Trinity House

flash

The Trinity House journal | Spring 2017 | Issue 26

Safe passage

We talk to one of our Boatswains about how we're working hard to keep our seas safe and protect seafarers

flash

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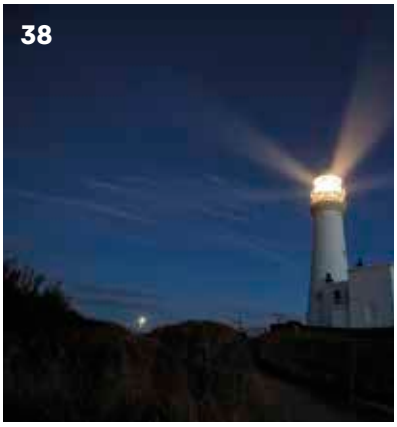

Welcome to your new *Flash* journal

I would like to welcome all readers to your new-look *Flash* journal, the latest iteration of a publication that began in 1958 and has since seen a great many evolutions, both significant and minor.

Deputy Master Sir Gerald Curteis' foreword for the inaugural 1958 issue of *Flash* stated that the object of the magazine was 'to bring us more together and to remind us that we belong to one service.' With that cohesive spirit in mind, this new evolution of our house journal will renew its focus on what makes Trinity House and our mission so important: the people who work for us, the people who work with us and the mariners we serve.

I wish to thank—as always—the many people who contributed to putting this journal together.

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Captain Ian McNaught

Deputy Master

Emergent technologies, integrated planning and better awareness of mariner fatigue are all important elements in safeguarding seafarers and shipping

The ongoing need for efficiencies—properly balanced against the need for the utmost reliability—means that our work as a General Lighthouse Authority demands a high familiarity with new technology. Sometimes this might mean upgrading our lighthouses with LED lanterns, which many of you will be familiar with and can read more about in this journal. Sometimes, though, this can mean a deeper cultural change at Trinity House, such as the Maximo project, our new Maintenance Management Information System (MMIS).

Projects like this help our various departments—spread out across various shore-based locations and three vessels—co-ordinate the resources and work programs needed to keep our aids to navigation service at peak efficiency, ensuring the best service for the mariner and the shipowner.

At the November Court, Admiral Sir George Zambellas was sworn in as an Elder Brother of the Corporation. Being the former First Sea Lord and Chief of Naval Staff—with a keen focus on leadership in technological organisations—he brings a welcome wealth of experience and insight to the Court.

The annual Staff Awards in November highlighted once again the commitment to excellence and ongoing development evidenced in staff around the organisation, celebrating staff members' dedicated service and qualifications earned. I want to take this opportunity to thank all of our staff for their work and reiterate that we have the right people for the job.

I'm also pleased to see one of our vessel crew members feature in the new staff profile, and confident that readers will enjoy reading about—and appreciate—his day-to-day contribution to our aids to navigation service.

Elsewhere in the journal, readers can pick up views from Younger Brother Captain John Rose as well as Director of Navigational Requirements Captain Roger Barker, another new and welcome platform to show the world the expertise we have onside here. John's views on seafarer fatigue—while necessarily his own—certainly reflect an aspect of shipping that we are mindful of.

The potential for fatigue at sea is high due to a range of factors—considered in combination rather than alone—many unique to the marine environment and the seafarers' working experience. Minimal manning, adverse weather conditions and high levels of traffic may find seafarers working long hours with insufficient rest periods. The potential results could include ill health, vessel casualties and environmental damage, among highly skilled seafarers who are in increasingly short supply.

We continue apace with the Fleet Review being led by the three General Lighthouse Authorities, exploring deeper integration and improved planning practices, while also ensuring the right level of support for our vital work at sea and never losing focus on our statutory duty to 'deliver a reliable, efficient and cost-effective aids to navigation service for the benefit and safety of all mariners'.

Trinity House Cadet Lacey Griffin interviewed aboard Sunk Centre Lightvessel

Deputy Master Captain Ian McNaught talks to the ITN film crew

JULY 2016

UK Chamber of Shipping documentary

Trinity House had the pleasure of working with the UK Chamber of Shipping and other maritime organisations such as the UK Hydrographic Office, Institute of Marine Engineering Science & Technology (IMarEST) and Plymouth University Marine Institute to help produce a programme about the multi-faceted and vital UK shipping industry.

On a bright clear day in July, the Port Watch crew of THV *Galatea* welcomed onboard an ITN film crew along with interviewees Deputy Master **Captain Ian McNaught**, Trinity House Cadet **Lacey Griffin** and Younger Brethren **Captain Emma Tiller**, plus **Captain Martin Phipps**, from the Marine Accident Investigation Branch (MAIB) and ABP Southampton's Harbour Master respectively. Each interviewee spoke about the importance of maritime training and skills and the ongoing need for Trinity House's work as a General Lighthouse Authority in our waters.

The Trinity House segment of the programme is available online at Trinity House's YouTube channel (www.youtube.com/trinityhouseuk). The whole programme is on the UK Chamber of Shipping website: www.ukchamberofshipping.com

Nichole Kelly reads at St. Olave's Church

DECEMBER 2016

Carol service

The third annual Carol Service was held on 6 December at St. Olave's Church on Hart Street, London. Led by our Chaplain, the Revd Oliver Ross, it was well attended by Trinity House staff and their partners, members of the Fraternity and residents from the almshouses at Walmer. The congregation heard a number of readings by members of staff and Elder and Younger Brethren before heading to a festive reception at Trinity House.

NOVEMBER 2016

Staff Awards 2016

The annual Trinity House Staff Awards ceremony took place on 8 November, to once again recognise and celebrate achievements by staff and contractors.

First up were the awards for long service (20 years or more), going to **Peter Dobson, Keith Cameron, Joanna Trueman** (pictured), **Michael Williams** and **Marilyn Horne**.

For outstanding individual achievement benefitting Trinity House, awards went to **Darren Day, Peter Dobson** (pictured) and **John Chilvers** (joint, pictured), **Paul Williams** and **Chris Hargreaves** (joint) and **Peter Hill.**

Darren's award was for his innovative new lantern control system that can be used for a single flashing lantern or flashed lanterns in a main/standby arrangement of any range.

Peter and John received their award for their instrumental work in the development of a solar panel monitoring product.

Paul and Chris were awarded for the outstanding contribution they have made to the furtherance of maritime navigation science in the development of eLoran.

Peter was awarded for his work in connection with updating Trinity House's Climate Change Adaptation report which resulted in a letter of thanks from Lord Gardiner, the Defra Minister.

For 'Outstanding Team Achievement Benefitting Trinity House', awards went to the team of **Richard Humphris, Daniel Sime, David Hayes** and **Rob Hepburn**, for their work on the Maximo Project, bringing a complex and challenging solution in to tight timescales and on budget.

Joanna Trueman receives her award

Peter Dobson, centre, and John Chilvers with their awards

Recognising achievement of job-related professional qualifications in 2015/16, awards went to **Ben Lankester** (Masters Certificate of Competency), **Andrew Christopher** (NVQ Level 2 Electrical), **Martin Hamilton** (Chief Mate Certificate of Competency), **Lewis Dale** (Intermediate Apprenticeship – Warehouse Operative), **James Rowe** (Intermediate Apprenticeship – IT, Software, Web & Telecoms Professional), **Shaun Keable** (Diploma in Facilities Management – Level 3), **Kris Askey** (Masters Certificate of Competency), **Chris Akiotu** (NONC Level 2 for working as a Doorman and gaining his Security Industry Authority Licence) and **Chris Bannister** (Second Engineers (Unlimited) Certificate of Competency).

To thank contractors giving exceptionally effective service to Trinity House, awards were presented to representatives of the DTP Group, UK Docks, Workspace Technology Ltd and Welch Refrigeration for, respectively: installation of the Harwich Storage Area Network System; help on numerous marine projects; our Data Centre Upgrade; and for longstanding service to Trinity House.

Then came the awards for individuals, thanking them for their valuable, effective and longstanding service: **Bill Kennett** (Dungeness Lighthouse Attendant), **Ralph Wilson** (ex-Attendant for Holy Island), **Trevor Kendall** (Sark Lighthouse Attendant), **Mark Sythes** (Attendant for Whitby and Flamborough Head Lighthouses) and **J & L Donaldson** (over ten years' service to the East Coast team).

Finally, two Trinity House Cadets collected awards: **Adam Willmott,** for his actions in directly assisting the Commander of the UK Border Force vessel *HMS Valiant* in rescuing six immigrants in the Dover Strait on 26 August 2016; and **Samuel Rimmer**, awarded the John Milner Prize for Navigation by Warsash Maritime Academy, given to the Foundation Degree Deck Cadet who has excelled in his field.

The Nancy Blackett Trust trains with a 28ft Bermudan Cutter

NOVEMBER 2016

Young Brethren Regional Grant Committee

Trinity House has established the Younger Brethren Regional Grant Committee to help the Trinity House Maritime Charity further its charitable works at a regional level. Initial grants have been made to Ocean Youth Trust South for the training of volunteer sea staff, the Nancy Blackett Trust to help maintain a 28ft Bermudan Cutter once owned by the author Arthur Ransome and now used as a training vessel, and the Oarsome Chance Foundation, providing opportunities for young people for exercise and education centred around coastal skiff rowing. See Page 27 for more.

The award ceremony in the library at Trinity House

NOVEMBER 2016

Merchant Navy Medal Service

Trinity House Elder Brother and Director of Navigational Requirements **Captain Roger Barker** was among the recipients of the first Merchant Navy Medals to be awarded since they became a state award last year, presented by the Master HRH The Princess Royal in a ceremony at Trinity House on 15 November 2016.

A total of 14 people were presented with the first Merchant Navy Medals for Meritorious Service, honouring 'meritorious services and acts of courage afloat'.

HRH The Princess Royal said she was delighted to present the medals and said that she hoped they would help raise recognition of the maritime sector: *"Seafarers are not seen enough and their importance to an island nation is not sufficiently valued."* Captain Barker was awarded for services to the welfare of seafarers; he served at sea for 30 years and is now Director of Navigational Requirements at Trinity House. His work for maritime charities included being Deputy Chairman of Seafarers UK.

Following the investiture of the 2015 Merchant Navy Medals at Trinity House on 23 November 2015, the (then) Shipping Minister Robert Goodwill MP announced that a new State Award to be known as the Merchant Navy Medal for Meritorious Service would have a place in the Order of Wear. Her Majesty The Queen graciously signed the Royal Warrant for the new medal.

FEBRUARY 2016

Roger Swinney racing mark at Cowes

A buoy named Roger Swinney was established in February 2016 for twelve months as a racing mark off the entrance to Wootton Creek, to commemorate the late **Commander Roger Swinney**. Roger competed in most Cowes Weeks from 1970 onwards, starting out on his grandfather's yacht *Fidelis* before moving on to campaign his own mini-tonner and quarter tonners. His wife Liz said: *"Roger always thought that 'round the cans' racing in the Solent was a great test of navigational skill so there could be no better way to remember him than to name a racing mark after him as this so wonderfully symbolises both his love of Solent racing and his career with Trinity House."*

We also have the following correction to Commander Swinney's obituary (*Flash* 25): Contrary to the obituary in the last edition of *Flash*, the Roger Swinney buoy was sponsored by Liz Swinney, Roger's widow, through the Cowes Combined Clubs, and not by the Island Sailing Club as previously stated.

1

Europa Point Lighthouse optic on loan

Following the modernisation of Europa Point Lighthouse, Trinity House has agreed a ten-year loan with the University of Gibraltar for the historical Second Order catadioptric optic to be relocated and displayed within the university campus. The optic will be placed in the entrance way of the university. This will make an interesting centrepiece for the university and the community to enjoy.

2

Last Station art project

Artists Mary Hooper and Elise Liversedge have been awarded a grant by the Arts Council of England to tour the *Last Station* artwork which started life aboard ex-Trinity House Lightvessel No. 21. Inspired by the history of the ships and their crews, Elise and Mary created an installation which housed the artists' research and interpretation. Trevor Watts' choral work was performed in Harwich by the Community Choir and they aim to have this performed by the Thames Chamber Choir as part of a touring program. Find out more at www.eliseandmary.co.uk

3

Martlesham 10K run

A team of Trinity House staff entered a team of runners into the Martlesham 10K run to raise money for cancer research and in particular to help their colleague John Chilvers and his family through his illness. All runners trained hard and completed the course in favourable times. Donations towards the chosen charity have so far raised over £2,058. The runners were: John's son Elliot Chilvers, Jenna Pedder, Tom Arculus, Russell Clarke, Beth Davis, Nichole Kelly, Jason Hollands and partner Petra, Rob Race, Lewis Dale, Chris Pearson, Sandie Williams and son Bobby, Phil Hawtin, James Rygate, Lawrence Hughes and Paul Briggs. Well done to all and very best wishes to John and his family.

4

New exhibit at Lizard Lighthouse

The theme for the 2017-18 exhibition at the Lizard Lighthouse Heritage Centre will be the support vessels of Trinity House. The exhibition will present to people of all ages the role of our service and the crews and work of our three vessels, as well as interesting accounts of a career at sea and living and working on a Trinity House vessel. The exhibition will be open from 26 March 2017. Please find opening times and visitor information in the 'Venues, visits and voyages' section of our website.

Younger Brother Lord Mountevans flying the ensign in his role as Lord Mayor of London

Coming events

A brief look at selected highlights from our forthcoming calendar

Lighthouse visitor centres reopen

(various, check website for details)

The following lighthouses that Trinity House opens to the public on a seasonal basis will once again open their doors at Easter: Alderney, Flamborough Head, Longstone, Nash Point, South Stack, Southwold, St. Catherine's and Start Point. Lizard and Portland Bill lighthouses ❶ are open all year round. To find out more information and opening dates and times, please visit www.trinityhouse.co.uk/lighthouse-visitor-centres

Trinitytide ❷

(early June 2017)

The annual Trinitytide dinner and Annual Court will be held at Trinity House for the election of the Corporation's Master, Deputy Master and Wardens, followed by a private service at nearby St. Olave's Church.

Seafarer Awareness Week

(24-30 June 2017)

Seafarers Awareness Week will be 24-30 June, promoting 'Sea Ports for Prosperity' and 'Maritime Jobs at Sea and Ashore'. For further information please visit www.seafarersweek.uk and also follow the cause on Facebook (seafarersawarenessweek) and Twitter (@seafarersweek).

IMO Day of the Seafarer

(25 June 2017)

Day of the Seafarer will be celebrated around the world on 25 June 2017, on social media and at events put together by the International Maritime Organization (IMO). At time of press, the official theme for the day had not been decided. World Maritime Day—another IMO initiative to raise awareness of the importance of the maritime sector—will be celebrated at IMO in the last week of September, the theme for which will be 'Connecting Ships, Ports and People'.

Merchant Navy Day ❸

(3 September 2017)

On Merchant Navy Day, 3 September 2016, the Red Ensign (the official flag of the British Merchant Navy) was flown at more than 400 shore locations—including many Trinity House lighthouses—across our island nation. You can view the full 'Roll of Honour' at www.merchantnavyday.uk Many organisers of flag-hoisting events contributed photographs to a Facebook album: http://bit.ly/MerchantNavyDayPhotos2016. As this year Merchant Navy Day falls on a Sunday, Seafarers UK is encouraging all local councils, owners of historic buildings and other participants to fly the Red Ensign from 1-4 September. Seafarers UK's President, HRH The Earl of Wessex, said: *"I very much hope you will support this campaign to remember the sacrifices, salute the courage and support the future of the often unsung personnel of our Merchant Navy."*

More information is available from Nick Harvey at Seafarers UK. You can email him on nick.harvey@seafarers-uk.org or telephone 020 7932 5969.

Open House London weekend, Trinity House London

(16 September 2017)

Open House London celebrates all that is best about the capital's buildings, places and neighbourhoods. Every September, it gives a unique opportunity to get out and under the skin of London's amazing architecture, with over 700 buildings of all kinds opening their doors to everyone, all for free.

A sea change in awareness

Trinity House's Director of Navigational Requirements **Captain Roger Barker** talks about the impact of offshore developments on bridge team practices

Captain Barker, can you tell us a bit about the impact of changing technology for navigators and bridge teams?

RB Changing practices for bridge teams mean that they are able to make use of a range of technological advances; not only electronic positioning—primarily GPS—but also use of electronic charting and course and track control systems. What this means is that there is a tendency to over-rely on technology, so less-aware navigators may not be paying an appropriate amount of attention to the wider spatial awareness required.

What do these changes mean for Trinity House?

RB We are finding a growing incidence of vessels taking themselves closer to danger; we need to make sure those dangers are clearly marked to improve the awareness of the bridge team of the danger presented. A recent example of this has been the two new buoys we deployed at the north east end of the Varne Bank in the Dover Strait; too many vessels were previously taking themselves closer to danger and we needed to address this. We always make an assessment of aids to navigation we deploy; our analysis has shown that these new physical aids are encouraging the mariner to steer clear of the danger.

How do changing bridge practices fit alongside new offshore developments?

RB Bridge teams are following the same predetermined tracks through routing measures and incidents of close-quarters situations for overtaking vessels is increasing. Once again, this demonstrates the need for an appropriate level of other physical aids to navigation to ensure the mariner has the right level of spatial awareness.


© THV *Patricia* Leading Hand Colin Williams

Congested waters in our area of responsibility are changing, in part as a result of windfarms and other renewable energy sites. We have to ensure that we can safely squeeze existing traffic requirements through tighter corridors. Existing wind farms in approaches to the Thames and other areas such as the Irish Sea are assessed with careful dialogue between all stakeholder groups. Much larger wind farms are now in the planning stage further offshore in the North Sea, and careful consideration is being given to mariner safety in these areas.

Where are the most notable sites that present hazards that mariners need to be aware of?

RB In early preparations for wind farm developments, meteorological masts are often deployed and these present a danger to the mariner; we lay down stringent requirements for the lighting of these structures. The construction phase of wind farms presents possibly the most dangerous period for the mariner and we have close dialogue with regulators and developers to ensure that maximum consideration is given to maritime safety.

Trinity House doesn't work alone in these waters; can you tell us who some of our marine partners are and how we work with them?

RB The Nautical Offshore Renewable Energy Liaison Committee—chaired by the Department for Transport—has membership from all maritime sectors and is a formal basis for dialogue between the parties. Trinity House is particularly grateful for the close liaison with external bodies such as the Maritime and Coastguard Agency, UK Chamber of Shipping, Royal Yachting Association, RNLI and UK Hydrographic Office.

"WE ARE FINDING A GROWING INCIDENCE OF VESSELS TAKING THEMSELVES CLOSER TO DANGER; WE NEED TO MAKE SURE THOSE DANGERS ARE CLEARLY MARKED"

Captain Roger Barker received a Merchant Navy Medal in November

Awards

We send our congratulations to the following members of the Fraternity:

HM The Queen's New Year Honours List 2017
OBE
Robert Neil Robson, CEO Royal Navy and Royal Marines Charity, Younger Brother, for services to Naval personnel.

MBE
Captain Donald Patrick Cockrill FNI, Younger Brother, Secretary-General United Kingdom Maritime Pilots' Association, for voluntary services to maritime pilotage and the port industry.

Merchant Navy Medal for Meritorious Service
Investiture by HRH The Master held at Trinity House on 15 November 2016:
Captain Roger Barker FNI, Elder Brother, for services to the Merchant Navy.
Captain Peter McArthur, Younger Brother, for services to the Merchant Navy.
Captain Philip Rentell FNI LLB, Younger Brother, for services to the Merchant Navy.

New Younger Brethren

We extend a warm welcome to the following who have been sworn in as Younger Brethren of the Corporation of Trinity House:

Captain Dennis Barber, Associate Partner, Marine & Risk Consultants

Captain Donald Patrick Cockrill FNI, Marine Pilot, Port of London Authority

Alexander John Wilmot Douglas Don, Chief Executive, Port of Milford Haven

Dr Kevin Fewster AO FRSA, Director, The Royal Museums Greenwich

James (Jim) Fitzpatrick MP, Labour Member of Parliament for Poplar and Limehouse Constituency

Commander Paul John Hammond RN, Commander Sea Training, Royal Navy

Commander Graham Hockley RN, Secretary to the Corporation of Trinity House

Paul Gregory Kieran Little, Principal & CEO, City of Glasgow College

Captain Peter James McArthur, Marine Pilot, Manchester Ship Canal, Director, Northwest Interaction Limited, Series Editor, Lloyd's Practical Shipping Guides

Guy St John Platten, Chief Executive Officer, UK Chamber of Shipping

Rear-Admiral Simon Paul Williams CVO, The Naval Secretary; Assistant Chief of Naval Staff Personnel, Flag Officer (Reserves)

Welcome aboard

Trinity House welcomes former First Sea Lord Admiral **Sir George Zambellas** to our Fraternity

Admiral Sir George Zambellas GCB DSC DL was sworn in as an Elder Brother of the Corporation at the Court of 22 November 2016.

He was admitted as a Younger Brother in 2009.

Early career

Born in Swansea, his early years were spent in Zimbabwe before his family moved back to the UK. A degree in aeronautical and astronautical engineering cemented a lifelong interest in technology and engineering, but he forsook a subsequent career in the aerospace industry to pursue an ambition to fly with the Navy, qualifying as a helicopter pilot in 1982 and subsequently flying three tours in frigates and carriers.

Background

A graduate of the Higher Command and Staff Course, his staff appointments have included the Directorate of Defence Programmes during the 1996 Strategic Defence Review. Between 2002 and 2004, as a Commodore, he served two Chiefs of the Defence Staff as Principal Staff Officer; he was promoted to Rear Admiral in 2006, entrusted with the Navy's transformation programme, designing and delivering the Fleet's new approach to the delivery of maritime forces and support to operations.

On promotion to Vice Admiral in 2011, Sir George was appointed as Deputy Commander-in-Chief Fleet, becoming Commander-in-Chief Fleet the following year on promotion to Admiral. In this role he also took 4* NATO command responsibility for the Allied Maritime Command at Northwood as it was restructured to be the single Maritime Command within NATO.

First Sea Lord and Chief of Naval Staff

Sir George was appointed First Sea Lord and Chief of Naval Staff in April 2013. As the Royal Navy's professional head and Chairman of the Navy Board, he was responsible to the Secretary of State for Defence for the fighting effectiveness, efficiency and morale of the Royal Navy, Royal Marines and Royal Fleet Auxiliary.

As well as shaping the direction of the Armed Forces as a member of the Defence Council and the Armed Forces Committee, he also advised the Chief of the Defence Staff on maritime aspects of all operations, strategy and policy. He was the Top Level Budget holder for the Naval Sector and advised the Permanent Under Secretary on resource allocation and budgetary planning in the light of defence policy and naval priorities.

Current

Sir George has now returned to his principal interest, and is focusing on leadership in technical businesses that seek breakthrough performance.

Sir George has remained family-based in Dorset throughout his career and is a Deputy Lieutenant.

Strait to the Point

We spoke to Trinity House's Programme Manager **Steve Keddie** about re-engineering the Europa Point Lighthouse in Gibraltar, our most southerly lighthouse

First lit in 1841, Europa Point Lighthouse stands at the southernmost point of Gibraltar. It serves as landfall and waypoint for vessels passing through the Strait of Gibraltar, the gateway between the Atlantic and the Mediterranean. Trinity House assumed responsibility for the lighthouse by Act of Parliament in 1838 and today we continue to operate this vital aid to navigation.

Hi Steve, thank you for talking to us about the engineering project at Europa Point Lighthouse down in Gibraltar. What exactly did we do to improve the lighthouse?

SK The lighthouse had a rotating single optic with an emergency light and we have removed all of the electronics, the optic and the mercury which enabled the optic to rotate, and installed two LED lanterns in its place. The LED lanterns will ensure reliability of the station as well as reducing the frequency of attendant's visits and also creating a more manageable maintenance schedule for the Field Operations team. The electronics were becoming obsolete, so these improvements should ensure that we have this station operational for a further 20 years. It is a standard format for Trinity House; the same electronics and the same standards wherever you go.

Why did we need to do these works? Routine improvements or a change to the navigational requirement?

SK Both. There was a change to the navigational requirement whereby the red sectors were removed and the light has been reduced in range to 18 nautical miles. In addition to this, the electronics were becoming very old and obsolete, so would have been difficult to replace and difficult to maintain. The station was last automated in 1994, so we replaced the electronics, replaced the light and altered the navigational requirement at the same time. During 2010, we had a lightning strike on the station which took it out into a black situation. We have now put lightning protection onto the station. So hopefully, we shouldn't see that situation again.

Gibraltar's a long way from our usual jurisdiction. What's it like working there?

SK Difficult and challenging. The local legislation gave us some challenges—the field operations team working out there all have to carry a permit to work which had to be issued by the Gibraltar government. We were given assistance by the Gibraltar Port Authority in the preparation of the paperwork to enable this. In addition, we had many contractors, very few of whom spoke any English. From a procurement point of view, a number of parts could not be purchased locally so had to be purchased in the UK and then shipped out. So, in terms of logistics for the site it was quite difficult and challenging. At the start of the project, one of the challenges we faced was asbestos within the paintwork. We encapsulated the asbestos within epoxy resin and put many of the electronic cubicles onto boards to negate the need for drilling into the paintwork in the future.

How long did our technicians and engineers spend down in Gibraltar? How did they occupy their downtime?

SK The team started the installation in early August and went through until early December. During that time, there was a team of four working on the lighthouse on a three-week rotation.

Gibraltar is a great place to spend some time; the team is staying in an apartment in the waterfront area and we hope this has given them a chance to enjoy some Mediterranean-style al fresco relaxation in the many restaurants and bars in the area during their hard-earned time off. Certainly a different experience for them from a rock station.

"JAMIE HAMMOND HAS BEEN THE PROJECT MANAGER AND HAS DONE AN AMAZING JOB IN GETTING EVERYONE TOGETHER AT THE RIGHT TIME"

The electronics, optic and mercury were removed from the rotating single optic at Gibraltar's Europa Point Lighthouse. In their place, two LED lanterns were installed

Europa Point's too far for us to monitor in the usual way from our Planning Centre in Harwich. How do we keep an eye on our aid to navigation?

SK Yes, you are absolutely correct. In the past it has been a dial-out system to the port and local police, who in turn would alert the Lighthouse Attendant who would phone the Planning Centre if there were any alarms. However, the project has enabled us to monitor it directly from Harwich through the phone lines in a similar way to other stations that we have around the country. So there's an improvement there in the way we monitor it; we do not have to go through a third party.

What's been the most interesting part of the project for you?

SK The most interesting part for me has been the project management side in terms of getting everything together. Jamie Hammond has been the Project Manager and has done an amazing job in getting everyone together at the right time, as well as obtaining necessary permissions in order for the project to go ahead, such as building inspectors, electrical inspectors, the Gibraltar telecom inspectors, health and safety inspectors and also all of the inspections required by the land registry people—all required by Gibraltar legislation, so quite a challenging piece of work.

What's next for Europa Point Lighthouse?

SK The Gibraltar Government/Land Registry made a request for the lighthouse to become a visitor centre. This idea was looked at and it was decided that if we can get somebody to operate this for us then it would make an ideal visitor centre. There are a few modifications that would need to be made—for example we would need to cover batteries and put a proper staircase up to the optic level. Once we have made these minor modifications it would make an ideal visitor centre. Moreover, the removed optic is going to be placed into the University of Gibraltar. We will have the optic in the entrance way of the university, which will make a great centrepiece for anybody going in to the building, and also for the community. It is great for the artefact to be out on view to the public rather than just storing it inside the tower base. It is great for Trinity House and great for Gibraltar.

Given the logistical challenge at Monkstone Lighthouse, all equipment and materials were transferred via an inflatable boat and hand-winched up the tower. The team stayed at nearby Barry Island and were transported daily by MV Mair

ENGINEERING REVIEW
MONKSTONE LIGHTHOUSE MODERNISATION

A towering achievement

Trinity House Senior Project Engineer **Mike Yaxley** tells us about the modernisation works at Monkstone Lighthouse

Hi Mike, can you tell us a bit about the work we're doing at Monkstone Lighthouse?
MY Our work involved the upgrading of the station aids to navigation and their control systems to current Trinity House standards. We identified Monkstone's requirement for re-engineering based on the risk of increasing maintenance needed to support ageing equipment and supply issues resulting from supporting obsolescent equipment. Making use of modern technology and standardised equipment means that the station's navigational requirements are delivered, maintaining the original light range with a reduction in power consumption and simplified maintenance needs.

Why does Monkstone Lighthouse need modernising?
MY The aim of the project was to completely re-engineer the station—solarised in 1983—to current service standards, fitting equipment that will extend the life of the station for a further 20 years with a minimum maintenance commitment. This included fitting a solar power system that supports a main and standby 12 NM LED light that will reduce the urgency to respond to a main light failure.

We have also installed standardised system monitoring technology that reports back over a radio system to the Planning Centre at Harwich, who can then control the navigation light function.

The project team also considered current maintenance issues, working on a solution to improve access to and replacement of solar power modules. We devised a solution that lowered the modules to a working height—ensuring sufficient solar gain all year—that has provided safe working access to the modules.

Monkstone is in the Bristol Channel. What difficulties do you come across while working on a station such as this one?
MY Monkstone is a small but challenging station that is tight on space internally and externally. This is not one of those walk-up-to-the-front-door locations. Logistically it is challenging; no luxury of helicopter underslung loads or unloading a van here. At low water, the stone tower is 16 metres high and located on an isolated rock. Mounted on this is a GRP cylindrical tower giving a focal plane of some 23 metres, a deceptively tall structure, given that we're dealing with one of the UK's largest rise and fall of tide; at times some 11 metres in range, running at 4.5 to 5 knots.

All equipment and materials were transferred by hand via an inflatable boat and hand-winched up the tower. Heavier items required the use of MV *Mair*'s crane on a suitable slack water high tide. This work was time restrictive, benefiting from the crew of *Mair*'s local knowledge.

Considering the project requirements and deployment of resource that would be involved, we combined Field Operations' Schedule 1 complete painting of the station within the project phasing.

It was apparent that with the limited site space for the intended works it would be necessary to shut down the navigational light for the duration of the works. With the Navigation Department's approval, we agreed the establishment of two temporary lighted Type 2 buoys, as defined by Examiners, close to the lighthouse for the duration of the works.

Who has been working on the project and where do they stay while working on Monkstone?
MY When you reflect on the project process, it is surprising how many people have been involved during its lifecycle. From the mandate, the early days saw the project team building the project through its various stages through the brief and project initiation document (PID) phases, then to the design, construction design and management (CDM), safety, risk, costing, planning and procurement considerations.

In brief, the site phases included the preparation and deployment of the buoys by Swansea Buoy Yard, Marine Operations and THV *Galatea*; erecting and later removing the scaffold, Field Operations to complete scheduled painting and carry out the installation requirements, daily on-site support and welfare facilities being provided by MV *Mair*, commissioning, quality assurance, Examiners' viewing and—finally—removal of the temporary buoys, leaving the station fully operational for the handover back to Field Operations.

In line with the project schedule of works, daily on-site tasks were coordinated and controlled by our site supervisor Jeff Bloffwitch with support from the project team including Jamie Hammond, Chris Harbour and Chris Wroe as necessary. Stuart Mason organised and controlled the painting phase of the lighthouse with Peter Binding and his team on board MV *Mair* providing daily transport from/to Barry Island where the team were staying in local accommodation.

A reassuring presence

Trinity House's Lighthouse Manager **Warren Clarke** writes about how Trinity House is helping the UK Government to monitor radiation levels

The Radioactive Incident Monitoring Network (RIMNET) is a network of 96 monitoring stations used by the UK Government to record and analyse the level of radioactivity across the United Kingdom. A reading is taken from each station every hour and an alert triggered if radiation levels are significantly above normal background levels at one or more stations.

Stations are distributed across the UK; some are concentrated at coastal areas, given the perceived threat of radiation arriving from an overseas incident. Data is collected at a central computer based in a Department for Business, Energy and Industrial Strategy (BEIS) and Met Office building in central London, with a backup computer at a second location. As well as being of use in an emergency, the stations also serve to record historical data on radiation levels.

The original network was set up in 1988 as a response to the Chernobyl disaster in 1986. Following the Fukushima nuclear accident in March 2011, the Chief Inspector from the Office for Nuclear Regulation recommended the system be enhanced to provide greater capability, resulting in the development of the new Rimnet R3M product.

Trinity House was asked to assist with the provision of this national infrastructure system by providing locations for some of these additional new systems.

Nine lighthouses and the Harwich depot were identified as sites which would be suitable for installing the system and required little in the way of listed building permissions. At this time there are eight active stations: Bull Point, Dungeness, Flamborough Head, Point Lynas, Pendeen, St Bees, Tater Du and the Harwich depot. Due to the requirement for listed building consent, the system at North Foreland Lighthouse is still to be installed. Another site has had an issue with communications, and so an alternative site is being investigated.

RIMNET's coastal monitors are designed to detect the threat of radiation from an overseas incident

How it works

The RIMNET mobile monitor measures gamma dose and can return the readings to two designated systems as configured on the RIMNET system. The monitor is mobile in as far as it can be easily relocated. It utilises satellite GPS to identify its location and mobile phone technology (GPRS) to return readings via an e-mail containing the readings in an attachment.

Under normal circumstances, the monitor will return six readings every hour (i.e. a reading every ten minutes). However, the RIMNET system is configured with certain thresholds, meaning that immediate readings will be returned should they be above a specified level.

When the readings are received on RIMNET they are automatically processed and fed into the RIMNET database, which is also the National Nuclear Database. At this stage the readings are also:

- Subject to further analysis, which may trigger automatic forward notifications, e.g. to email or mobile phone
- Available to be queried by RIMNET system users, who may analyse the data and present it, for example, as spreadsheets or visualised overlaid on maps
- Available to the RIMNET Team to configure automatic downloads to export to end users/recipients who don't have access to the RIMNET system.

The new Maximo system is quick and easy

ENGINEERING REVIEW
MAXIMO, MAINTENANCE MANAGEMENT INFORMATION SYSTEM (MMIS)

Working smarter

Trinity House's IT Project Manager **Richard Humphris** provides an update about Maximo, our new Maintenance Management Information System (MMIS)

Hi Richard, please tell us a bit about what Maximo is.
RH Maximo is a web-based system available anywhere with an internet connection. Trinity House uses it to manage the maintenance for our aids to navigation. It allows planned maintenance work and inspections to be scheduled and to record unplanned work such as casualties and incidents. It holds all the navigation and particulars of position information.

Why have we replaced our old system? Why did we go with Maximo?
RH The old system never really fulfilled the original intention of an enterprise maintenance system. It became outmoded and dated. The performance was slow, and too slow for easy use on the vessels, it wasn't intuitive to use, and many processes required going back to the start screen each time. Some screens had superfluous fields, but to change screen layout required expensive consultancy, whereas this software is flexible and can be configured by us to remove unwanted fields and screens, while new attributes can be added.

Where exactly do the improvements lie?
RH Maximo is intuitive, fast and information is much easier to find. Screens have been simplified. Start Centre screens can give relevant information for different departments as soon as they log in. Certain fields only appear if they are relevant, for example if it is a lighthouse, mooring information isn't displayed. Perhaps key is the replication tool which allows the vessels and some Field Operations staff to run the software locally without an internet connection and for changes to be replicated once a connection is available.

How will Maximo improve the way we work?
RH As the system is much quicker and easier to use than the old system, it is no longer seen as a barrier to getting work done or recording information. So the quality and relevance of what's being recorded should be better. We've incorporated the IALA availability categories and priorities. Aids to navigation and work orders can be displayed on Google Maps. It's configured so that a list of the last 50 work logs are visible against a location, which should help the continuity of maintenance at a station.

Who will benefit from Maximo's efficiencies?
RH The software is used by most departments within Trinity House. So Planning, Navigation, Field Operations, vessel crew, Buoy Yard, Commercial and so on. The Engineering Service Desk is due to be brought into Maximo and the stock and procurement modules are also being considered for the future as well as the scheduler for Planning.

Off the beaten track

Trinity House's Engineering and Operations Manager **Simon Millyard** writes about his time with phase two of the annual inspection tour

The Visiting Committee (VC) inspection took a different format this year for the second phase in June 2016. Where previously the VC went by ship, calling in at the various harbours to inspect the lighthouses and beacons in the vicinity, as remained the case for Phase 1 in April, Phase 2 was conducted by road, utilising local boats where needed.

Setting off on the morning of Monday 20 June from Harwich, Director of Operations Commodore Rob Dorey, Director of Navigational Requirements Captain Roger Barker, Marine Operations Manager Captain Tony Wright and I gathered en route and joined up at Southwold Lighthouse, Suffolk. We were met there by Harwich Buoy Yard Team Member Hubert Lilley, who opened up the lighthouse ready for inspection. Later, Ton Damen—recently appointed Director of Business Services—joined the team for the inspections at Lowestoft and Cromer lighthouses.

The purpose of the VC inspection tour—which dates back centuries—is to assess the navigational purpose, performance and general condition of each station and to ensure the Directors' familiarity with the wide and varied estate.

VC1 covered the coast from Harwich to Portland along with the light vessels, while VC2 covered the coast from Harwich to Holy Island in Northumberland and included eleven lighthouses and other Trinity House sea marks and properties.

We stayed in local accommodation overnight and submitted an audit report for each station back to the Management Systems department in Harwich, who process the reports and develop work orders using Maximo, our new Maintenance Management Information System (see Page 15), for any issues that are identified for further action.

At each station we were met by a lighthouse attendant, which enabled the VC members to meet our highly dedicated personnel in the more distant regions and discuss with them the issues specific to the station from the always-welcome local point of view. Each station was then put through its paces, checking failure modes and aid to navigation (AtoN) performance as well as inspecting the general condition and presentation. The stations were found to be in good order and all AtoNs working to specification. The challenges of accessing and maintaining remote island stations were identified and subsequent plans discussed with Field Operations staff for improving conditions on some of these. It was clear that the various attendants were passionate about their role and left the VC members confident that the stations are being well cared for in between Field Operations' visits.

Longstone Lighthouse—fresh from its recent modernisation—was inspected and it was found that the new solar system has significantly reduced the diesel running hours. The rejuvenated visitor centre is also ready for the new tourism season with a much-enhanced display area and public toilet.

Access to some stations was simple by road; access to some others was restricted by local boat and inclement weather conditions and at Holy Island we were restricted by the tide across the causeway.

After a long week driving and visiting stations we headed back south towards home, down the A1 from Seahouses.

Following the inspection tour, the VC inspection sheets have been reviewed and optimised. Looking for efficiencies, it is hoped to integrate the reports directly into Maximo to streamline the process in future years.

On reflection, doing the inspection tour by car provides a low cost and time-efficient way for a small team to conduct the inspections so necessary to our ISO quality system, but it is also hard work with little downtime to reflect on a day's activities. Conversely, VC by ship ties up the ship for the week but enables a larger team to discuss pertinent issues in a measured way with an element of senior level team building combined. This combination appears to have struck the right balance.

1 Approaching Heugh Hill and Guile Point Lighthouses

2 Looking out from the lantern of Southwold Lighthouse, Suffolk

3 Simon Millyard and Director of Navigational Requirements Captain Roger Barker travelling by local boat

4 Carrying supplies to Bamburgh Lighthouse

5 Coquet Lighthouse, Northumberland

Images by Commodore Rob Dorey, Director of Operations

1

2

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ENGINEERING REVIEW
FOUR LIGHTHOUSES IN ONE DAY

My whirlwind tour

Trinity House's new HR Manager **Jenny Dines** describes her first lighthouse visit

'What's the point of sending an HR Manager out to visit lighthouses?' you may ask. Well, finding out what and how we do things, and some of the challenges we face, provides really valuable insight to support not only familiarisation in the role but a greater understanding of the organisation and its people.

Simon Millyard, Engineering and Operations Manager, and I arrived bright and early at St Just on the morning of our visit. A misty start meant that our planned departure out to Longships Lighthouse was delayed and the onward trip to South Lundy was also in doubt. However, the weather cleared and it was helpful to have been able to spend the extra time with the team in the office at St Just.

Following our safety briefing, Simon, Malcom Johns and I heaved ourselves into our flight suits—well I did! Top tip: if you have long hair, tie it up before you try and pull the flight suit over your head. The flight out in the helicopter to Longships was less than ten minutes and landing on the top of the lighthouse was amazing, definitely one of the best things I have ever done. It was a privilege to witness the engineering prowess of the original designers and builders of the lighthouse and how our engineers are continuing with those high standards. Experiencing first-hand the challenge of getting equipment into the lighthouse and managing the ladders and stairs, not to mention the constrained living conditions, was also invaluable.

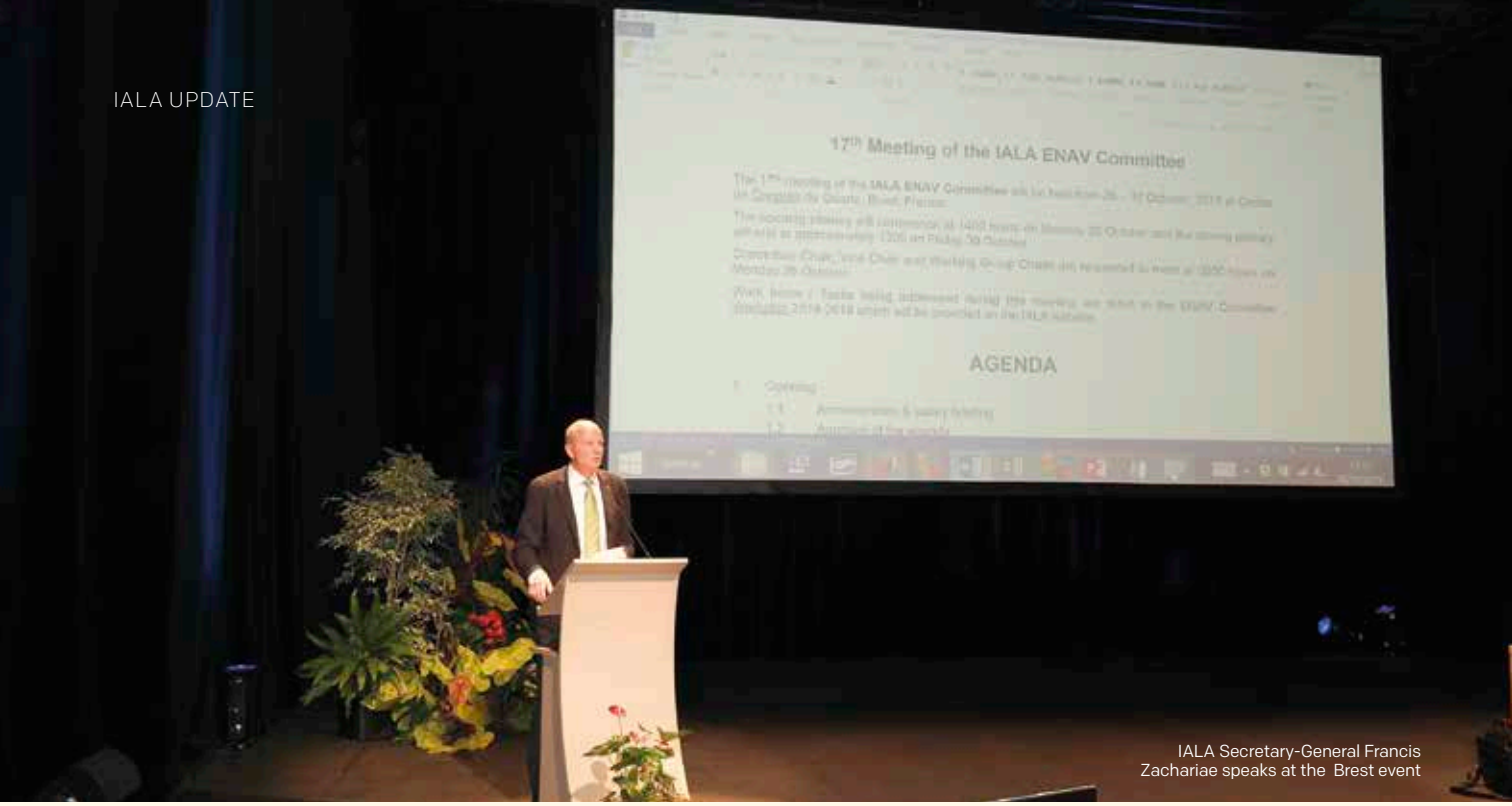
We spent an hour out at Longships and headed back to St Just for a Cornish pasty before Simon and I jumped back in the helicopter for the 50-minute flight up the coast to South Lundy. Some of the team from St Just were there working and gave us a tour of the site. A different set-up here on beautiful Lundy Island, with the old lighthouse keepers' cottage providing single-room accommodation rather than the shared 'banana bunk room' in a rock station. A short flight from South Lundy took us to a heliport near Barnstaple from where we took a taxi out to the third lighthouse of the day. Instow front and rear lighthouses provide a leading line for vessels entering the Taw and Torridge estuary. Again, the Trinity House attention to detail that I had quickly learned to expect was apparent, with immaculate wiring inside the well-kept but small building.

At four weeks into my role, it was perfect timing for a visit that allowed me to immerse myself in the culture of Trinity House. I was able to see how things have evolved, how our heritage and history plays such an important part in our present-day culture, and that the incredibly high standards we work to are a really important part of that; carrying on the tradition but also constantly looking to the future and embracing change that enhances that journey.

Oh, and the fourth lighthouse? A well-earned half of aptly-named Wolf Rock when we reached the hotel at 20.00!

Above: Jenny and Simon on the Longship Lighthouse helipad

Left: Jenny, Simon and Malcolm about to board the tri-GLA helicopter in their flight suits



IALA Secretary-General Francis Zachariae speaks at the Brest event

IALA news and activity

Dispatches from staff contributing to the various Committees of the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA)

Engineering and Sustainability Committee (ENG)

Trinity House's Engineering and Operations Manager, Simon Millyard, is the ENG Chairman. ENG are engaged in updating their existing suite of Recommendations and Guidelines in preparation of IALA's proposed change to intergovernmental status, which will support the seven new International Standards that they will have.

R&RNAV's Dr Alwyn Williams reports that work on updating the IALA Recommendation E-200 Series on marine lights is progressing well. Link Powell gave a presentation on the service condition factors, which was well received by ENG.

Neil Jones reports that ENG's Task Group 4 (Heritage) continues to look at developing good practice documents for the complementary usage of lighthouses, focusing during October's meeting on revising the *IALA Conservation Manual.*

Aid to Navigation (AtoN) Requirements and Management Committee (ARM)

Trinity House's Director of Navigational Requirements, Captain Roger Barker, is Chairman of Working Group (WG) 1 and Deputy Chairman of WG 2 for ARM. ARM are also assessing their recommendations and guidelines in preparation for the proposed change of status. ARM hosted an Automatic Identification System (AIS) AtoN workshop in Seoul in October which was well attended and is helping to steer future requirements for AIS and Mobile AtoN. Roger is also Deputy Chairman of ARM WG 3, Risk Management, recently incorporated into the ARM area of responsibility.

E-navigation (ENAV)

Members of the General Lighthouse Authority (GLA) attended the ENAV19 meeting in September 2016 to support the development of e-navigation and the development of IALA Recommendations and Guidelines on associated topics. They submitted many input papers and Chaired Working Group 5, and led a sub-working group within Working Group 3 (WG3).

During the week, a draft Guideline on R-Mode was written to capture the aims, background, current and future work areas, positioned as an informative document to help guide the development of the technology. A guideline on eLoran service provision was also updated during the week, with a final draft considered at the meeting plenary, where it was carried over as a working paper to ENAV20.

A new Recommendation was developed and approved by the Committee, on the provision, upgrade and future use of Differential Global Satellite Navigation Systems infrastructure and services. The Committee also considered a number of revisions to the format of the IALA NAVGUIDE.

Presentations were given on behalf of EfficienSea2 in plenary and in WG3, on work being carried out to structure VHF Data Exchange System (VDES) documentation and integrate it with that for AIS, as well as supporting work on standards for VDES and Maritime Cloud.

The LED revolution

The emergence of light-emitting diodes heralded a new dawn in light sources. R&RNAV Research Director **Dr Nicholas Ward** describes how their flexible design and increased efficiency and lifespan allow for a wide range of different purposes

The last 50 years have seen a complete revolution in light sources for marine aids to navigation (AtoNs) and the General Lighthouse Authorities of the UK & Ireland (GLA) have been at the forefront of these changes. Half a century ago, most buoys and many lighthouses used gas mantles and acetylene gas cylinders. These gradually gave way to electrification in the 1950s, using incandescent (filament) lamps. The lamps in major lighthouses could be up to 3.5 kW and more than a foot high—this could be where the expression 'more heat than light' came from!

In the 1980s, coinciding with widespread automation, these large, specially made filament lamps were replaced by much more efficient, commercially available discharge lamps, in particular mercury vapour, or MBI lamps. These gave a better, whiter light, using less than a third of the power.

During the 1980s, trials with solar power with electric filament lamps on buoys led to increased reliability and a final move away from gas. Then in the 1990s, the 1 kW and 400 W MBIs in lighthouse rotating optics were replaced by much lower power discharge lamps (35 or 70 W), making conversion to solar power possible, even on major lighthouses, with enormous savings in running costs and maintenance, compared with constant-running diesel generators. Since discharge lamps could not be switched on and off rapidly, flashed lights in fixed optics still used filament light sources, but these were changed to clusters of halogen lamps, giving longer life and better optical characteristics.

However, the real revolution occurred from the beginning of the 21st century with the introduction of light-emitting diodes (LEDs). These gave greatly extended life, more efficiency and flexibility of design, allowing LED arrays to be designed to match existing optics. LEDs were first introduced on buoys, where their reliability and long-life immediately paid dividends in reduced maintenance costs. They are now being installed in lighthouses, allowing further reductions in supporting infrastructure, such as renewable energy systems, which have become the preferred option on all remote sites.

More recently, sector lights have been replaced with LED arrays, designed to meet the particular requirements of stations in terms of sector cut-off, while giving much better colour recognition without the inefficiency of coloured light filters.

LED lights on buoys

LEDs have well defined colour characteristics, so that white, red and green lights are much more readily distinguished than their incandescent predecessors. They also have 'square' flash shapes, with a sharp on and off transition, making lights more conspicuous and easier to identify, even in poor visibility. These advantages are particularly important on buoys, which are also subject to pitch and roll motion caused by waves.

In addition to the longer life, which reduces maintenance visits, the size and weight of LED lights are much less, making replacement easier, especially on a buoy at sea.

LED arrays on lighthouses

Arrays designed and produced by GLA R&RNAV have replaced conventional light sources in many rotating optics, giving a better match between the shape and size of the source and the optic, which in many cases was designed for a much larger filament lamp, or in the older ones for a mantle or wick.

Where shorter ranges are acceptable, commercially available lanterns with circular arrays of LEDs and annular lenses are used in flashing mode. These are simple to install and maintain, by replacement.

However, their output still needs to be measured to ensure that operational performance meets published service levels. This is a specialised service provided by R&RNAV to the GLAs and sometimes other lighthouse authorities.

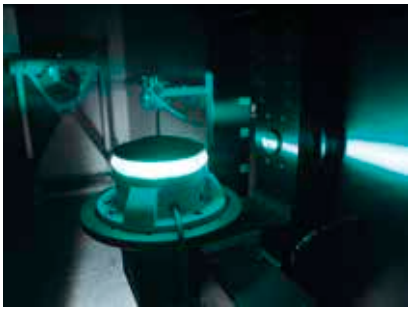
LED sector lights

Filament lamps have continued to be used in sector lights because the lenses were often specially designed for each station to provide the required cut-off and to fit in to the lighthouse structure, often a purpose-built window. Use of LED arrays has allowed the replacement of many of these special lamps, because the design of arrays is flexible and, as with buoys, there is no need for light filters to produce the required colour. Efficiency, cut-off

"LEDs WERE FIRST INTRODUCED ON BUOYS, WHERE THEIR RELIABILITY AND LONG-LIFE IMMEDIATELY PAID DIVIDENDS IN REDUCED MAINTENANCE COSTS"

Below: A green LED buoy lantern being tested on the light measurement facility in Harwich

Below left and bottom: The new LED light developed and produced by the R&RNAV directorate



accuracy and life are all greatly enhanced as a result.

Benefits of LEDs

The main drivers for the introduction of LED sources have been improved performance and efficiency. The performance of the lights has been verified by viewing trials, on-site measurement and testing under controlled conditions on the R&RNAV light ranges. However, the economic benefits have also been very significant and have contributed to the ability of the GLA to reduce overall operating costs. Whenever the use of new, more efficient light sources enabled conversion to solar power, the savings in running costs and reduction in carbon footprint have been very substantial. LED sources have been particularly valuable because of their flexibility of design and long life. On offshore sites, it has been imperative to move away from on-site diesel generation, as this not only entailed high fuel costs, but also high transportation costs, particularly when the usual method was by helicopter with underslung fuel bags. The savings in each of these cases have been of the order of £10,000 and 15 tonnes of carbon per year.

Conclusions

There has been a steady progression in light sources over the history of lighthouses and buoys, but the last two decades have seen the greatest leap forward in both performance and efficiency. This progress, led by the GLA, is likely to continue, enabling them to meet their common mission statement: 'To deliver a reliable, efficient and cost-effective aids to navigation service for the benefit and safety of all mariners'.

Rob with THV Galatea, alongside at Swansea

STAFF PROFILE

Running a tight ship

In the first of a news series looking at various roles around Trinity House, **Rob Torrington** from THV *Galatea*'s Port Watch tells us about the work of the Boatswains

Who is the Boatswain?
The Boatswain—or 'Bosun'—works for the Deck Department onboard as the foreman and head of the department for the ship. The role is the first point of contact between the ships' officers and the deck crew and we have the overall responsibility in ensuring that discipline is maintained.

What does the Boatswain do?
We ensure that deck operations are carried out in a safe and controlled manner, giving out daily duties to individual crew members. We also ensure that all the deck equipment and deck stores are up to date and available for the large variety of work that Trinity House undertakes, be it lighthouse refuelling by helicopter, general buoy work, lightvessel moorings, wreck marking or any other operation to be carried out.

Within recent years, we have also taken on the responsibility of completing personal development plans and reports for the deck department. This has led to us working more closely with the office-based staff while ensuring a high level of training, certification and grading is maintained.

The Boatswain's role within Trinity House
There are four Boatswain within the organisation: John Jones, Gwinfur Roberts, Simon Wakelin and myself. There is one Boatswain on each watch of *Patricia* and *Galatea* and between us we have over 80 years' experience and service within Trinity House. Our role—like Trinity House—is constantly changing and evolving, with new technologies being introduced and new challenges to overcome. But we need to always learn from the past and keep an eye on the traditions and maintain the high levels of seamanship that are expected within Trinity House.

Wake-up call

Captain John Rose MNM, Younger Brother and CHIRP's Director (Maritime), writes about the effect of fatigue at sea

Far too often we read in incident reports of seafarers making mistakes or their failure to follow written procedures, but a closer inspection of the real—and often unreported—causal factor is often related to fatigue.

Fatigue is a silent and yet a significant risk; it can be a very personal issue for some people, perhaps perceived as a sign of weakness or a reluctance to delegate the task, rather than a sign to step back and continue later.

Fatigue-related issues must be a shared responsibility between owners, operators and shipboard crew. Failure to recognise fatigue can cause people—at sea or ashore—to make errors. These often result in expensive claims that will directly impact the company's financial bottom line.

For the ship's master, mounting paperwork means that the navigation of the ship—a vital shipboard operation, especially on coastal trades—routinely occupies less than 15% of his time. Furthermore, port-related administration needs better understanding and the goodwill of the port states needs to be encouraged.

Charterers of ships could also help to reduce the administrative burden on ships' officers, particularly relevant in the short sea trades which result in a high number of port visits, coupled with the lean 'minimum' manning levels as is seen all too often on these vessels. Why do we continue to see charter parties commencing on hire at 00.00 hours? Setting the standard as 12.00 hours would reduce the impact on the crew's rest hours.

Engineers are also at risk; increasingly complex integrated control and alarm systems within the unmanned engine room have created new challenges. Investigating the reason for an alarm during the night creates broken sleep and yet the assigned duty engineer will still 'turn-to' as per his routine schedule on the following day, which might well involve a port arrival at which time the engineers will need to be particularly vigilant.

Officers who use the method of 'flogging' log books to demonstrate compliance with rest hours regulations should be made liable for this deliberate breach of regulations. Ship managers should be challenged and accountable for non-compliance with the crew's inability to comply with rest hours regulations due to agreeing to a two-watch system, particularly on coastal trade vessels.

We all need to wake up to the very real risks associated with fatigue.

"MOUNTING PAPERWORK MEANS THAT NAVIGATION ROUTINELY OCCUPIES LESS THAN 15% OF A SHIP MASTER'S TIME"

Charity update

It has been a busy and gratifying year for the **Trinity House Maritime Charity**, perhaps more so than usual. New developments and charitable initiatives now sit alongside our longstanding duties as we explore new ways to educate and support the mariner

HRH The Princess Royal addresses the conference

PROJECT ULYSSES

Focus on skills for ship-to-shore switch

The work that has perhaps generated the most headlines is our involvement with Project Ulysses, a venture that aims to identify the UK ex-officer seafarer skill sets that are perceived to be lacking by UK shore-based employers.

The research was commissioned by a committee comprising Trinity House, Maritime London, Nautilus International, the Merchant Navy Training Board (MNTB) and the Marine Society. The committee wanted to understand what training or upskilling—if any—is needed to ensure that seafarers wishing to take shore jobs are best prepared and more attractive to employers. The findings of the report were presented to the 'Ship to Shore: What's Missing for the Seafarer?' conference at Trinity House on 17 October 2016. Chaired by the Master, HRH The Princess Royal, the-then Lord Mayor of London (and Younger Brother) Lord Mountevans summarised the project and its findings before speakers followed up with the five areas recommended by the project report. These included MNTB's training and careers coordinator and former Trinity House Cadet Fena Boyle, who herself made the break from a sea career.

The project was borne out of Lord Mountevans' wide-ranging *Maritime Growth Study,* Recommendation 8 of which highlighted the need to understand the additional skills and education that may be required by a former seafarer to enhance his or her future value to an employer.

BLUE MERMAID

Barge build backed

The Maritime Charity has supported—through a capital contribution—the construction of *Blue Mermaid*, a new barge based on an old design being driven by the Sea Change Sailing Trust charity.

The Sea Change Sailing Trust aims to change the lives of young people, particularly NEETs (Not in Education, Employment or Training), through sailing experiences on Thames barges, which are good for teamwork and offer long-term mentoring relationships. The construction of *Blue Mermaid* will now give Sea Change their own barge and lower their running costs.

IALA WORLD-WIDE ACADEMY

Support for team

Trinity House recently made a significant grant in support of the fast-growing World-Wide Academy being run by IALA.

The Academy needs a third full-time member of staff to help keep up with the high demand placed on the team, having already completed some 20 seminars, technical missions, training workshops and regional cooperation meetings as far afield as Suriname, Cambodia and Fiji. It is a huge programme, with reports showing that the Academy is making a significant impact in improving AtoN provision and management in developing countries. For more information about IALA and the World-Wide Academy, see our article on pages 30-33.

The *Blue Mermaid* will offer experience of barge sailing on the Thames

TRINITY VILLAGE, SOUTHWARK

A new landmark

Trinity Village, situated almost due south of Trinity House on the other side of the Thames, is a former farm, bought by the Elder Brethren for £1,669 in 1660. Today, the rent from its more than 200 residential properties and eleven commercial properties generates around £6 million, which is used to further the Charity's purposes.

Two of the commercial properties have recently reverted to the Charity and in partnership with a developer, Acorn Galliard, the buildings are being demolished to be replaced with a new building containing some 62 flats, including affordable housing and some commercial space. The building should be complete by the end of 2018 and the Charity's share of the flats is expected to generate an extra £500,000 a year in income.

This will bring a significant boost to the charity and the support it is able to provide to its beneficiaries and trainees.

Find out more about Trinity Village at www.trinityvillage.co.uk

An artist's impression of the new building

CHARITABLE GRANTS

Recent help ranges from rooms and radios to paddles and apprenticeships

In July 2016, we renewed the rolling grants for our annual Designated Beneficiaries—including The Mary Rose Trust, Combat Stress, Sailors' Children's Society and Seafarers UK—totalling over £1.12 million.

In terms of charitable grants to other organisations—principally maritime charities in need of funding—the Trinity House Maritime Charity makes too many to describe in full; a small number of interesting examples are described in brief here.

One of the major grants saw the Maritime Charity provide **Veterans Aid** with funding for two bedrooms within their New Belvedere House hostel specifically for navy and marine veterans. Veterans Aid have provided hostel and other accommodation for ex-servicemen and women in crisis over the last 80 years. The hostel is constantly full and the staff are trained to deal with the mental, physical, psychological and behavioural issues that the ex-servicemen may have, and also provide training, IT, health, social and recreational facilities.

A number of smaller but no less worthy grants saw funding go to the **Queen Alexandra Hospital Home** towards a new wheelchair clinic to help seafaring beneficiaries get proper wheelchair maintenance. The **5th Woodbridge Sea Scouts** also received funding to replace a variety of much-needed items such as VHF radios, buoyancy aids and dinghy paddles. And the Maritime Charity also provided financing to the **Whitby Fishing School** towards the employment of a training co-ordinator and a pastoral carer as part of their new apprenticeship scheme.

RONA II

Flagship yacht funded

The Maritime Charity has awarded the **Rona Sailing Project** (RSP) £10,000 towards their flagship *Rona II*'s new mast and rigging fund.

The RSP is one of the oldest sail training organisations in the UK, established over 50 years ago; in that time they have taken over 20,000 young people to sea. *Rona II*, an Oyster 68, is one of three vessels they operate. Since 1991 she has been one of the world's hardest-working and most resilient Oyster yachts, taking more than 7,200 young people sailing, completing 21 International and three Transatlantic Tall Ships Campaigns and has run more than 250,000 nautical miles in her career to date. This marks the third year in a row that Trinity House has provided financial support to the project.

REGIONAL GRANT COMMITTEES

First three grants made

Seeing an opportunity for the work of the Trinity House Maritime Charity to be more effective at a regional level, Trinity House has tasked a number of its Younger Brethren to establish the Younger Brethren Regional Grant Committees. There are now six committees—each comprised of a chairman and two to four other YBs—covering Scotland and Northern Ireland, North, West (including Wales), East, South West and South East England.

Initial grants have been made to **Ocean Youth Trust South** for the training of volunteer sea staff, the **Nancy Blackett Trust** to help maintain a 28ft Bermudan Cutter once owned by author Arthur Ransome and now used as a training vessel, and the **Oarsome Chance Foundation**, providing opportunities for young people for exercise and education centred around coastal skiff rowing.

This is a very exciting new development in Trinity House's five centuries as a charity and we look forward to seeing how local engagement helps us better support the mariner.

CHARITY PROFILE: SHIPWRECKED MARINERS' SOCIETY

Invaluable assistance for seafarers' families

The **Shipwrecked Fishermen and Mariners' Royal Benevolent Society,** or Shipwrecked Mariners' Society as it's more commonly known, was founded in 1839 to assist the survivors of shipwreck and to support the widows and orphans of those lost at sea.

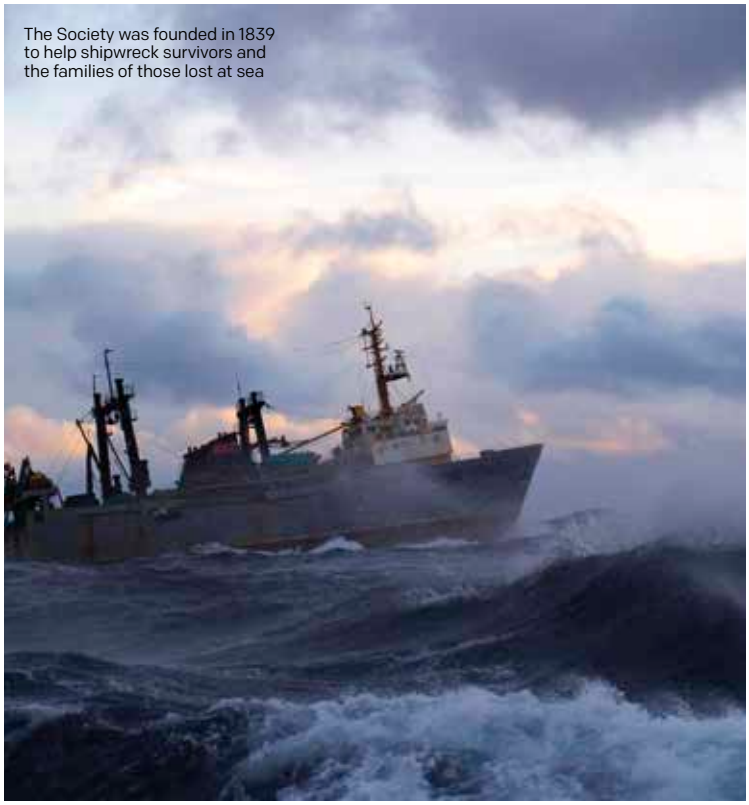
Today, the Society is one of the largest maritime charities operating throughout the UK and Ireland, and its main function is benevolence and the payment of discretionary grants through its countrywide network of Honorary Agents.

The Shipwrecked Mariners' Society provides financial help to merchant seafarers, fishermen and their dependants who are in need.

It pays an immediate grant to the widow of a serving seafarer who dies, whether death occurs at sea or ashore.

Regular grants are paid to former seafarers, their widows and partners, whose circumstances justify ongoing support. Special grants are made to meet particular needs in crisis situations. Practical assistance is given to seafarers of any nationality shipwrecked on the coast of the British Isles.

Find out more at www.shipwreckedmariners.org.uk



The Society was founded in 1839 to help shipwreck survivors and the families of those lost at sea

Sea to land: How the Merchant Navy opens doors

BY **SAM WRIGHT**

Trinity House Yeoman **Sam Wright** writes about coming ashore as part of a maritime career

Whenever I tell people that I worked at sea as a Merchant Navy Officer, the first thing I get asked is: "Do you miss that life?" There is, of course, a short and long answer to this question. In brief I can say yes, of course I do. However, for the sake of this piece, I feel I will probably need to go into slightly more depth than that, so I will furnish you with a long answer.

Even considering the rose-tinted glasses through which one views the past, there are instances I can pick out, memories of perfect moments which I know will never leave me until the day I die. Singing *Hotel California* with nearly the entire Filipino crew while eating hog-roast from a horse trough on the aft deck of a reefer-container. Standing out on a bridge wing in the middle of the night, waves pounding against the hull, knowing that right now I am responsible for this nigh-on billion dollar asset. Yes, I know that the Captain is ultimately responsible, but allow me my moment of whimsy.

However, it is most important for me to recognise that not only did my career at sea provide me with some of the best moments that I can imagine, but it also provided me as secure a footing for my current path as I could ever hope for.

While I am eminently capable of writing about my current job for a great deal longer than the word limit allowed here, I will attempt to provide you with a succinct snapshot without making you lose the will to live. I promise, it's not as boring as the acronyms we use may sometimes suggest.

My current job is a Marine Planner, working under the auspices of the Marine Management Organisation, a non-departmental public body sitting under Defra. Rather than holding watches each day, helping with cargo-ops or lowering an anchor, I spend most of my days talking to people about how they want the seas around England to develop over the next 20 years; more specifically for me the North West Coast. I talk to everyone, be it fishermen, ports, sailing clubs, councils, the RSPB, nuclear power stations—the list just goes on and on. Whereas on board I would look out of the window and see sailing boats, fish farms, wind turbines or even whales as navigational hazards, I now see each of them as an opportunity or challenge waiting to be tapped into. What is the best way of making them all play nice for their own benefit, as well as that of the country as a whole?

"I CAN'T HELP BUT FEEL A TUG AT THE HEART THAT I SHOULD BE ON THAT BRIDGE"

Now the obvious question is how my previous job possibly relates to my current one. Is it merely that floating around on the sea for a while has given you carte blanche to understanding all of it? Of course not. It would be a foolish person indeed who, in their mid-twenties, claims to know all there is to know about the sea. Indeed, I would like to challenge anyone, no matter how wizened and salty, to swear under oath that they understand everything there is to know about the topic. What I would claim though is that a Merchant Navy career did provide me with a solid base from which to tackle these new and exciting questions.

When I first started as a Cadet I was naïve and, frankly, cocky. After all, it couldn't all be that hard could it? Of course, that was just plain wrong. Being at sea is both the most rewarding and challenging thing I have ever experienced. You are not gently stroked into shape, nor are you spoonfed what you need to know. You are beaten (metaphorically of course) into shape. You either sink or you swim. If you hold onto the idea that you know anything about your new life, then you will sink. You have to listen and learn, from both the good practices and the bad. You are, to use a favourite college phrase, a sponge. Without warning, you are thrust into responsibility and have to grow up and work with it or go home and lose the best opportunities that come your way. You will make mistakes. Oh so

many. But if you learn from each, you will emerge so much stronger on the other side. Of course, you don't realise it at the time—you are too distracted by the nerves of giving a life raft demonstration to 80 crew members where the canister didn't open. After that, how intimidating can any meeting be? How about holding a solo watch where at 02.00 you get a mayday from a sinking yacht? How about that first call when a fire has broken out onboard and you have to remember the first six things on the checklist right now?

When I finally stepped ashore for the last time, I had not only learned about the diverse activities that take place in the marine environment (the knowledge of which would, of course, stand me in good stead for my current role), I had also learnt how to shut up and learn like a sponge (a necessary skill when dealing with the huge number of sectors and legislation currently vying for our attention). I had learned to cope with the stresses and crises which evolve out of any job or life, dealing with each with a calm I certainly never had before setting foot on a ship. I had learned to multitask like a pro; I started studying a law degree at sea and see no reason to stop now, so bring it on!

Coming ashore was by far one of the biggest decisions of my life. Every time I tour a port in a shirt and tie, or sit on a beach and see a vessel sailing down an estuary, I can't help but feel a tug at the heart that I should be on that bridge. But I also know that the time I spent there, even if it has been too brief for my own nostalgia, has given me skills and a frame of mind which will set me up for the rest of my life.

YEOMAN PHOTOS

Sam's article was the winning entry in the writing and photography competition held by the Yeomen Scheme. We'd like to thank all of the Yeomen who took part and will always welcome articles and photos from all Cadets, past and present. Here we have the winner and the runner-up of the photo competition. Congratulations to Andrew Corrie for his photo of a strawberry carefully grown at sea. He wins a ship's clock made by Aquascutum.

Top: Andrew Corrie's winning photo of a strawberry grown at sea

Bottom: Yeoman Stuart McNeill's runner-up photo of his first trip as a 2nd Officer onboard the *Scot Pioneer*, leaving Parnu, Estonia, with an icebreaker making a passage through the ice

A lateral buoy off
the coast of Colombia.
Photo: Almarin, Spain

Partner profile: IALA

WORDS: **NEIL JONES, EDITOR**

We look at how IALA is working to ensure its vision of *'Successful voyages, sustainable planet'*

Established in 1957, the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) is a not-for-profit, international technical association of marine aids to navigation authorities, manufacturers, consultants and scientific and training institutes from across the globe. Assembled regularly, they exchange and compare experiences and knowledge for the improvement and harmonisation of navigation services worldwide.

Origins

In 1956, Mr P J G van Diggelen wrote a letter to maritime agencies around the globe *"to propose the establishment of the most simple and effective organization, viz. an international association of lighthouse authorities"*. Subsequently IALA was constituted to replace the loosely-assembled International Lighthouse Conference which had been responsible for a number of significant international accords since the late 1920s. Perhaps its most notable achievement so far is the IALA Maritime Buoyage System, implemented in 1977 to address the sometimes disastrous mix of over 30 buoyage systems being used worldwide.

Today, a small Secretariat—based at IALA Headquarters in Saint-Germain-en-Laye, France—is supported by officers seconded from national members and led by a Secretary-General, who works closely with the Deputy Secretary-General, the Dean of the IALA World-Wide Academy, and other senior staff to shape the direction of the organisation and manage its operations.

IALA Membership—National, Industrial, Associate and Honorary—comprises a large number of national authorities, agencies, private companies and individuals involved in the provision and management of aids to navigation (AtoN) across the globe. Trinity House is a National member.

IALA is also increasingly engaged with the expanding maritime development in emerging countries as they seek to build their national economies. IALA provides a means for coastal states to draw from an efficient global network of AtoN and services for the safety of navigation, through capacity building and the sharing of expertise.

Vision

IALA seeks to ensure that AtoN systems and related services—including e-Navigation, Vessel Traffic Services and emerging technologies—are harmonised through international cooperation and the provision of Standards. The creation and management of Standards is central to the Strategic Vision; Standards are the top level of technical documents, which are supported by Recommendations at the second level (suitable for management) and Guidelines at the third level, carrying considerable technical content.

A primary driver towards the harmonisation goal is the creation of technical guidance documents for AtoN including vessel traffic services. This work is carried out by four technical Committees, currently busy with the 2014-18 work programme.

The Committees

The **ARM Committee** deals with high-level aspects of requirements and management of aids to navigation systems and marine spatial planning.

The **ENG Committee** reviews the existing Guidelines and Recommendations to ensure that they provide excellent information to support the range of technical activities required to design, install and maintain AtoN in an efficient and environmentally responsible manner.

The **VTS Committee** deals with all aspects of Vessel Traffic Services such as implementation, operations, equipment requirement, technology, training and certification.

The **ENAV Committee** deals with all aspects of the development and implementation of e-Navigation including data modelling and message systems, communications, shore technical infrastructure, testbeds and Maritime Service Portfolios.

In a supporting role, the **Legal Advisory Panel** (LAP) is an advisory body to the IALA Council. During 2015, the focus of the LAP was on supporting the Council on governance with the development of a set of Basic Documents for IALA comprising General Regulations, Financial Regulations and other high-level procedural documents.

The World-Wide Academy

The Academy was created on 1 January 2012 as an integral part of IALA—but financed independently—to provide training in lesser-developed countries in the establishment and operation of AtoN and VTSs. Demand for the Academy's assistance continues to grow around the world, and 2015 was a significant year for the Academy with the recruitment of a full-time Programme Manager to administer its new Master Plan for the delivery of training and capacity building (the development and strengthening of human and institutional resources) with tight budgetary limits. AtoN Competent Authorities in developing countries are obliged to deliver AtoN services, but sometimes lack the capacity to do so. The Academy facilitates that process through technical missions and training events under the United Nations banner of 'Delivering as One'.

Change of status to IGO

At its XIIth session held in Spain in May 2014, the IALA General Assembly adopted a resolution stating its belief that becoming an intergovernmental organisation (IGO) would best facilitate IALA's aims in the 21st century. They determined that the new status should be achieved as soon as possible through the development of an international treaty instrument. It is hoped that the draft Convention on the International Organization for Marine Aids to Navigation (IALA Convention) will be put forward for adoption at the next scheduled IALA Conference, to be held in Incheon, South Korea, in May 2018.

IGO status will strengthen IALA's existing cooperation with its partner international organisations and enhance significantly the international endorsement of IALA's activities and the standards it seeks to achieve to improve and harmonise aids to navigation worldwide.

The envisaged new convention will meet the requirements of the Vienna Convention for International Treaties and supersede the present IALA Constitution. Elevating IALA's status to that of an IGO will make it a peer to organisations like the International Maritime Organization (IMO), the International Telecommunication Union (ITU), the World Meteorological Organization (WMO) and the International Hydrographic Organization (IHO).

This will not change IALA's principal aim to 'foster the safe, economic and efficient movement of vessels.'

Working with Trinity House

Addressing the Trinity House Younger Brethren's Dinner on 17 February 2016, IALA Secretary-General Francis Zachariae said:

"May I start by saying how helpful and indeed how indispensable the input of Trinity House is to the work of IALA.

"Effective cooperation that brings tangible benefits to all concerned is of course not for the faint-hearted, and Trinity House is to be congratulated for both facilitating it within IALA and excelling in it on its part.

"I wish to thank the Deputy Master, Captain Ian McNaught, for his tremendous support as Council Member and as IALA Treasurer, and also Captain Roger Barker, Director of Navigational Requirements.

"I have also particularly appreciated the assistance of Jon Price, who succeeded me as chairman of IALA's Legal Advisory Panel. Several other Trinity House senior managers sit on IALA's technical committees where they do invaluable work.

"We at IALA are also very pleased that the immediate past Deputy Master, Rear Admiral Sir Jeremy de Halpert, continues to support IALA as a Board Member of our World Wide Academy."

"IGO STATUS WILL STRENGTHEN IALA's COOPERATION WITH PARTNER ORGANISATIONS AND ENHANCE SIGNIFICANTLY THE INTERNATIONAL ENDORSEMENT OF ITS ACTIVITIES AND STANDARDS"

IALA

IALA is a non-profit, international technical association that brings together marine aids to navigation authorities, manufacturers, consultants and scientific and training institutes from across the world.

IALA has two goals for achievement by 2026. Goal 1 is to: "Ensure that aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, are harmonised through international cooperation and the provision of standards"; Goal 2 is that: "All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise."

Find out more at www.iala-aism.org

The ARM Committee portrait taken during the Seoul workshop's technical tour

Photo: Mediterráneo Señales Marítimas, Spain

Buoy working off the coast of Spain

Adapting to climate change

Trinity House Estates Manager **Peter Hill** explains how Trinity House is managing climate change adaptation

All Trinity House staff who attended one of our 2016 Environmental Working Group Roadshow events will be well aware of some of our initiatives to reduce emissions of greenhouse gases such as carbon monoxide and carbon dioxide. These gases are known to be a major contributor to global warming and associated climate change. Through the Paris Agreement, most countries have agreed to take measures to restrict the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit this increase to 1.5°C.

Trinity House is proud of its success in reducing its carbon footprint and continues to look at innovative ways to make further reductions. However, even if the objectives of the Paris agreement are met, global warming is a fact that is already resulting in the melting of polar ice and, as it continues, is predicted to lead to an increase in extreme weather events and a rise in sea levels of up to 0.5 metres by the end of this century, according to the fifth Assessment Report by the Intergovernmental Panel on Climate Change (IPCC-AR5). So, what are the implications for Trinity House and what are we doing about it? This is a question we, and certain other statutory undertakers, were asked directly by Defra some years ago. In response, we produced our first Climate Change Adaptation Report in 2011. This set out four risk areas and our action plan for addressing those risks.

The unpredictable nature of the sea and weather has been at the heart of what Trinity House does for over 500 years. As such, the local effects of climate change may be seen as an acceleration of the forces we are already adept at working with. Most of the lighthouse estate is built either to withstand sea water and wave activity or on high land well above sea level. As such, we are confident that the majority of our estate is fit for purpose, even allowing for a one-metre rise in sea levels.

Boat landings by their nature are at sea level but can generally be adapted where necessary to respond to such increases. To ensure best value, when significant engineering works are planned for facilities that are vulnerable to rising sea level, future increased sea levels will need to be taken into account. Our pier at Harwich is perhaps the most vulnerable—it is already over-washed when weather and tide combine forces and it may require major adaption at some point in the future.

Cliff and shore erosion will accelerate as higher sea levels combine with increased storms. Some of Trinity House's lighthouse estate is known to be vulnerable to erosion and this needs ongoing monitoring. Again, climate change is now factored into relevant plans for major engineering works and in each such case, the future viability (factoring in climate change) of the facility in question is considered.

It is thought likely that global warming will result in an increase in storm activity. This leaves the potential for an increase in wrecks that would certainly impact upon Trinity House's activity.

Rising temperatures may have other consequences for employers, such as how they maintain a comfortable office environment. Such rising temperatures may also enhance the British holiday season with consequences for the parts of the estate that are used as holiday cottages.

Of course, this is not the full extent of the potential impacts from climate change. Other more global impacts such as shifting populations, shipping routes and so on may have far more significant knock-on effects on Trinity House and will need regular review.

Having previously been asked how we were responding to the threat of climate change, we were more recently asked by Defra how we were getting along with adaptation. In response, Trinity House produced an adaptation progress report in 2016. We were pleased to show how climate change adaptation had become embedded in our processes and how this contributes to our continued success in achieving ISO 14001 certification.

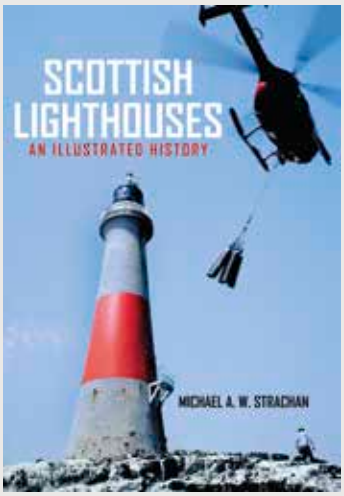
We were proud to conclude that overall, Trinity House remains confident of its ability to adapt to climate change.

THV *Patricia* in St Ives Bay

Increased storm activity presents the increased risk of maritime casualties

Longships Lighthouse

Book reviews



Scottish Lighthouses: An Illustrated History

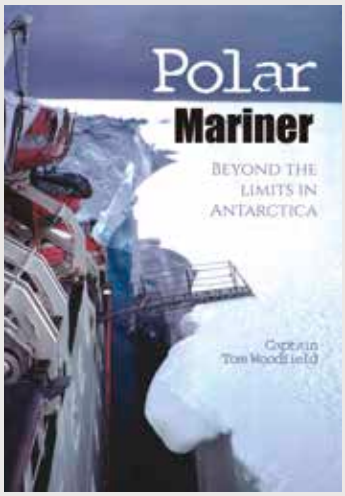
by Michael A W Strachan

Amberley Publishing, paperback, 96pp, £14.99
ISBN 9781445658391

Well illustrated, laid out and containing 180 illustrations, this is a concise introduction to the lighthouses of Scotland, which from 1786 have been the province of the Northern Lighthouse Board.

Ten chapters cover the first lights and the work of the Stevenson dynasty as lighthouse builders and innovators, as well as various constructions, optics, illuminants, fog signals, electricity, wireless telegraphy and service in both World Wars.

The lightkeeper's lot is considered with his accommodation, duties and pastimes. The service's lighthouse tenders are touched on, as is the annual inspection by the Commissioners. Finally, a chapter deals with what happens after stations are closed or automated and the foundation of the Museum of Scottish Lighthouses at Kinnaird Head, Fraserburgh.



Polar Mariner: Beyond the Limits in Antarctica

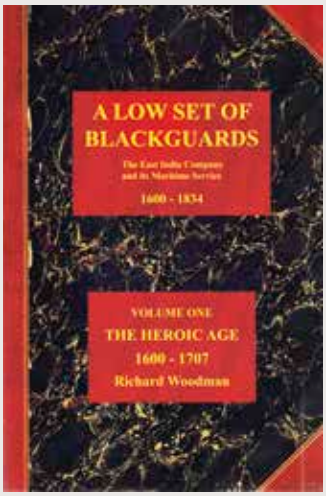
by Tom Woodfield

Whittles Publishing, paperback, 208pp, £18.99/ £25.95
ISBN 9781849951661

Much has been written of polar exploration but little exists of the mariner in the polar research ships. Here Captain Tom Woodfield—Polar Medallist and Elder Brother of Trinity House—plays a pivotal role in bringing the red ships and their crews to prominence.

Between 1955 and 1974, he made 20 seasonal voyages to the Antarctic supporting British scientific stations, exploring and surveying the ice-filled waters in often ferocious weather; he describes the majestic scenery and wildlife as well as providing tales of exploration and seamanship.

The foreword is by HRH The Princess Royal and profits from the sale of the book will go to the Antarctic Heritage Trust (www.ukaht.org).



A Low set of Blackguards: The East India Company and its Maritime Service, 1600-1834. Volume One: The Heroic Age, 1600-1707

by Richard Woodman

Amazon e-book, £4.99
ISBN 9780995498419

As an agent of British imperial expansion the East India Company has had a bad press. Award-winning author Richard Woodman's comprehensive new history of the Company and its Maritime Service runs to 600 pages and covers the first century of John Company's existence from 1600-1707.

Much of the narrative deals with the many and varied attempts to establish trading stations throughout the India seas with focus on the Company's shipping and the dangers and adventures of the early pioneers, when every voyage carried great risk of disease, injury or death from fever or enemy action.

The book covers an immense amount of activity and is full of anecdotes of early pioneering voyages, piracy, shipwreck, exploration and high-adventure, the founding of 'Factories' and the establishment of the later great cities of Bombay (Mumbai), Madras (Chennai) and Calcutta (Kolkotta).

A limited edition paperback (ISBN 978 0 9954984 0 2) is also available from the author at richardwoodman@btinternet.com at £15.00. Post and packing rates will be applied.

Please note that we regret we are unable to take orders for the above publications

Equipping *Trinity* for the future

Former No. 15 Lightvessel *Trinity, a* popular activity venue since 1991, is about to be refurbished and enlarged. David Hillyer of **Fellowship Afloat Charitable Trust** explains how this 63-year-old ship is being equipped for a busy and exciting future

Fellowship Afloat's centre at Tollesbury, on the River Blackwater, Essex, is a unique place for adventure, relaxation and exploring the environment.

Based on converted Trinity House Lightvessel Number 15 moored in the saltings, she's an ideal activity venue for youth clubs, schools, churches, special needs groups and those wishing to gain RYA sailing qualifications. Guests are served by the centre staff and expert volunteers who form the lively Christian community which is Fellowship Afloat.

LV15 was sold to Fellowship Afloat in 1988, after serving 34 years with Trinity House on Britain's coast stations. The Trust converted the vessel with sleeping accommodation for 36 in the forward compartments, saloon for meeting and eating on the stern deck under the helideck, and toilets and showers in the old wireless room deckhouse space. Much of the original fit-out remains which creates a memorable setting for visitors. She was renamed *Trinity* by TH Elder Brother Captain David Orr on 31 July 1991.

Our need

Trinity has been a fantastic base, but:

- More meeting room space is required
- We need more sleeping accommodation as groups get bigger
- Sleeping accommodation for a disabled visitor becomes more essential
- Areas of the vessel could be redesigned to give better storage and circulation
- Heating and ventilation need upgrading to be more effective and environmentally friendly.

The plan

We plan to do the work on *Trinity* during winter periods so that we don't disrupt our guest bookings.

We'll be able to function as normal throughout the summer and the developments will be invisible to groups until they are ready to use.

The first phase of the work commenced winter 2016/17, to clear the engine room and foredeck and to build the whaleback cover over the foredeck to be a new kit store. Undertaking the work in phases over a four-year period will enable us to not only maintain full use of the centre, but also to manage the fundraising.

We are under no illusion that this is a big project that will stretch and challenge us, but we believe it is vital for Fellowship Afloat to adapt to the needs of our guests for the next 25 years.

Funding the work

Looking back over our 50 years, we've got a good track record of fundraising for capital projects. The 60-hectare salt marsh site was purchased in 1980; *Trinity* was opened in 1991; and recently we've established some exciting new activities, like the high ropes and kayaking, which enhance our commitment to personal development and training.

The redevelopment of *Trinity* will cost just over £1million—a huge sum. During 2016 the project plans were shared with friends of Fellowship Afloat, receiving much enthusiasm. We've also consulted fundraising experts, and one comment about the project said *"...it's driven by the FACT vision, it comes out of your history, and it's founded on the first adaption of* Trinity, *which has been successful—go for it!"*

Within weeks of announcing our plans to friends, gifts began to arrive. And by the beginning of 2017, £200,000 was secured – enough to complete the first phase of the works. A fundraising team has been created, and they are planning a strategy to approach grant making trusts and corporate donors. We will also invite friends to give, and have plans for special events.

Steve Cheetham–Flamborough Head

Daniel Allen–Portland Bill

Geoffrey Brown–South Stack

Darren Jones–Lowestoft

It's *Flash* photography

Get snapping and enter our annual lighthouse calendar competition

Every year, Trinity House holds a competition for photographs of our lighthouses. Trinity House selects twelve photographs of lighthouses entered as part of this competition to be included in the annual Trinity House lighthouse calendar.

The overall winning entry wins a seven-night voyage for two on THV *Patricia*. To find a winner, we post the winning images online and ask the public to vote for their favourite.

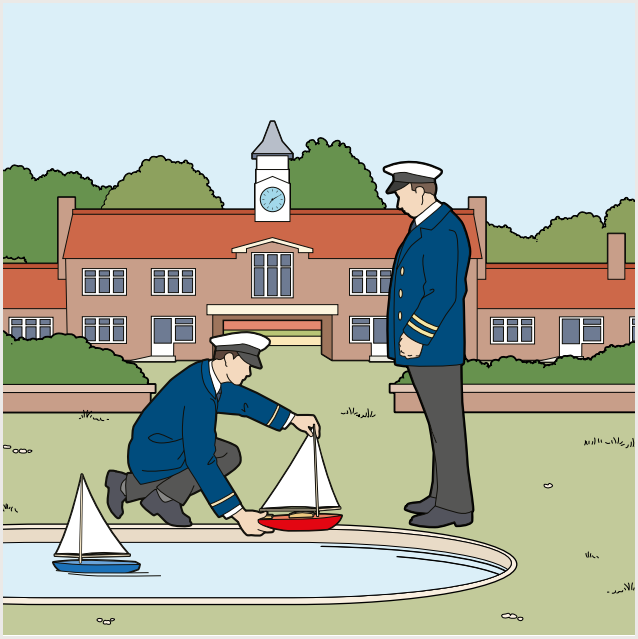
Photographs must be of one of the following Trinity House lighthouses: Alderney, Anvil Point, Bamburgh, Bardsey, Beachy Head, Berry Head, Bishop Rock, Bull Point, Caldey Island, Casquets, Coquet, Cromer, Crow Point, Dungeness, Eddystone, Europa Point, Farne, Flamborough Head, Flatholm, Godrevy, Guile Point East, Les Hanois, Heugh Hill, Hilbre Island, Hurst Point, Lizard, Longships, Longstone, Lowestoft, Lundy North & South, Lynmouth Foreland, Mumbles, Nab Tower, Nash Point, Needles, North Foreland, Pendeen, Peninnis, Point Lynas, Portland Bill, Round Island, Royal Sovereign, Sark, Skerries, Skokholm, Smalls, South Bishop, South Stack, St. Ann's Head, St. Anthony, St. Bees, St. Catherine's, St. Tudwal's, Start Point, Strumble Head, Southwold, Tater Du, Trevose Head, Trywn Du, Whitby and Wolf Rock.

Good luck!

Photographs can be submitted online at **www.trinityhouse.co.uk/lighthouse-photography-competition** where terms and conditions can also be found.

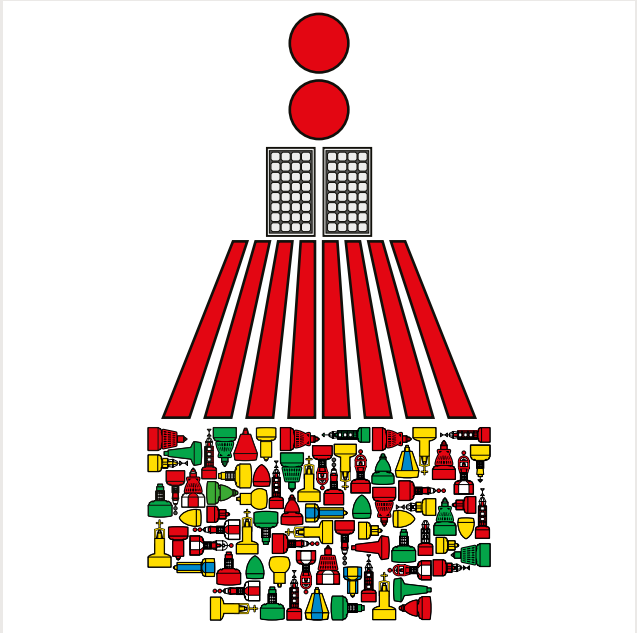
A TO Z

Trinity House is a diverse organisation, and anyone—whether at sea or on shore—could be forgiven for not knowing the breadth and depth of our activities. So we've come up with a bite-size illustrated guide to Trinity House in the form of an A to Z, with 26 things you may or may not know about us, our work and the service and support we provide to the mariner



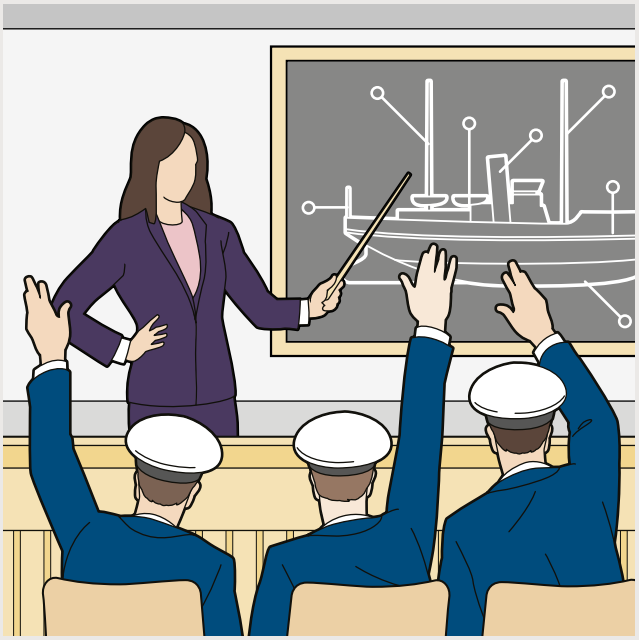
Almshouses

Trinity House's oldest duty is to provide support for aged mariners in need. Today, 18 almshouses at Walmer in Kent accommodate mariners and their dependants.



Buoys

Buoys are a very important part of Trinity House's mix of aids to navigation; their visual language of shape and colour is understood by all mariners.

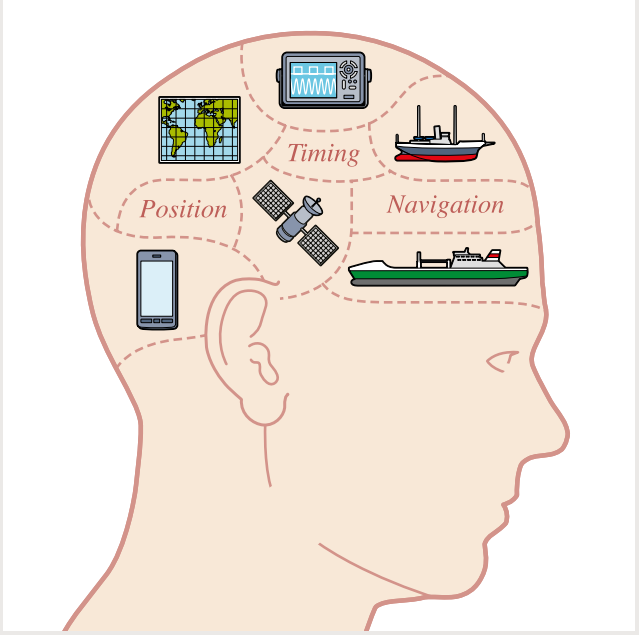


Charity

As the UK's largest endowed maritime charity, Trinity House works to improve the state of navigation in our waters and provide support and training for mariners.

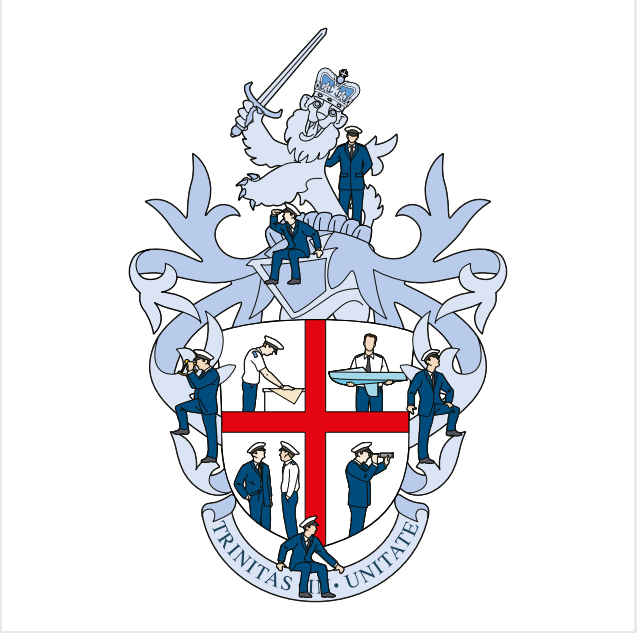
Dover Strait

The Dover Strait—the narrowest part of the English Channel—is the busiest shipping lane in the world, keeping Trinity House busy and on alert at all times.



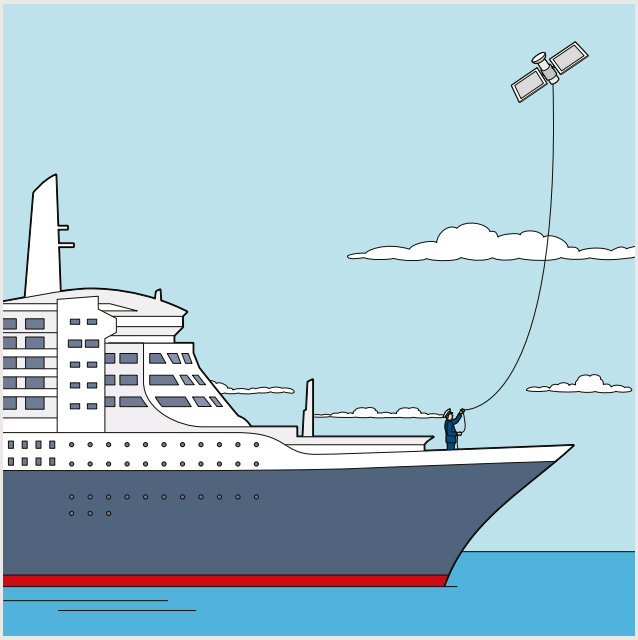
e-Navigation

Trinity House is working with other maritime organisations to develop e-Navigation, a technology-based concept for enhancing and connecting modern shipping.



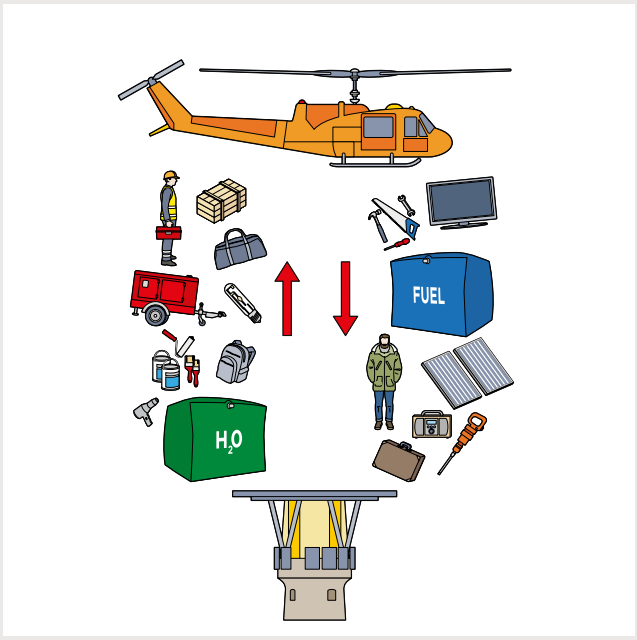
Fraternity

Trinity House is governed by a court of elected Elder Brethren, supported by a fraternity of men and women from all aspects of maritime Britain.



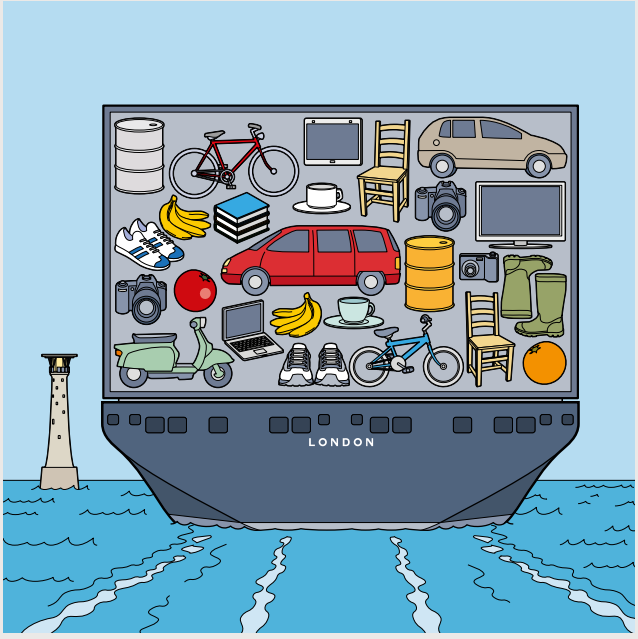
GNSS

The term Global Navigation Satellite Systems covers the various satellite systems which provide world-wide coverage of position and accurate timing, including GPS.



Helicopters

Trinity House often uses helicopters for the safe and swift transportation of people and supplies to and from offshore lighthouses.



International Shipping

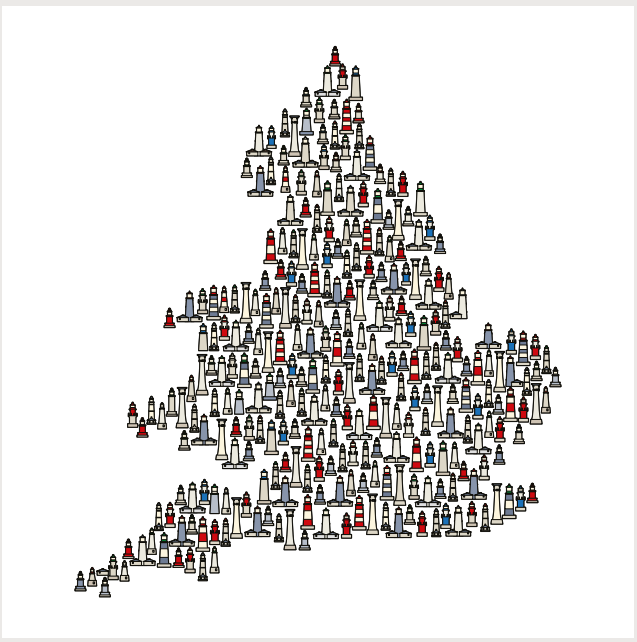
Ships and seafarers from all over the world depend upon Trinity House's reliable aids to navigation for their safe passage into the UK's ports and harbours.

Journeys by Sea

Trinity House not only provides aids to navigation, but also works to ensure that British commercial shipping is crewed by well-trained men and women.

King Henry VIII

Henry VIII incorporated Trinity House with a Royal Charter in 1514 so that we could improve the state of shipping on the River Thames.

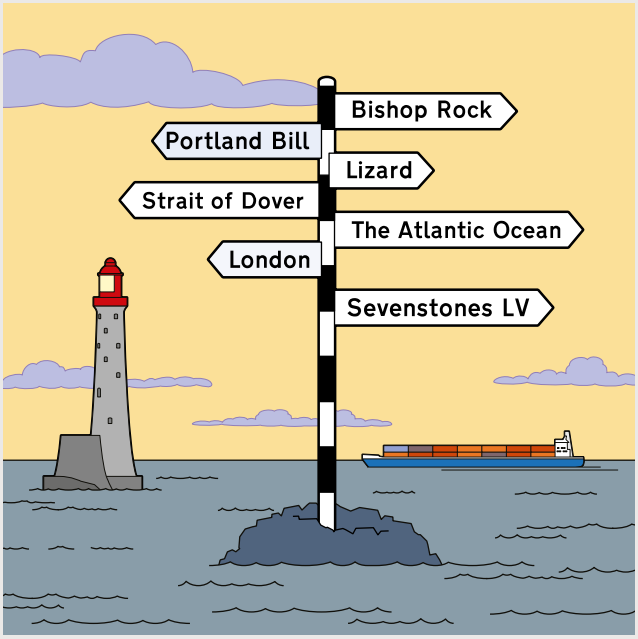


Lighthouses

Trinity House has been providing lighthouses around England, Wales and the Channel Islands for the safety of the mariner for over 400 years.

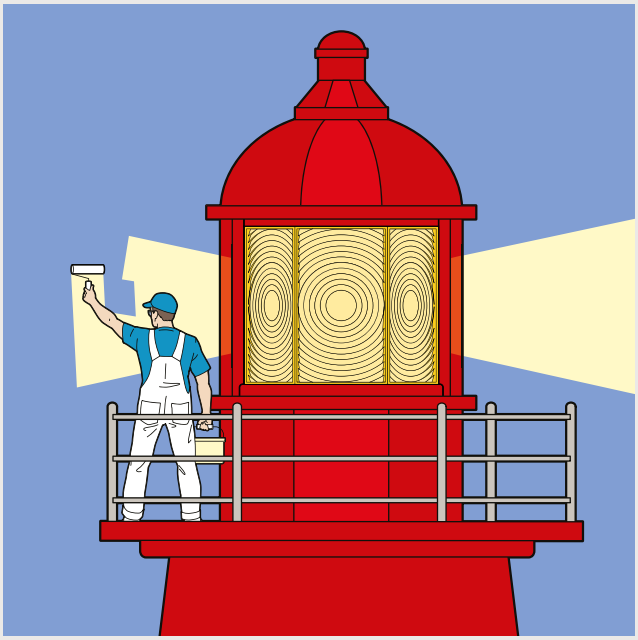
Monitoring

Trinity House's aids to navigation are monitored 24 hours a day from our Planning Centre, always prepared to act quickly should the need arise.



Navigation

Trinity House's aids to navigation help many mariners from all over the world to navigate their way safely around some of the UK's busiest waters.



Optics

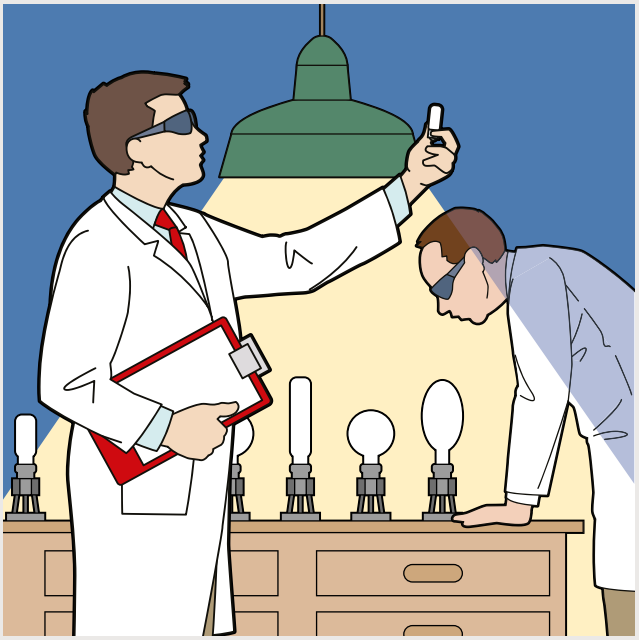
The heart of a Trinity House lighthouse is the optic, a framework of prisms that projects the light out to sea.

Pilotage

Trinity House examines and licenses Deep Sea Pilots who join ships' bridges as expert navigators to provide safe passage through unfamiliar Northern European waters.

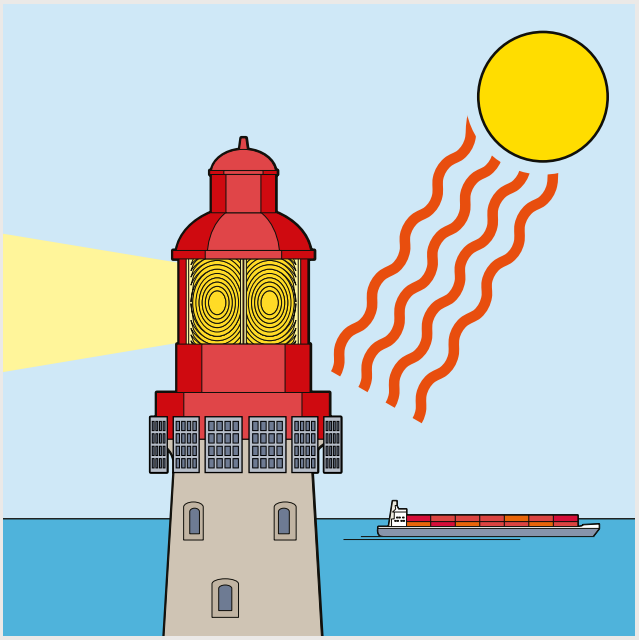
Queen Elizabeth I

Trinity House's authority to build lighthouses and other signs for the sea was originally granted by Elizabeth I in 1566.



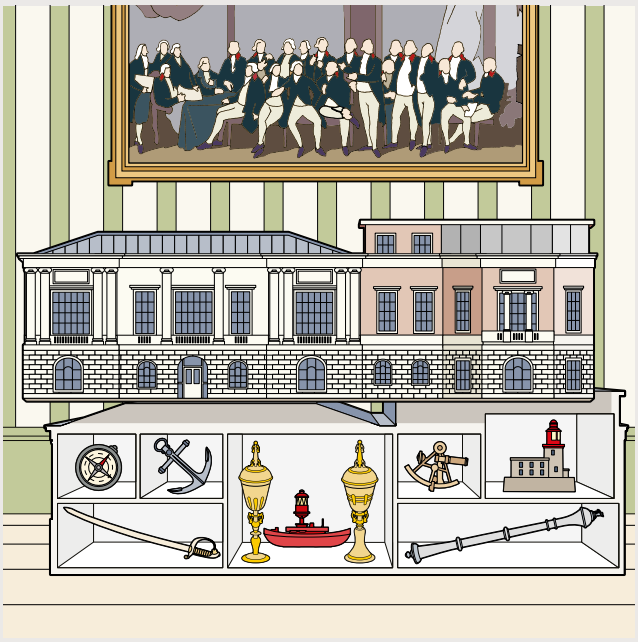
Research and Development

Trinity House and its sister lighthouse authorities in Scotland and Ireland are supported by the Research and Radionavigation team who provide advanced technical research.



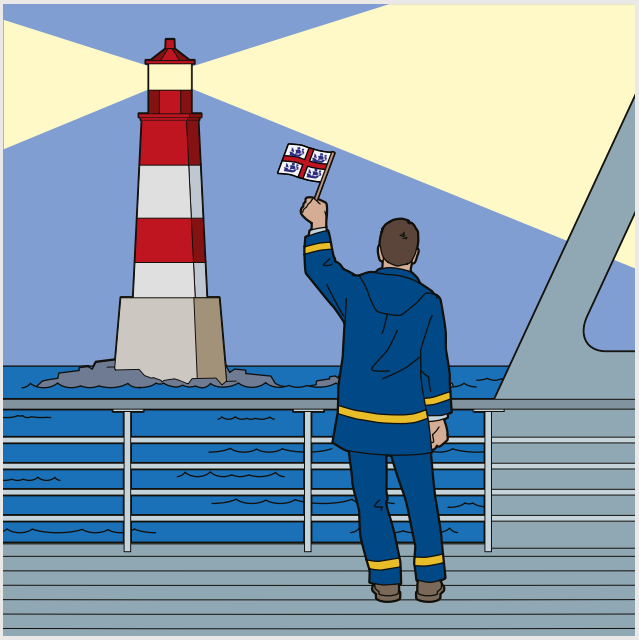
Solar Power

Many Trinity House lighthouses, lightvessels and buoys are operated by solar power as we look for ways to help the environment and keep costs down.



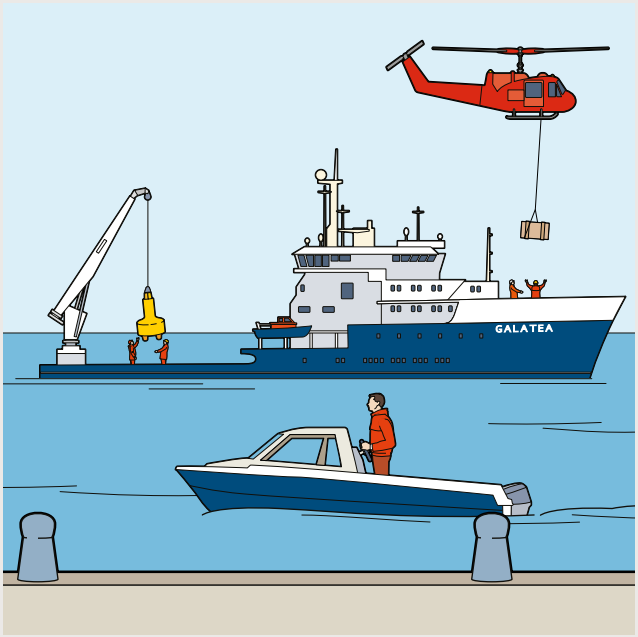
Trinity House on Tower Hill

Trinity House has been based since 1796 at its beautiful, busy and much-admired headquarters at Tower Hill, close to the River Thames.



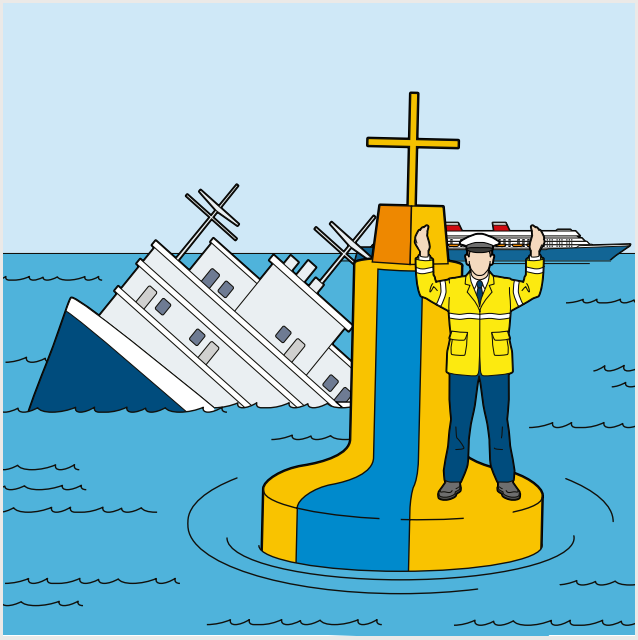
User Pays

Light Dues paid by commercial vessels sailing into UK waters enable Trinity House to operate and maintain our aids to navigation.



Vessels

Trinity House Vessels *Patricia*, *Galatea* and *Alert* allow us to inspect and maintain our lighthouses, lightvessels and buoys at sea.

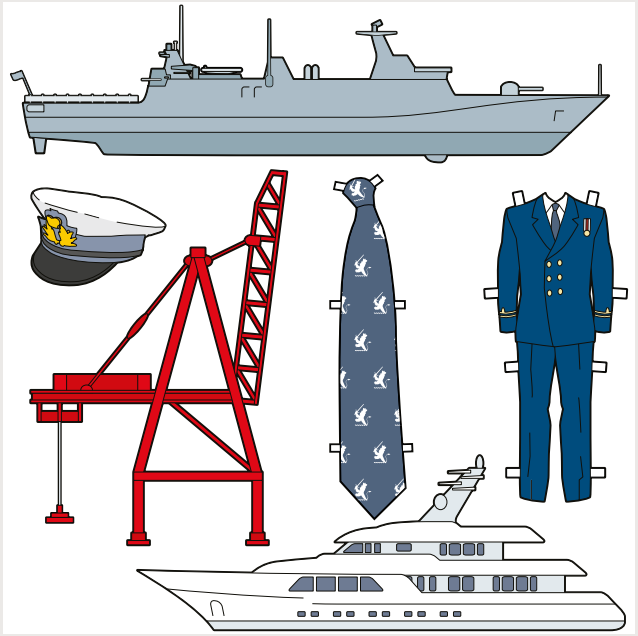


Wreck Marking

Trinity House has a duty to mark shipwrecks that are a hazard to safe marine navigation, by laying brightly coloured buoys nearby.

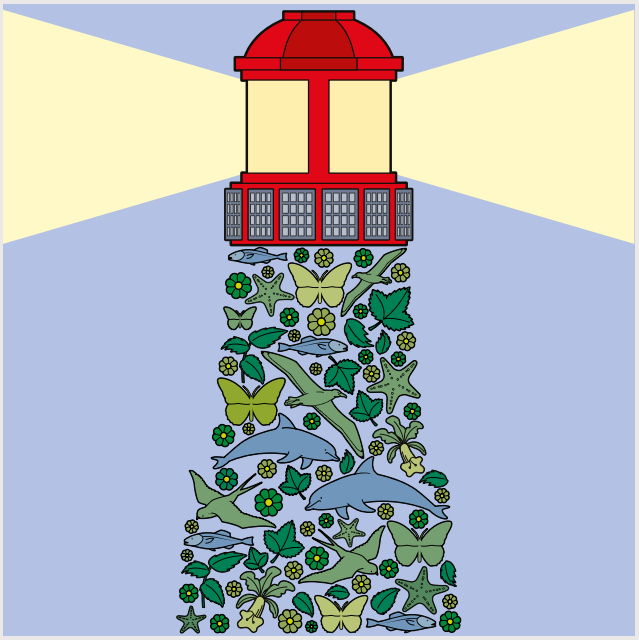
X Marks The Spot

Trinity House ensures that marine hazards, channels and offshore developments are correctly surveyed and marked by over 11,000 major and local aids to navigation.



Younger Brethren

Trinity House's fraternity of over 400 men and women, known as Younger Brethren, provide an enormous wealth of maritime and business expertise.



Zero Emissions...?

Trinity House is committed to minimising our carbon footprint wherever possible, to preserve the beautiful coastal environment in which we work.

Trinity House is a charity dedicated to safeguarding shipping and seafarers, providing education, support and welfare to the seafaring community with a statutory duty as a General Lighthouse Authority to deliver a reliable, efficient and cost-effective aids to navigation service for the benefit and safety of all mariners

The Corporation of Trinity House

Master
Her Royal Highness The Princess Royal KG KT GCVO

Corporate Board as at 31 March 2017
Deputy Master: Captain Ian McNaught MNM
Captain Nigel Palmer OBE MNM
Captain Roger Barker MNM FNI
Captain Nigel Hope RD* RNR
Captain Stephen Gobbi MNI JP LLB
Rear Admiral David Snelson CB FNI
Commodore William Walworth CBE MNM RFA
Commodore Robert Dorey RFA
Malcolm Glaister Esq
Richard Sadler Esq
Commander Graham Hockley RN (Secretary)

Lighthouse Board as at 31 March 2017
Captain Ian McNaught MNM (Executive Chairman)
Captain Roger Barker MNM FNI
Commodore Rob Dorey RFA
Ton Damen Esq
Captain Nigel Palmer OBE MNM (Non-Executive Director)
Mrs. Dawn Johnson (Non-Executive Director)
Professor Peter Matthews CBE (Non-Executive Director)
David Ring Esq (Non-Executive Director)
Jon Price Esq (Secretary)

Trinity House

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Cover image
THV *Galatea's* workboat returns home after delivering personnel to the Sunk Centre Lightvessel, July 2016