr Vincent Thompson visited Trinity House Harwich in order to understand the many roles of Trinity House and to recognise the position which Trinity House holds within the local community.

Wide ranging conversations took place on all aspects of Trinity House as a Lighthouse Authority and as a Corporation for the benefit of seafarers past, present and future. He toured the depot at Harwich, met staff and heard much of the role of Operations and Planning as well as buoy yard operations and technology development within R&RNAV.

At the time THV *Galatea* was alongside for essential maintenance and an opportunity was taken for a ship visit with Marine Operations Manager Tony Wright and Captain Simon Robinson.

### Longstone Lighthouse

Following the successful re-engineering of Longstone Lighthouse, the visitor centre was reopened to the public with improved displays and interactive units for all the family early in April.

The lighthouse is famous as the scene of one of Britain's most courageous rescues, when lighthouse keeper's daughter Grace Darling rowed out with her father into storm conditions to save nine victims of the foundering steamer *Forfarshire* in 1838.

Much of the design of the upgraded visitor centre areas are given over to telling the story of Grace and her father William, of the rescue and their life at the lighthouse; the Darling family were the first to live in the lighthouse after it was built by Trinity House in 1826.

The visitor centre also considers the history of Trinity House and brings visitors of all ages up to date on what the maritime charity and General Lighthouse Authority is doing today to carry on the work it began in 1514.

*Longstone Lighthouse.*



Visitors can view Grace's tiny bedroom from where she spotted nine survivors desperately clinging to the rocks. Despite a raging storm, the Darlings launched the lighthouse boat and rescued the survivors, caring for them in the lighthouse for two days until the storm subsided.

In putting together the new and improved displays, Trinity House was assisted in part by the team at the RNLI Grace Darling Museum in nearby Bamburgh, to whom Trinity House is most grateful; it is hoped that the two attractions will be the perfect complement to each other.

### The Longstone Tour

Longstone Lighthouse, or Outer Farne as it was first called, is situated on Longstone Rock, one of the Outer Staple Islands of the Farne group.

Visitors may take the Longstone tour which lasts approximately 30 minutes inside the lighthouse, a cruise around the Farne Islands to view the seabirds and the famous Grey Seal colony, with full commentary en route. The whole trip lasts in the region of two hours.

Landing at, and opening of, the lighthouse is at the boatman's discretion in line with Health and Safety Regulations. Opening of the lighthouse is, of course, subject to weather and the operational requirements of Trinity House.

Tours of Longstone Lighthouse are organised by Golden Gate Boats under licence from the Corporation of Trinity House.

### Longstone admission prices

**Adults:** £2.00.
**Family ticket:** *(2 adults and up to 2 children)* £4.00
*Additional child, up to 15 years:* £1.00.

*Please note the minimum height restriction of 1.1 metres tall to climb the tower;* **Fee:** £1.00.

**Concession,** *general admission:* £1.00.


*The visitor centre at Longstone was reopened to the public with improved displays and interactive units .*


*Image © Shutterstock.*

*Orfordness Lighthouse.*

# The work of the Marine Society

By **Mark Windsor**
Director of Lifelong Learning,
Marine Society & Sea Cadets.

THERE IS AN ACKNOWLEDGED GLOBAL SHORTAGE OF SEAFARERS as we know and so it is in the best interests of employers to maintain a well-trained and reliable workforce to crew their ships. By providing advantages and opportunities for development to their seafarers there is a strong possibility that the workforce will remain stable and continue within the company that is enabling them to develop and learn.

By maintaining this established workforce and by encouraging an increasing professional ability within it the operation of their vessels will become more efficient, safety at sea will be increased and costly accidents and incidents potentially reduced. Marine Society is developing to meet the specific needs of the modern seafarer. In late 2015 the charity conducted a major survey of seafarers' life-long learning needs with nearly 1000 responses received.

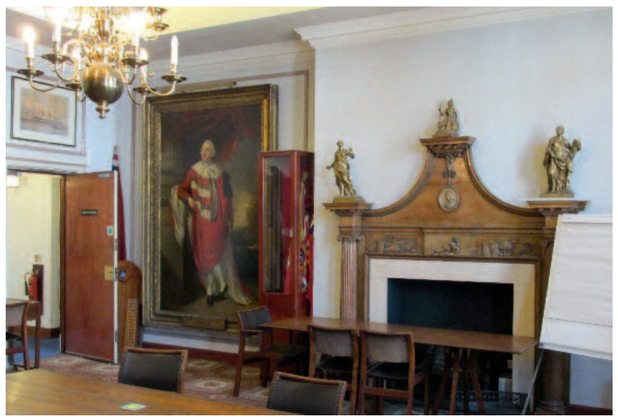
**Key findings include:**

- What we do, we do well, but expansion and improvements in services need to be made.
- The name of Marine Society is known and respected in the industry but the exact function is not so well known. The charity needs to raise sector awareness further.
- Social media engagement needs to be increased.
- A wider range of subjects needs to be offered in more bitesize pieces to take into account time available for learning on board, possibly using electronic delivery means.
- Information, advice and guidance is well received but could be increased.

***Left:*** *The seadog sundial is on the outer wall of the building and was unveiled by HM The Queen.*

***Lower Left:*** *The entrance to Marine Society HQ, 202 Lambeth Road.*

***Below:*** *The Council Chamber.*



Marine Society is a member of the Maritime Skills Alliance and other networks such as Maritime London, so ensuring it is kept fully up to speed with industry needs. Marine Society is also working with partners Trinity House, Maritime London, Nautilus International and the Merchant Navy Training Board on project Ulysses. The aim of this project is to better understand the needs of the maritime sector in terms of those coming ashore, so that working together we can better equip seafarers to meet the needs of the industry as a whole, not just the wet end at sea.

As a result of these initiatives, Marine Society is in the process of re-tuning its learning offer to best meet the needs of seafarers well into the 21st century. The offer includes its Matrix standard externally accredited impartial information, advice and guidance service through which seafarers are helped to find the most appropriate lifelong learning to suit their needs be that via Marine Society itself or other quality learning provider.

***The Marine Society aims to provide seafarers with a wide ranging programme of student-centred and employment-focused distance learning and support that promotes and sustains a culture of continuous learning, professional and personal development thereby serving to maximise opportunities for enhancing individual performance, growth and employability***

Marine Society enables distance learning via programmes ranging from the popular @Sea courses, through GCSE and A-Level courses delivered in partnership with Oxford Open Learning and the National Extension College, up to Open University degrees and Work Based Learning opportunities culminating in an Honours degree. This recognises the considerable operational experience developed when progressing to a Class 1 Certificate of Competency. Entrance administration will be undertaken and examinations can be arranged at sea or in the UK and if needed at overseas locations to reflect the working patterns of the seafarers.

The @Sea programmes are maritime contextualised and recognise the need for up-skilling in maths and writing at sea. ➥ *Continued on page 28.*

*In the Council Chamber the painting on the left is of Jonas Hanway, founder, and that on the right, by Gainsborough, is of John Thornton, the Society's Treasurer in the early years.*

# The work of the Marine Society

Continued from page 27.

A visit to the Marine Society website **www.marine-society.org** will provide information and allow access to all the services listed here.

The programmes and apps have received high praise from the learners who have used them as a refresher or as an educational tool prior to taking examinations.

Maths@Sea is used by some schools and colleges in their standard courses and is also used as a pre-filter for prospective cadets prior to employment by a major shipping company. These programmes have also been recognised by the Nautical Institute and IMarEST as providing a valuable contribution towards Continuing Professional Development (CPD). The @Sea programmes have been shortlisted for the 2016 Seatrade Awards.

Maths@Sea+ develops maths skills to A-Level standard and is a useful addition to skills prior to taking further examinations at sea. A further @Sea programme is in the development stage and the expectation is that English@Sea, when released in 2016, will improve language skills at sea for international seafarers across the globe. It is not hard to see just what a major improvement in safety and efficiency that this will bring to an industry where poor communication skills are an obvious challenge on board vessels with crews from many nations.

In days of budget restraints and personnel shortages Marine Society is also able to provide bursaries and interest free loans. The John William Slater Scholarship is available to Merchant Navy ratings, Electro-technical officers and yacht crew who wish to increase their employability prospects by studying for their first professional certificate. The fund, currently up to £17,500 per scholarship, is managed by Nautilus International and administered by Marine Society.

The Worcester Scholarship is available to maritime professionals who wish to undertake continuing learning and professional development. The difficulties that officers face when applying for study leave and financing periods at college are widely recognised. Marine Society assists companies in fulfilling the Maritime Labour Convention (MLC) 2006 guideline that adequately stocked libraries are changed at reasonable intervals and provided on board ships.

Marine Society Library Services have well stocked shelves with a wide variety of topics available in hardback or paperback. Exchange libraries can be arranged and despatched to all parts of the world. One-off paperback libraries can also be provided.

Marine Society is also the major UK distributor of all International Maritime Organization publications and operates an online book shop as well as a walk-in shop at the head office in Lambeth, south east London. E-book readers, pre-loaded with books of choice, are also available. As well as supporting education for seafarers Marine Society representatives also sit on industry committees and support major institutions, such as Trinity House.

Marine Society remains true to its core commitment of lifelong learning for seafarers, something it has been doing for nearly three centuries and intends to do for many years to come, helping to give seafarers the best possible lifelong learning opportunities tailored to their individual needs. Captain Nigel Palmer, Elder Brother of Trinity House is Chairman of Marine Society & Sea Cadets and down the years many members of the Fraternity have served as Trustees.

*The entrance hall.*

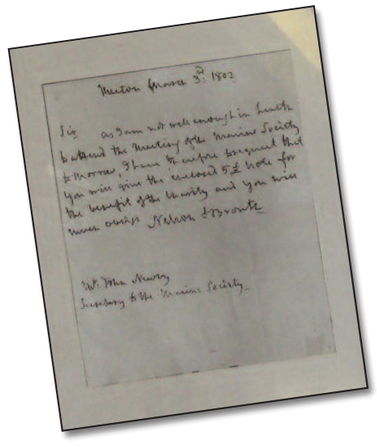
*The Archive Library is where Marine Society holds a very large collection of nautical history books, old training school records and here is where ships' libraries are prepared, hence the seeming chaos.*

*The Bookshop is where are held current text books and recent nautical publications, also the stock of IMO publications for which we are the main UK distributor.*


*The Charity Statue is located in the entrance hall and is of Charity protecting a poor boy. It was executed by John Flaxman in 1763 in honour of a large bequest made to the Society.*


*Jonas Hanway was our founder in 1756.*

*Albert Mansbridge was one of the society's previous, very well respected, Chief Executives.*



*The Nelson Letter was sent with a donation of £5 when he could not make a meeting. He was a Trustee.*

# The Chilean Maritime Authority and its Aids to Navigation Service

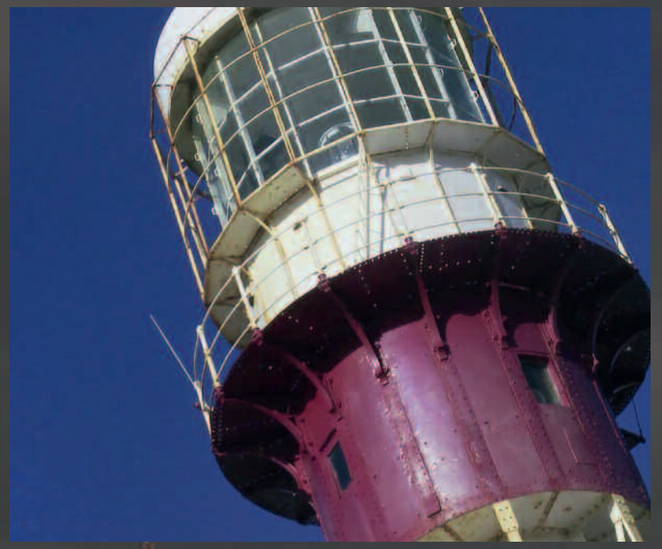
By **Commander James Crawford,**
Head of the Chilean Aids
to Navigation Service.

THE DIRECTORATE GENERAL OF MARITIME TERRITORY AND MERCHANT Marine (DIRECTEMAR) is a Chilean Navy body created in 1836 through which the State oversees the compliance of laws and international agreements currently in force and related to the Chilean maritime territory, in order to protect life at sea, the marine environment and natural resources, and control the activities carried out within the maritime field under its jurisdiction, thus contributing to the maritime development of Chile.

***Above:*** *DIRECTEMAR has responsibility for the safety of water sports.*

***Right:*** *Management of the national aids to navigation network is a principal activity of DIRECTEMAR.*

***Lower right:*** *Vessel inspections.*



***Main picture:*** *DIRECTEMAR's network consists of more than 1,000 aids to navigation. Tasks of the Maritime Authority are huge considering the area for which it is responsible. The territory of the Exclusive Economic Zone is five times larger than the continental surface of the country.*

***Below left:*** *The Chilean Aids to Navigation Service operates in extremes of climate.*

***Below right:*** *Activities extend to safety of ports and terminals.*

DIRECTEMAR, as National Maritime Authority, has the purpose of being a Maritime Public Service of Excellence. This guides the daily tasks for this Directorate General, its subordinate Technical Directorates, the 16 Maritime Governors' Offices, the 64 Captains of the Port Offices, and the 201 Sea Mayors' Offices, along the national territory.

Three concepts guide the actions of the Maritime Authority, which are executed by each of the subordinate Technical Directorates, according to IMO interests:

1. Directorate of Maritime Safety, Security and Operations (DIRSOMAR), delivering safe and secure seas;
2. Directorate of Maritime Interests and Aquatic Environment (DIRINMAR), providing clean seas;
3. Hydrographic and Oceanographic Service of the Navy (SHOA), providing information on known seas.

All the actions executed by DIRECTEMAR are concentrated in these three scopes. Some examples of these actions are:

- Vessels inspections.
- Control of water sports.
- Inspection and control of maritime personnel.
- Management of the national aids to navigation network.
- Control of activities related to maritime terminals and ports, with the aim of contributing to the country's maritime power.

At the same time, DIRECTEMAR is also in charge of the control of the actions which aim is to preserve hydrobiological resources located in Chilean jurisdiction waters, and it shares the management of the coastline and maritime concessions with the Chilean State, enforcing the marine environment protection treaties to which Chile has subscribed. Likewise, DIRECTEMAR through the SHOA provides the technical elements

*Continued on page 32.*

# The Chilean Maritime Authority and its Aids to Navigation Service

➥ *Continued from page 31.*

and the information and technical assistance to ensure the safety of navigation in the authorized routes, through the elaboration of navigation charts, as well as the operation of the national tsunami warning system. Tasks of the Maritime Authority are huge considering the area for which it is responsible. As an example, the territory of the Exclusive Economic Zone is five times larger than the continental surface of the country. If we add the area where the Chilean Navy is responsible for Maritime Search and Rescue (SAR) tasks, which is 35 times larger than the land surface, we could say that we are more sea than land.

The Chilean SAR area of responsibility is the fourth biggest in the world, after Australia, New Zealand and South Africa, and we share with Argentina the SAR area of the Drake Passage (between Cape Horn and the South Shetland Islands of Antarctica) and the waters of the Antarctic continent. In this way, the Chilean Navy, through the National Maritime Authority, performs its role of guarantor of the vital and strategic maritime interests for a nation that has a maritime vocation and which projects to the Pacific basin and to the world on safe, secure, clean and known seas.



***Above:*** *Helicopters are widely used in the maintenance of the service.*

On 29 December1976, Supreme Decree (M.) N°1.190 organized the Maritime Search and Rescue Service. Its main task is to safeguard human life at sea, providing essential aids to people who are lost or in danger in the national area of responsibility, which is 26,476,005 square kilometres in the South Pacific.

Since it is a huge national SAR area of responsibility, the main concern is to keep an updated surface picture of the vessels navigating in its waters, in order to assist their crews in case of an emergency. To do so, we have agreements with different organizations, at a national and international level, that allow us to have a surface picture that provides the exact and timely information.

## Aids to navigation in Chile

The Chilean Aids to Navigation Service was created in 1837 with the aim of managing and developing the maritime signalling system in the country, in accordance with national and international regulations signed by the Republic of Chile. This ensures a degree of operability that allows the safe and clear navigation of ships through domestic routes.

In order to achieve this, the Service has a long network, consisting of 1,143 devices distributed from Arica in the northernmost part of Chile to the national Antarctic territory, totalling 960 lighthouses and beacons,

***Above:*** *DIRECTEMAR has a network of 960 lighthouses and beacons.*

***Main picture:*** *Chile still has 19 manned lighthouses occupied by specialist staff who have tasks other than aids to navigation operation such as maritime traffic control and meteorological observations.*

132 buoys and 51 electronic devices (such as radar beacons or racons, AIS, and fog signals). It must be considered that Chile still has 19 manned lighthouses, which are operated by light-house specialists who, sometimes, live there with their families, developing activities as sovereignty, radio medical support, meteorological observations, pilots' support and maritime traffic control.

Maintenance and operation of these aids to navigation are performed by five zonal maritime signalling centres distributed in the cities of: Iquique, Valparaíso, Talcahuano, Puerto Montt and Punta Arenas. The last two centres concentrate 76% of the nation's marine aids to navigation. Tasks developed by Zonal Centres are monitored by the Head of the Chilean Aids to Navigation Service, based in the city of Valparaíso. He is a Coast Guard Commander with a sub-specialization in aids to navigation. At the Service's head-quarters, the decisions that will govern present and future aids to navigation in the country are taken.

### The Head of the Service has five divisions:

**a)** Planning, which generates long-term planning and analyses deep impact situations that affect and could potentially affect the aids to navigation system;

**b)** IALA, in which its members analyze and study the scope of the IALA recommendations and their impact on national interests;

**c)** Operational Logistics, where its members organise and implement device acquisition programmes and arrange their distribution throughout the national territory;

**d)** Aids to navigation, which analyses operational problems and studies the requirements associated to new routes and;

**e)** Research and development, where its members test new aids to navigation available in the market, in laboratories developed for this kind of requirements.

Currently, the Aids to Navigation Service is focused on the development and execution of a plan for the recovery of the network capabilities, known as Fénix, which considers an approximate investment of US$40 million, to renew 80% of the devices for state-of-the-art equipment that allows keeping the operational and reliability standards recommended by the IALA.

Likewise, the Aids to Navigation Service is working in the project Pilar, which is oriented to the improvement of the maritime rescue capa-bility and the maintenance of articulated buoys. At the same time, the Service is monitoring the construction of a lighthouse of 22 metres high, the tallest built in the last 121 years, in the central-southern area of our country.

DIRECTEMAR gives meaning to the Chilean State and the sea. It encourages each of its Officers, Ratings, and Civilians, to improve their processes for the benefit of the protection of the human life at sea and the maritime interests of the nation.

***Top left:*** *Operational and reliability standards comply with IALA Recommendations.*

**Top right:** *The service places great value in addressing the next generation on maritime safety.*

***Lower left:*** *Within its waters DIRECTEMAR has a huge maintenance responsibility for aids to navigation in hostile environments.*

***Lower right:*** *Maintaining safe, secure, clean and well-marked waters where a variation in climate is frequent.*

# Corporate Update – *Trinity Village Development*

By **Commander Graham Hockley** RN,
Secretary, The Corporation
of Trinity House,
Younger Brother.

PLANNING PERMISSION HAS BEEN GRANTED FOR 64 APARTMENTS and a commercial unit on Harper Road and Swan Street in the quiet enclave of Trinity Village behind Borough High Street, London SE1. This development is a joint venture on an estate endowed to the Corporation of Trinity House in 1660. Today this estate generates income that funds the vast majority of causes supported by the Trinity House Maritime Charity.

A terrace of three distinctly different apartment buildings has been designed by acclaimed architects Haworth Tompkins. In an architectural context the elegant composition of buildings will respect several adjacent listed buildings and the historic Trinity Church Square.

Trinity House advised by Capita Real Estate. Acorn Property Group with Otterlo London are the joint venture developers. Galliard Construction will be the contractor. Construction starts this summer and the development will be completed in the summer of 2018.

In the words of Julian Hampson, Design & Development Director at Acorn: *'This is a rare and exciting opportunity to bring forward an exemplar residential development on this historic estate. Trinity Village is a hidden oasis with distinctive architecture surrounded by the urban bustle of Borough.'*

## History of the Estate

Formerly known as the Newington (Trust) Estate this consisted of meadows and market gardens and for £1669 was conveyed to the Corporation in 1660 by Christopher Merrick, a Merchant of London "*…for relieving comforting easing and maintaining of the poor aged sick maimed week and decayed Seamen and Mariners of this Kingdom their wives children and widows where most need was or should be conceived in the judgement … of the …said (Trinity House) Brotherhood."*

Centre piece of the Estate is Holy Trinity Church constructed by Francis Bedford and consecrated in 1824. The Church was built for a total cost of £16,295 with the aid of a Parliamentary Grant and was in use until 1961 whereupon work commenced to create within it a rehearsal hall for London orchestras. It is now known as the Henry Wood Hall. Under the Pastoral Measures Act of 1968, Holy Trinity was the first church to be declared redundant and it has been declared a Building of Architectural Merit and is protected as a Grade Two listed building.

The Estate also comprises a mixture of houses and flats, in two squares, Merrick Square and Trinity Church Square.

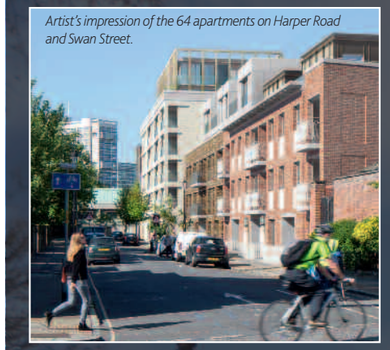
The area round about saw rapid development in the late 17th and early 18th centuries and William Chadwick developed these two squares from 1825. He was a self-taught architect who introduced the concept of commercial development within an area of housing. Each of the two squares has a complementary garden as a centre of attraction. There were losses during the Blitz and sympathetic repairs were carried out by the Corporation. Many of Chadwick's features, particularly the classical designed cornices, original wallpaper to a pattern of 1810 and *trompe l'oeil* effects where paintwork was made to resemble plasterwork on the wallpaper, are held in Guildhall Library records.

*Centre piece of the Trinity Village Estate is Holy Trinity Church constructed by Francis Bedford and consecrated in 1824. This is now a rehearsal hall for London orchestras.*

***Top:*** *The Trinity Village Estate also comprises a mixture of houses and flats, in two squares, Merrick Square and Trinity Church Square.*

***Above:*** *Each of the two squares has a complementary garden as a centre of attraction.*





*Artist's impression of the 64 apartments on Harper Road and Swan Street.*

## The charities: Seafarer Support

It was reported in recent weeks that the Seafarer Support website – aided by the Corporation of Trinity House as a member of the Maritime Charities Group – has responded to over 50,000 searches from mariners in need from Merchant Navy, Royal Navy, Royal Marines and the Fishing Fleet communities. Furthermore, its free helpline has received over 4,000 calls from people seeking help or advice on welfare issues, including not only calls from within the maritime sector but also from non-maritime organisations such as Social Services. Seafarer Support is managed on behalf of the sector by the Merchant Navy Welfare Board (MNWB), who also part fund it in partnership with Trinity House, Seafarers UK and the Royal Navy & Royal Marines Charity.

Commander Graham Hockley, Secretary to the Corporation of Trinity House commented: *'Trinity House is delighted to contribute to this programme, bringing vital information to the seafarer in need.'*

## Charitable grants

In the financial year to March 2016 the Trinity House Maritime Charity made grants totalling £1.7 million to other maritime charities. These included the charities listed here:

**Seafarers UK** will be celebrating its centenary in 2017, following the foundation of King George's Fund for Sailors during the first Battle of the Atlantic in 1917. The centenary theme will be Service to Seafarers Past, Present and Future, and inspiration for the 'Past' was taken from the highly successful Trinity House quincentennial support to the Hub accommodation complex for retired seafarers and their dependants at the Nautilus Welfare complex at Mariners Park, Wallasey.

**The Whitby and District Fishing Industry Training School** was established in 2002 and is ideally located in the Mission to Seafarers' Centre adjacent to Whitby's fish quay. It is mainly funded via the Skills Funding Agency and the Sea Fish Industry Authority.

**Combat Stress** is the UK's leading mental health charity for veterans, providing free specialist clinical treatment and welfare support to ex-servicemen and women across the UK with mental health conditions. There are 6,000 veterans registered with the charity.

**The Tyne Mariners' Benevolent Institution** provides accommodation and support payments to seafarers in need. The Tyne Mariners' Homes, a Grade II listed building, are located on Tynemouth Road, North. Here the charity provides 30 residences available for seafarers who are no longer working due to age or ill health. The Institution also provides monthly payments to seafarers and currently supports more than 130 people in need.

# The mysteries of the Order Book – PART 3

By **Paul Ridgway.**
*We conclude our anthology of excerpts from the Order Books, highlighting Trinity House activities from past years.*

## From her builders

Taking a look at the Order Book of THV *Siren* we note that on 29 February 1960 Captain R Dunn, *'Duly appointed representative of the Corporation of Trinity House of Deptford Strond do hereby accept delivery from J Samuel White & Company Limited of Cowes, Isle of Wight of Lighthouse Tender* Siren *as fully satisfactory and entirely in accordance with contract requirements.'*

## Commissioning

She was commissioned the same day for East Cowes District and carried the Official Number 301080 and the signal letters MYBT. *Siren* was of the Mermaid Class of diesel-electric lighthouse tenders, of 1425grt, with a length oa of 221 feet, breadth 37ft 6in and a depth of 16ft.

The authorised complement of *Siren* at the time of her commissioning was as follows:

| | | | |
|---|---|---|---|
| Captain | 1 | Seamen Boys | 2 |
| First Officer | 1 | Steward | 1 |
| Second Officer | 1 | Assistant Steward | 1 |
| Third Officer | 1 | Boy Steward (unestablished) | 1 |
| Chief Engineer | 1 | Cook | 1 |
| Second Engineer | 1 | Mess Room Boy (unestablished) | 1 |
| Third Engineers | 2 | Donkeyman | 1 |
| Carpenter | 1 | Greaser/ Storekeeper | 1 |
| Boatswain | 1 | Greasers | 2 |
| Winchman | 1 | Firemen | 3 |
| Quartermasters | 3 | | |
| Coxswains | 2 | Total Complement | 38 |
| Seamen ABs | 7 | | |
| Seamen Ordinary (unestablished) | 1 | | |

## Many tasks undertaken

*Siren* and all her sisters and the remainder of the Fleet which in 1960 included *Patricia, Ready, Triton* and *Alert* were very busy elements of the then Steam Vessel Service undertaking a breadth of operations in our sea area from Berwick upon Tweed to the Solway Firth including the waters of the Channel Islands. Work was considerable: buoy establishment, relighting and shifting; lightvessel tows to and from station and to drydock; servicing and supply of lightvessels and lighthouses; viewing trials for the Examiners Committee and support of the Engineer-in-Chief's Department which included the Blackwall Workshops and calls to Depots in Great Yarmouth, Harwich, East Cowes, Penzance, Swansea and Holyhead. Of course, there was also the searching for, and marking of, wrecks that were a danger to navigation.

## Dover Strait marking

On 2 August 1982 Captain David Smith, Elder Brother, embarked in *Siren* at Harwich under command of Commander Gibbs. The ship proceeded at 1630 for the new F3 LANBY station, which was established at 0001 on 1 July to meet changes in the IMO Routeing Schemes for the Southern North Sea and Strait of Dover.

David Smith took up the record: *'After carrying out a viewing trial by day and night which confirmed that the LANBY on station was meeting fully its operational role, and that other buoyage in the vicinity was satisfactory the ship proceeded to Dover anchoring off the breakwater at 0145, 3 August. It was particularly noted that F3, F2, Falls Lightvessel and the buoy CS4 fully justify their respective roles in the revised scheme.*

*'THV* Siren *was clean and smart; her Officers helpful and competent; the crew willing and cheerful – all duties were well performed.'*

## A major wreck marked

Assistance to the Greek vessel *Aeolian Sky* under the tow of the French tug *Abeile Languedoc* was recorded in November 1979. Captain David Smith had joined *Siren* at Cowes at noon on 3rd November with Commander Fairplay in command and the tender sailed to rendezvous with Aeolian Sky under the tow of *Abeile Languedoc* following collision.

David Smith recorded: *'The rendezvous was effected at 2000Z in position 205° St Catherine's Light 7 miles by which time progress towards the Nab had been halted due to the ports of Portsmouth and Southampton being closed to the casualty.*

*'The tug master was given approval to anchor in Weymouth Bay and he altered course for that destination against a deteriorating weather situation, Force 7 to 8 worsening.*

*'By 0300 the tow was 200° St Alban's Head 5.5. Throughout the tow the casualty had been towed stern first and was down by the bows with No 1 and No 2 hatches flooded. She now began to list heavily to port. Her upper deck lighting had provided illumination during this period. At 0405* Siren *considered the forefoot of the tow to be aground on the seaward extension of St Alban's Ledge, drawing 16 metres plus. At 0554 the upper deck lighting began to fail and shortly after 0600 the lights were completely extinguished. At 0608 shortly before twilight the radar echo of* Aeolian Sky *disappeared. The vessel sank in position 50° 30' 36"N; 02°08' 24"W. The tug returned to base.*

*'*Siren *remained in company as Wreck Marking Vessel for the period that followed. Very poor weather: Wind Force 9, sometimes Force 10, making life generally uncomfortable. As the only vessel present* Siren *efficiently acted as Datum Vessel for Helicopter Anti Pollution patrols and as Guardship for the wreck. On Monday 5th at least one vessel was saved from certain disaster and possibly one other. Early am 6th November* Siren *was relieved temporarily by THV* Patricia *who had joined with three additional buoys – and thus* Siren *was able to land Captain Smith at Weymouth before returning to stand by the wreck and await better weather.*

*'Throughout the operation THV* Siren *under Commander Fairplay's command met all her operational commitments most commendably.'*

## Scarweather

Turning now to a lightvessel we read:
***15.8.44.*** *No 91 LV towed from Swansea and laid at Scarweather Station. No 92 LV removed and towed to Swansea. No 91 has Radar Transponder Gear.*
***J R Meyrick, m/v*** **Geo-de-Joly**

**October 25th 1944** per Mr J Lees, Master s/s *Triton:* Inspected No 92 LV at Scarweather LV Station; vessel clean & in good order. Light restored to Full Brilliance pm 24th in accordance with Instructions to Superintendents…

One consistently reads good reports for this hull: *'vessel clean and in good order', 'good working order throughout', 'vessel clean and well maintained', 'the ship was in excellent order and very well kept.'*

No 91 Lightvessel[1] dated from 1937 and was largely stationed in the Bristol Channel after the Second World War. She concluded her service at the Helwick station and was handed over to the City of Swansea Maritime and Industrial Museum for preservation in 1977 where it is understood she remains in fine condition and according to Anthony Lane writing in *Guiding Lights: The Design & Development of the British Lightvessel from 1732* [2], she was one of the very few unaltered lightvessels in the British Isles and faithfully records the layout of the steel vessel as it was designed in the late thirties.

Captain H W T Owen, Superintendent, boarded on 18 April 1956 and wrote in the Order Book: *'Visited from THV* Alert *on minor relief… Television receiver presented by Porthcawl Rotary Club has been fitted and is working satisfactorily.'*

Superintendents and Commanding Officers of District tenders made frequent observations that they had inspected stores, drugs, LSAs (Life Saving Appliances) and explosives (fog signals). In addition a note was made that: *'Crew exercised at fire and boat stations…tested and fired Schermuly Rocket.'*

***Right:*** *No 91 Lightvessel marked the Scarweather and Helwick stations in the Bristol Channel.*


***Far right:*** Alert *was a very busy element of the then Steam Vessel Service undertaking a breadth of operations in our sea area from Berwick upon Tweed to the Solway Firth including the waters of the Channel Islands.*

***Main picture:*** *Diesel-electric lighthouse tender THV* Siren *built by J Samuel White & Company Limited of Cowes, Isle of Wight was commissioned in 1960 and assigned to East Cowes District. She is seen here towing the Royal Sovereign lightvessel.*


*No 92 Lightvessel built by Philip and Son Limited in 1938. The hull was automated in 1996 and converted to solar power.*

**1** Of 325grt with an LOA of 119 feet No 91 Lightvessel was purchased from Philip and Son Limited, shipbuilders & engineers of Dartmouth in the sum of £19,395 and was handed over to Trinity House on 27th November 1937. According to the history of the company *Philip & Son Ltd.*, Shipbuilders & Engineers, by Derek Blackhurst published in 2001 No 91 was damaged in a collision with the steamer Maurice Rose in April 1942 and later that year damaged in a further collision with the steamer *Armathia*.
**2** Published by Tempus Publishing Limited, Stroud, Glos. (ISBN 07524 2115 8).

**Carol Marlow** writes: *'Trinity House's Ambassadors' Group was set up in early 2015. Our aim is for our Younger Brethren members to help raise awareness of the general public in matters maritime, through building an understanding of Trinity House's General Lighthouse Authority responsibilities, including development of aids to navigation, and of our charitable and Fraternity activities, including the cadet bursary schemes and deep sea pilotage activities.*

*'We do that through an entertaining thirty minute talk, which includes a little on where we have come from, what we do now, and what the future may hold, with some great photos and a short film, covering our activities. Our target, set in March last year, was to address 300 members of the public per annum through these presentations to clubs and societies, such as Rotary Clubs, U3A and Probus Groups. However, I am delighted to report that 12 months on, we had presented to 1350 people, and by the beginning of May this year, that had increased to over 2000.*

*'The Ambassadors' broad maritime experience also contributes to Trinity House's social media presence, making the public aware of our various charitable and operational activities via Twitter. As a result our Trinity House followers have increased from 1000 to 5600. We hold regular briefing meetings for Ambassadors and potential new Ambassadors at Trinity House in London, and were delighted to welcome 20 new Younger Brothers in March. With over 20 more presentation fixtures in the diary already for 2016 and 2017, and more coming in, it is great to have new members from different parts of the country, so we can broaden our coverage. We started giving presentations in Essex last year, but are now accepting presentation requests as far afield as Lincolnshire, Hampshire, west Wales and Dorset as well as the Home Counties.*

*'As the group's activities grow, so does the administration behind it, and it is vital for the reputation of Trinity House that the outside world experiences an efficient and effective group. For that I must thank Freddie Sterritt, who does an excellent job, keeping our expanding group moving forward smoothly and our 'customers' well informed. And of course, without interested groups requesting presentations we cannot succeed, so do contact us at* ***Ambassadors@thls.org*** *if you would like us to come and present Trinity House to your group.'*

***Above:*** *Younger Brethren's Ambassadors' Group briefing meeting on 9 March 2016 at Tower Hill, London. Image© by Freddie Sterritt.*





# Around the Service

## STARTERS

*We welcome the following new members of staff who have joined us between September 2015 and April this year.*

### PERMANENT

SVS

**Joseph Riley** – Captain THV *Patricia* (P) – commenced 4 January 2016
**Tristan Burgess** – Permanent Second Officer – Auxiliary commenced 3 February 2016
**Kevin O' Kane** – Permanent Second Officer – Auxiliary commenced 10 February 2016
**Evan Grant** – Permanent Third Engineer – commenced 27 April 2016

Harwich

**Matthew Munson** – Lighthouse Technician (Harwich) – commenced 12 October 2015
**Robert Moodie** – Operations Officer – commenced 19 October 2015
**Clive Bond** – Project Engineer – commenced 4 April 2016
**Natalie Carmichael** – Buyer – commenced 19 April 2016

St Just

**Simon Eade** – Lighthouse Technician (St Just) – commenced 13 April 2016

London

**James Rygate** – Navigation Department Administrator – commenced 1 February 2016

### FIXED TERM

SVS

**Lewis Wood** – Trainee Deck Rating THV *Patricia* (P) – commenced 30 September 2015
**Ronald Dodge-Forder** – Trainee Deck Rating THV *Galatea* (S) – commenced 21 October 2015
**Samuel Whitfield** – Trainee Catering Rating THV *Galatea* (S) commenced 21 October 2015
**Nathan Durrans** – Trainee Deck Rating THV *Patricia* (P) – commenced 11 November 2015
**Thomas Feakins** – Second Officer THV *Patricia* (S) – commenced 24 February 2016
**Lee Johnson** – Second Officer – Auxiliary – commenced 2 March 2016

Harwich

**Jared Seeley** – Lighthouse Technician Apprentice (Harwich) – commenced 28 September 2015
**Charlotte Thurlow** – Light Dues Administrator – commenced 11 January 2016

## PROMOTIONS

SVS

**Steven Banks** – Seaman – commenced 30 September 2015
**Livs Skrundenieks** – Petty Officer Deck – commenced 6 April 2016
**Paul Davis** – Petty Officer Deck – commenced 27 April 2016

London

**Karen Tomalin** – Personal Assistant to Executive Chairman – commenced 26 October 2015
**Rosemary Walsh** – Personal Assistant to Director of Navigational Requirements & Legal and Risk Manager – commenced 21 December 2015

Harwich

**Alwyn Williams** – R&RNAV Principal Development Engineer – commenced 1 January 2016
**Beth Davis** – Senior Buyer – commenced 8 February 2016
**Jenna Pedder** – Trainee Buyer – commenced 1 March 2016
**Trevor Robinson** – Project Engineer – commenced 4 April 2016

### TRANSFER

**Richard Pudney** – Engineering Administrator transferred from Planning – commenced 2 November 2015

### SECONDMENT

**James Charles** – Senior Planner transferred from Second Officer THV *Galatea* – commenced 16 November 2015

### LEAVERS

**Georgina Button** – last day of service 8 September 2015
**Robert Vanston** – last day of service 30 September 2015
**Paul Truckel** – last day of service 30 September 2015
**Louise Harper** – last day of service 9 October 2015
**Daniel Adams** – last day of service 21 October 2015
**Stuart Ramsden** – last day of service 10 December 2015
**Julian Coles** – last day of service 13 December 2015
**Nathan Jones** – last day of service 30 December 2015
**Dianne Foulkes** – last day of service 31 December 2015
**Matthew Summers** – last day of service 31 December 2015
**Jason Kay** – last day of service 31 January 2016
**Malcolm Nicholson** – last day of service 12 February 2016
**Neil Sandquest** – last day of service 2 March 2016
**Ray Siggers** – last day of service 13 March 2016
**Kim Webb** – last day of service 21 April 2016
**Captain Dave Cooper** – last day of service 27 April 2016
**Paul Walton** – last day of service 4 May 2016
**Michael Marchetti** – last day of service 18 May 2016
**Daniel Pritchard** – last day of service 18 May 2016

## New Year Honours List 2016

We send our congratulations to the following who were recorded in HM The Queen's New Year Honours List this year:

**Peter Matthews** Lighthouse Board Non-Executive Director, appointed CBE

**Terry Bravin** CFM, former Senior Buoy Yard Team Member, Swansea Depot, retired in 2011 with 27 years' service, appointed MBE for voluntary and charitable services to young people in South West Wales. (He served as a Warrant Officer with 215 Squadron, (City of Swansea) Air Training Corps).

## The 2015 Trinity House Annual Awards

The Trinity House Annual Awards Ceremony took place at Tower Hill on 19 November, recognising the achievements of several members of staff and some contractors in another busy and successful year, as well as those members of staff who have completed 20 years' service or more as at the 30th September 2015.

## Long Service Awards

Mike Yaxley
Steve Aston
Lee Carter
Kevin Dace
Paul Rands
Guy Evans
Gary Murphy
Lesley Wiles
Chris Johnson
Nichole Lambert-Kelly
Jamie Campbell
Steve Page
Paul Westwood
Lynn Yaxley
Russell Dunham
Karina Deba
Rebecca Roberts
Mark Howard
Paul Kerr
Susan Coleman
Carole Furness
Neil Prowse
Edgar King
Sally Stacey

## Outstanding individual achievement benefitting Trinity House

**Russell Dunham**, for his work on the review of procedures in connection with the evacuation of the Corporation's treasures.
**Neil Jones** and **Nichole Lambert-Kelly** for the 500th Anniversary Scrapbook.
**Mick Campbell** –making the Admiralty Mace Cabinet.
**Barry Messenger** and **Beth Davis** for their work on the Fleet Review Procurement Project.

## Achievement of Job-related professional qualifications 2014/2015

| | |
|---|---|
| **Darren Day** | Degree in Engineering |
| **Phil Hawtin** | HNC in Electronic Engineering |
| **Dave Cooper** | Masters Certificate of Competency |
| **John Chilvers** | MSc in Environmental Management |
| **Sophie Platten** | Masters Orals |
| **Joel Small** | Chief Engineer Certificate of Competency |
| **Sarah Harman** | ACCA Accountancy Qualification |
| **Nick Letch** | Intermediate Apprenticeship – Improving Operational Performance and BTEC Level 3 Diploma in Engineering |
| **Jan Šafář** | PhD Electrical Engineering and Information Technology |

## The Merchant Navy Medal

At a ceremony held in Trinity House on 23 November 2015 **Commodore Ian Gibb**, MBE (Elder Brother) was presented with the Merchant Navy Medal for services to the cruise line sector and to the Royal Alfred Seafarers' Society and the Mission to Seafarers.

***'It was a pleasure to be able to recognise and celebrate the many achievements this year. Many congratulations to all of the Award Winners.'*** Captain Ian McNaught, Executive Chairman.

## Contractors giving exceptionally effective service to Trinity House

**Maintenance Painting Systems Limited** (MPS), for their successful completion of six different stations to a very high standard.
**Mediterráneo Señales Maritimas** (MSM), for the provision of a range of different lighthouse and lightvessel lanterns. Trinity House has a longstanding relationship with MSM who are very well respected, both technically and commercially.

***Left:*** *On 19 November, MSM Managing Director, Ms. Pilar Haro, and Technical Director, Mr. Ignacio Rodríguez receive an Award from Captain Ian McNaught in recognition of their exceptionally effective service in relation to the provision of different lighthouse and lightvessel lanterns.*

## Jerry Wedge

Jerry Wedge, Director of Finance and Support Services, retired at the end of March this year. Executive Chairman Captain McNaught thanked Jerry for his hard work over the last 13 years. Jerry made a significant contribution to the service, notably as our main point of contact with the Department for Transport. He also initiated many internal reviews of systems, processes and structure and worked hard to create a culture that facilitated his department working well together as a united team, resulting in more efficient, effective and modernised ways of working. Jerry has been a knowledgeable, strong and reliable member of the Executive team and his contribution will be missed greatly. We wish Jerry a long and happy retirement.

## Julia King

Julia King, Personal Assistant to the Deputy Master retired on 31 October 2015 after eleven years' service during which time she served Rear-Admiral Sir Jeremy de Halpert and Captain Ian McNaught. She joined Trinity House in 2005 after many years spent in similar posts in the charitable and arts sectors in London. As PA Julia will be remembered for the seamless way in which she conducted administrative support of the Executive Chairman, Directors and the Fraternity of Trinity House. She was a lynchpin in the smooth running of each year's Trinitytide and quarterly meetings of the Corporation's Court and Board. In addition she was the conduit between Trinity House and the Master's Private office. On retirement she moved to Macduff in Banffshire where she has rapidly hoisted in the Caledonian idyll with partner Mike.

## Lizzy Firmin

Lizzy Firmin, HR and Planning Manager, left the service in May to take up the position of Head of HR at the Port of Felixstowe. Lizzy has been a highly valued member of the Senior Management Team for over 10 years, completing a number of organisational wide projects including the modernisation of various terms and conditions and departmental restructures. In more recent times she has worked hard with the Planning Team to develop an open and collaborative approach to the way we coordinate operational delivery. Executive Chairman Captain McNaught remarked that her list of achievements is substantial and thanked her on behalf of the Executive for her contribution to Trinity House. We wish Lizzy all the best for the future.

**Ian Gorvin**, Field Operations Senior Technician married **Julia Nolan** at Lands End on 14 May 2016 with the back drop of Longships Lighthouse.

**Alwyn Idris Williams**, Principal Development Engineer in R&RNAV married **Cristina Jordan Royo** in Puerto de la Cruz, Tenerife, Spain on 27 February 2016. The ceremony was conducted in both Spanish and English in Cristina's home town of Puerto de la Cruz, followed by a party that went on well into the early hours, it was reported.


To **Andy Jackson**, 2nd Officer Support Vessel Service and partner **Katie**, on 13 January 2016, ***Alfie Noah*** weighing 8lb 7oz.

To **Jeff Bloffwitch**, Field Operations Lighthouse Technician and his partner **Kelly**, their second daughter, ***Lucia Jacqueline*** at Bridgend Hospital on 30 December 2015, weighing 4lb ½ oz.

©Ambrose Greenway.

**Captain Sir Miles Wingate**, KCVO, FNI, died on 2 May 2016, aged 92.

He was Deputy Master and Chairman of the Board of Trinity House London from 1976 to 1988 and was a former Treasurer of IALA.

He was born in Wallasey, Cheshire, and educated at Taunton Grammar School, Southampton and Prior Park College, Somerset. Always keen on making a career at sea he joined the Royal Mail Lines Limited as an apprentice in June 1939 and served with that company until he was elected to the Board of Trinity House in 1968.

He first went to sea in June 1939 in *Sirius* (torpedoed 1942) and subsequent moves with the company were in *Sabor* (torpedoed 1943) *Nebraska* (torpedoed 1944), Empire Confidence and *Highland Monarch* throughout the war sailing to South America, the West Indies, the US, India and Australia. In the Mediterranean theatre he took part in the Allied landings in North Africa, Sicily and Salerno. He subsequently served in the Far East theatre of operations until the end of the war.

After obtaining his Master's Certificate in 1949 he was promoted to Chief Officer in 1950.

In peacetime in *Highland Monarch* and later in *Tweed, Lochmanar* (wrecked 1948), *Magdalena* (wrecked 1949), *Andes, Pardo, Ebro* and *Darro* he rose through the Royal Mail Lines ranks trading principally to South America, the West Indies and the US. His first command was in 1957 *(Pardo)* and subsequently he was *Master of Araby, Escalante, Loch Garth, Andes* (the company's flagship), *Ebro* and *Deseado*, all of Royal Mail Lines. During his sea time he also had a year's experience in aggregate in a shipyard standing by new tonnage.

©Ambrose Greenway.

**Captain John Moreshead Barnes** MRIN MNI, former General Manager (Operations) of the Trinity House Lighthouse Service died on 28 August 2015 aged 77.

He served a year's pre-sea training at the School of Navigation, Warsash, emerging a Senior Leading Cadet fully versed in a wide range of nautical subjects having added to his sea experience with a round-trip in RMS *Queen Elizabeth* as a deck boy. In 1959, after a few years with P & O, John Barnes joined the Trinity House Steam Vessel Service and served his first tour of duty as 3rd Officer of the coal burning converted deep sea trawler Triton, engaged on lightvessel relief duties out of Harwich. During the next 20 years John Barnes served in *Alert, Stella, Vestal, Patricia, Mermaid* and *Winston Churchill* including command of the last three vessels following promotion in 1974.

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

In 1990 Trinity House was entering a period of dramatic change and John Barnes was appointed to the new post of General Manager (Operations), second in command to the Director of Operations. He retired in 1998 with 39 years' service and the same year was sworn as a Younger Brother.

On departure he undertook a consultancy for the Middle East Navigation Aids Service, bringing his experience in the establishment of a quality management system to that organisation.

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

**Commander Roger Patrick Swinney,** former Officer-in-Charge THV *Alert* died on 7 November 2015, aged 60. He served 29 years.

Captain Simon Robinson writes: '*Roger Swinney had a long battle with illness throughout which he had maintained his customary good humour and consideration for his family, friends and colleagues.*

*'Roger joined Trinity House in March 1985 as 2nd Officer, having already attained his Master Mariner Certificate in a deep sea career which had included time with P & O cargo division and Middle East Navigation Aids Service (MENAS).*

*'It was generally agreed that Roger could be summed up in two short statements:*

"what a good practical seaman" and (just as importantly) "what a genuinely nice man".

*'Roger's practical seamanship, bolstered by his love of sailing, was of the highest order, particularly in the realm of smaller vessels, and having spent time as Commanding Officer in THL* Vectis*, Roger was the natural choice to be lead Commander during the final stages of the build, and then delivery into service of THV* Alert *and to take on the role of Ship's Senior Master during* Alert*'s early years in the Trinity House fleet. As such Roger was responsible for developing many of the working regimes and practices which remain in place in* Alert *ten years down the line.*

*'While Roger is rightly remembered for his association with the smaller Trinity House vessels, he also sailed in the multi-function tenders, most notably* Patricia *and* Mermaid*, as 2nd Officer, Chief Officer and briefly as Captain – something of which he was justly proud.*

*'Roger was popular with his colleagues and his wide circle of friends. He was unfailingly friendly and considerate, he had a very distinctive self-deprecating sense of humour and was unaffectedly witty. A testament to the way in which Roger was regarded is the fact that around 300 people travelled to Cowes for his funeral, some of whom had not seen him in many years. The Island Sailing Club, of which he was a long term member has since established a racing mark in his memory and bearing his name – a rare honour indeed.*

*'Roger leaves a wife, Liz, to whom I feel sure we would all give our sincere condolences.'*

**Colin Wortley,** District Maintenance Manager died on 15 April 2016, aged 79. He served 52 years.

Colin began his extraordinarily long service at Trinity House when he joined our Thames-side Blackwall workshops in 1952. There are far too many anecdotes and remembrances covering his time at Blackwall to relate here; suffice it to say that he is well-remembered and warmly regarded for his wide-ranging expertise and his humour, not to mention his ever-present cheroot. Around the time that Blackwall closed in the late 1980s, Colin and his family moved to Penzance, where he picked up where he left off, overseeing lighthouse maintenance in the south west; eventually he became District Maintenance Manager, the position he held until retirement. When that depot became the Trinity House National Lighthouse Centre, Colin stayed on to help the smooth running of the museum until his retirement in 2005; he carried on in this vein when he worked closely with the National Maritime Museum Cornwall to bring his wealth of technical expertise to the launch of their highly successful exhibition about Trinity House in 2009.

Colin was appointed MBE in 1994 for services to Trinity House. He is survived by his widow Pat and their children.

## DEATHS

*It is with great sadness we report the deaths of;*

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

**Robert John Prout,** SL LVS, January 2015.

**Cynthia Morris,** CO Cowes, March 2015.

**Christopher Charles Marquis,** Coppersmith, Blackwall on 24 April 2015, aged 55. He served 5 years.

**Michael Seager Hardy,** River Lights Attendant LHS, April 2015.

**Frank Arthur Robinson** BEM, ER1 SVS, May 2015.

**Kevin James Hetherington,** Lightsman LVS on 18 June 2015, aged 69. He served 9 years.

**John Stuart Bell,** PK LHS on 22 July 2015, aged 77. He served 33 years.

**George Anderson,** Seaman AB SVS on 30 July 2015, aged 82. He served 11 years.

**Peter Sanders,** GLA 3 Swansea on 21 August 2015, aged 64. He served 8 years.

**Christopher S Locke,** Craftsman, Swansea on 25 August 2015, aged 57. He served 15 years.

**David Jones,** ER2 SVS, August 2015.

**Timothy Leon Brady,** AK LHS, August 2015.

**Paul Steven Lumley,** Seaman AB SVS, September 2015.

**Norman Nicholson Robertson,** Clerical Officer, London on 2 October 2015, aged 95. He served 4 years.

**George Henry Testa,** Painter, Harwich on 10 October 2015, aged 86. He served 25 years.

**Derek James Gove,** Cook SVS, October 2015.

**Kundan Singh Sahota,** Turner, Blackwall, October 2015.

**Ernest Charles Scott,** SVS & Wharf Bosun, Swansea on 22 November 2015, aged 93. He served 44 years.

**Billie Mitchell,** QM SVS, November 2015.

**Robin Cecil Baldwin,** Bosun SVS on 19 December 2015, aged 77. He served 31 years.

**Donald Cockayne,** Fitter, Blackwall, on 5 January 2016, aged 87. He served 30 years.

**Edmund Lancaster,** Chief Engineer SVSO on 9 January 2016, aged 92. He served 20 years.

**Barry William Walsom,** Chief Engineer SVSO on 9 January 2016, aged 91. He served 15 years.

**Stanley James Barker,** Master LVS on 15 February 2016, aged 95. He served 29 years.

**Peter Gerald Brown,** Watchman, Holyhead on 15 February 2016, aged 79. He served 8 years.

**Leonard James Hawkins,** Fitter, Blackwall on 27 February 2016, aged 93. He served 40 years.

**Michael (Eddie) Matthews,** PK LHS on 4 March 2016, aged 78. He served 40 years.

**Barrie Sturman,** Coxswain SVS on 6 March 2016, aged 81. He served 13 years.

**Herbert William Trail,** Lightsman LVS, on 30 April 2016, aged 91. He served 30 years.

People often ask me,
Of how it came to be,
That I installed windfarms -
In the middle of the harsh North Sea.

Well I'd like to share a story,
It will take 15 minutes of your day,
So I hope you are sitting comfortably –
And I will set this voyage underway.

I'll take you back to 2001,
Where you meet a Yorkshire lad,
Who ticked the box as 'Deck Cadet' -
As there were many adventures to be had.

Six weeks of study shortly followed,
Learning our 1, 2, 3's
Of all the basic safety skills we would need,
Once let loose on the high seas.

For my first trip out at sea,
I flew up to Sullom Voe,
To join a Suez-Max oil tanker -
In the wintery sleet and snow.

We set sail off into the sunset
In December across the Atlantic,
Force12 winds, 30ft waves –
It was hardly near romantic.

From Shetland Isles to Nova Scotia,
On a 300m block of steel,
Shipping Brent Crude to where it was needed –
This was not training this was real.

We made the crossing in just over a week,
I am grateful it did not take any longer,
But as my Grandad used to say –
*'What doesn't kill you makes you stronger'*

Four months passed and finally my turn,
A feeling that is simply the best,
I was paying off – time to see the family,
And of course some well-earned rest.

Over the next 3 years of so,
I sailed the seven seas,
From the highest latitudes to the tropics –
This was the career for me.

Before I knew it the training had ended,
With a pass at the MCA,
I held an Officer of the watch CoC –
And my career was well underway.

I applied for jobs in every sector,
From containerships to tug,
But no-one wanted a young officer –
That was still wet behind the lugs.

Until I came across an advert,
And I thought I would give it a shot,
CV, telephone calls and a flight to Antibes –
I had landed a job on a yacht.

We sailed around the Mediterranean,
With a cargo of rich and famous,
I never found out who they really where –
The guests always remained nameless.

From St. Tropez to Monaco,
Fine wines and menu *a la carte,*
But in the back of my mind there was a niggle –
Scarborough was still in my heart.

Five months later I hung up my deck shoes,
It was enough yachting for me,
Maybe I will come back to this sector one day –
When I win the national lottery.

At 19 years old I could not ask for more -
With the experience and memories I took,
And a new adventure shortly followed –
For now I had a stamp in my book.

I applied for a position as 3rd mate,
For an oil major shipping LNG
I passed the interview by the skin of my teeth –
And before I knew it I was back deep sea.

I joined a ship made in '76,
One of the oldest in the fleet,
But at 19 knots when fully laden –
She was quick to say the least.

She may have been old and rusting at the edges,
But if you have a little belief,
A tin of paint can fix all that –
What matters is what lays underneath.

It was quite strange to be on a tanker,
Where the cargo is never seen,
And after a cargo watch on deck –
Your boiler suit is still quite clean.

In 2008 I was promoted to 2nd mate,
I became higher in the food chain,
But I did not want to settle for this –
There was a chief mate's ticket to gain.

So I took a little time off work,
8 weeks for mates was needed,
I studied hard and battled on –
And in November '08 I succeeded.

Then one day whilst on watch,
Sat at anchor off Fujairah,
I pondered my next career move –
My motivation had started to tire.

Once fed up and looking elsewhere,
I knew it was leaving time,
So shortly I resigned my position onboard
On the 9th of the 9th '09.

Three months down the line,
There was not a job in sight,
The tunnel was long and very dark –
But then someone shone a light.

I met a family friend one day,
He found my predicament absurd,
'You have a mate's ticket and can't get a job –
I email my company a good word'

Before I knew it an email arrived,
From a company in Singapore,
Asking for a telephone interview –
As they wanted to know some more.

The interview went so well,
With an easy going and friendly man,
Who liked to talk about football a lot –
A dedicated Tottenham Hotspur fan.

Before I knew it I was flying again,
This time 15hrs to Singapore,
To join an anchor handling tug –
For my first ever 2 month tour.

A short trip out from west pier by boat,
Passing many a laden tanker,
Round the corner to Sultan Shoal –
Where the vessel laid calmly to her port anchor.

We picked up anchor that very same day,
And headed into the Singapore straits,
At 1800hrs I came on watch –
Which was handed over by the mate.

Anyone will tell you who has been to these parts,
How busy it can be,
Until you pass the Horsburgh lighthouse –
And you are back into the open sea.

Every type of vessel big and small,
A constant stream west and east,
All the skills learned put to the test –
And 100% concentration at the very least.

At 2200hrs we were almost clear,
Passing the naval base at Changi,
En-route for the eastern side of Java –
To a place called Banyuwangi.

I bet you think I have made up this place,
A figment of my imagination,
But google map if you don't believe me
And you will find this unusual named location.

Palm trees, white sands and a glimmering blue sea,
My office can be so nice,
I even celebrated my 27th birthday there –
In a seafarer's perfect paradise.

But paradise can be short lived,
On a 4 on 8 off rotation,
We were soon departing to stand by a rig –
In a featureless, deep blue location.

Trips at sea from this time on,
Seemed to speed up and time did fly,
One day I was unpacking my kitbag,
And the next minute I was saying goodbye.

5 years had passed since I last attended college,
And now I had enough sea time,
To return once more for the final step up
The final summit to climb.

In 2013 I decided to go for it
The last little push for the crest,
To gain a Master Mariners ticket,
And to become the very best.

The final push was short lived,
And the ending was not a fairy-tale,
After one and half hours in the oral exam –
*'I am sorry Mr Corrie you have failed'.*

The first exam I had ever failed,
But this did not make me feel low,
With my head held high I booked in again –
For a second and hopefully more successful go.

The re-sit was booked for later in the year,
But I had a month in-between,
I was asked to sail on board a windfarm vessel –
The strangest looking ship I had ever seen.

The ship was elevated as we approached,
In our small crew transfer boat,
Changing my view on basic principles –
That all ships are meant to stay afloat.

The ship was equipped to say the least,
Entertainment-wise it had the lot,
A gym, sauna and two cinemas –
I had landed back on a yacht?

Hold on a minute – we've had that verse,
It was enough yachting for me,
So here I stood on a six legged jack-up -
Installing windfarms in the middle of the harsh North Sea.

I seem to have missed an important part-
Of my career out at sea,
I passed my Masters on the second attempt-
And now hold the golden CoC.

This is however not the end,
With more experience and knowledge to gain,
Who knows where this adventure will end -
Life should not be boring and plain.

Every career has its pro's and con's,
And advice between you and me,
You already know deep down in your gut –
If you are cut out for a life at sea.

But if you choose to come to sea,
There are oceans of adventures for you,
Don't stop at the horizon – keep on going -
And discover something new.





## Scottish and Manx Lighthouses

By **Ian Cowe**, published by the Northern Lighthouse Heritage Trust 182 pages, ISBN 978 09567209 1 7
Paperback price: **£20.00 / $27.95**
*For orders see* **www.whittlespublishing.com**


Sub-titled *A photographic journey in the footsteps of the Stevensons* this is an inspirational appreciation of Scotland and the Isle of Man's lighthouse heritage and is an excellent compilation. Photographer Ian Cowe journeyed by foot, car, boat and helicopter around this coastline to capture a fine collection. He recalls the exploits of the Stevensons, lighthouse engineers, who battled against the elements for over 150 years. At the same time he records the activities of the keepers. Early lights are shown in comparison to the magnificent Stevenson towers which followed in the 19th and 20th centuries. Formation of the Northern Lighthouse Board in 1786 heralded a unified approach to lighting the Scottish coast. A few years later the young Robert Stevenson entered the narrative, establishing a dynasty of lighthouse engineers from 1772: Robert, Alan, David, Thomas, and their sons to D Alan Stevenson who died in 1971.

Cowe's journey starts at St Abb's Head on the east coast and ends at Chicken Rock south of the Isle of Man. He visits some of the remotest islands in the British Isles and marvels at the Stevensons' engineering wonders including the wave-swept towers at Bell Rock, Skerryvore and Dubh Artach. As well as the lighthouse images, scenery and wildlife are captured. In addition to brief historical accounts of many of the Stevenson lights, the author relates his own experiences of visiting these places and his story shows images of the work and people of the Scottish service today. A distinguished pharologist, HRH The Princess Royal, our Master and Patron of our sister service, the Northern Lighthouse Board provides the preface. Proceeds from the sale of the book will benefit the Northern Lighthouse Heritage Trust.

## Samuel Pepys: Plague, Fire, Revolution

Edited by **Margarette Lincoln**, published by Thames & Hudson with Royal Museums Greenwich, 288 pages ISBN 978 0 500 51814 4
Hardback price: **£29.95**


Samuel Pepys (1633–1703) lived through one of the most exciting and troubled times in British history. He saw the people rise up in the name of liberty and execute their king. He was Master of Trinity House in 1676 and 1685 and is buried in St Olave's Church, Hart Street where the Fraternity of Trinity House worships after its Annual Court.

During the plague of 1665 he endured months of terror when friends and neighbours fell prey to an epidemic disease for which there was no cure, and the following year he witnessed the Great Fire of London. Towards the end of his life Pepys – and the country – suffered further upheaval when his patron, the Catholic James II, was ousted by the Protestant William III and Queen Mary in the Glorious Revolution of 1688.

This book, published to coincide with a major exhibition at the National Maritime Museum, Greenwich, last year explores the public and personal worlds of Pepys, not only a famous diarist whose description of the Fire of London is unequalled, but also an energetic and talented man who rose from modest beginnings to become the greatest naval administrator of the age.

With an introduction by Claire Tomalin, Pepys's award-winning biographer, engaging essays on a range of key topics, and illustrated throughout with a rich variety of paintings, engravings and objects, *Samuel Pepys: Plague, Fire, Revolution* provides a fascinating portrait of the later Stuart Age through the life of someone uniquely placed to experience its triumphs and disasters.

The editor, Dr Margarette Lincoln was Deputy Director at Royal Museums Greenwich from 2007 to 2015.

## Panorama of the Thames:
## *A Riverside View of Georgian London*

By **John R Inglis** & **Jill Sanders**, published by Thames & Hudson, 256 pages. ISBN 978 0 500 51815 1
Hardback price: **£29.95**


Here is a unique and charming record of London as viewed from the Thames at the end of the reign of George IV with fascinating views of Georgian London demonstrating how one of the world's great cities has been shaped by the river that runs through it. In 1829, the London bookseller Samuel Leigh issued an unusual publication that consisted of two hand-coloured aquatint panoramas folded concertina-fashion between hard covers. It was sold as *The Panorama of the Thames from London to Richmond.* One panorama opened out to 60 feet, showing both banks of the Thames from Westminster to Richmond, and the other extended six feet and showed the City of London and the South Bank as viewed from the Old Adelphi buildings in the Strand.

The Leigh panoramas are now rare and this book reproduces a selection of the finest and most interesting portions from both panoramas and makes them available to a wider audience for the first time.

The book starts on the north bank at Twickenham, going down the river to Westminster, passing what were then just villages – Chiswick, Fulham and Chelsea, among others. Images from the six-foot Adelphi panorama continue the story to include the City and the South Bank. Then the journey resumes back up the river on the Surrey side past Wandsworth, Putney, Kew to Richmond.

Each village section has an introductory history. All the waterside communities and most wharves, churches and stately homes are identified, and a gazetteer, divided by village, gives information on the most important landmarks. A special feature of the book is a fold-out reproduction of the entire view from the Adelphi panorama.