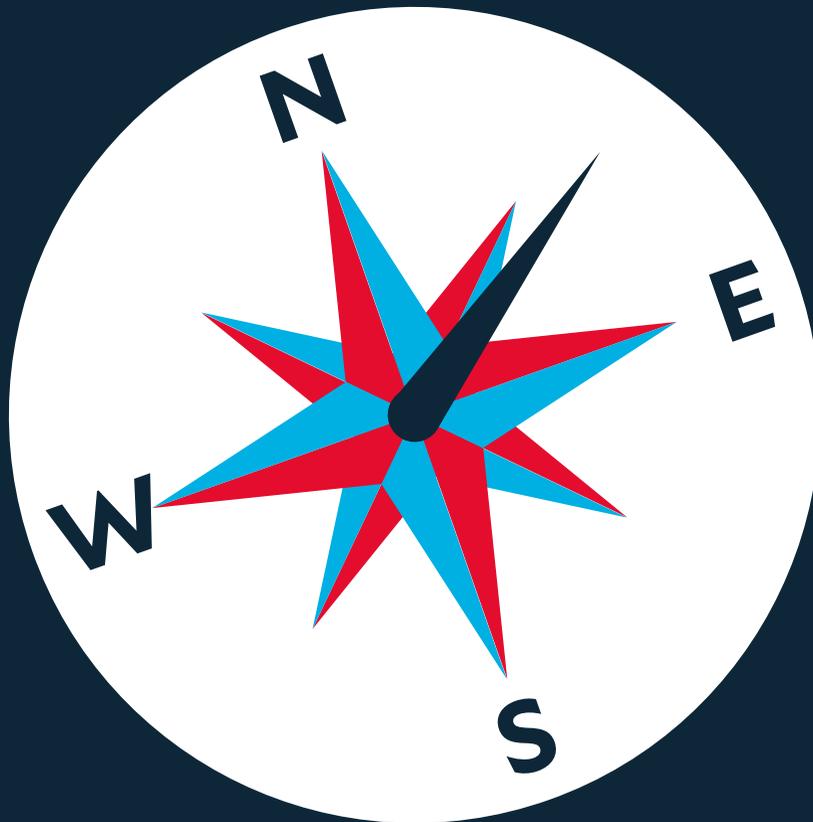




TRINITY HOUSE

flash

The Trinity House journal // Spring 2020 // Issue 32



A steer in the right direction

We take a look at the educational resources we have designed to help young learners understand the importance of shipping, seafaring and safety

flash

SPRING 2020 | ISSUE 32

1

Welcome from Deputy Master,
Captain Ian McNaught

2-4

Six-month review

5

News in brief

6

Coming events

7-8

Appointments/obituaries

9

Staff profile

10-11

Portland Bill modernisation

12-13

Berry Head modernisation

14-15

STORMLAMP project

16

Royal Sovereign update

17

Vessel Replacement Project

18-19

IALA 4th Heritage Seminar

20-23

Charity update

24-25

Buoys, beacons and bananas

26-27

Victory Walk

28-30

150th anniversary of the
Shipping Forecast

31

Maritime Charities Group

32

Photography competition

33

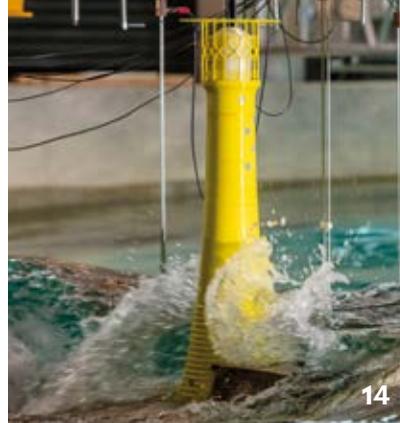
Book reviews

34-37

The new generation of
lighthouse keepers?



10



14



20



26



34

A busy start to the decade

Thank you for picking up the newest edition of *Flash*, which I hope you will find interesting. We have been as busy as ever as we hit the ground running in a new decade; I have chosen a few projects and updates to feature for inclusion here, but—as you will imagine—only a fraction of what we do is reported in these pages.

Now that he has retired, I would like to thank Graham Hockley for his support over the years in his role as the Corporation's Secretary, and congratulate him on his appointment as a Lieutenant of the Royal Victorian Order.

Thanks are also due to everyone who contributed reportage about their various projects and responsibilities, and the same goes to the children of Shakespeare Primary School for the excellent letters excerpted at the back of this journal.

Please also be sure to take a look at our new 'Buoys, beacons and bananas' school resources: you or someone you know may find them useful!

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Captain Ian McNaught

Deputy Master

A number of accolades, appointments and high-profile projects show Trinity House to be as vital as ever as the Corporation enters a new decade, while maintaining its commitment to safety, benevolence and education

A

s we enter the third decade of the 21st century, I am pleased that we continue to evolve to meet the changing requirements of the mariner in terms of both our aid to navigation provision and our charitable giving.

Similarly, our approaches to governance and corporate social responsibility have been reviewed and modified to make sure that Trinity House is fit for purpose and in line with best practice, to provide our various stakeholders with even greater degrees of assurance.

The Court of Trinity House has approved the appointment of Sir Alan Massey as Non-Executive Chairman of the Lighthouse Board. Many of you will already be familiar with Alan from his time as the Chief Executive of the Maritime and Coastguard Agency (MCA) before he retired in 2018; Alan joined the MCA in 2010 after a 33-year career with the Royal Navy, where he left as Second Sea Lord. Alan is already an enormously welcome appointment, and I look forward to working with him as he picks up the reins from Captain Nigel Palmer, who has now retired as a Non-Executive Director for the Lighthouse Board, and also from the Joint Strategic Board that convenes the three General Lighthouse Authorities. The Court joins me in thanking Nigel for his outstanding service.

We also welcome Commodore Martin Atherton as the new Secretary to the Corporation, who replaced Commander Graham Hockley in November, when Graham retired after a decade's service. Graham has been absolutely instrumental in making the fraternity and the two charities such a vital and modern part of the UK's maritime sector. On behalf of the Court, I wish him every success in his future with Jo and I look forward to working with Martin.

I can also share the good news that Graham was appointed a Lieutenant of the Royal Victorian Order (LVO) in the New Year's Honours List 2020 in recognition of a decade's distinguished service as Secretary to the Corporation of Trinity House, and more besides.

The annual staff awards ceremony in January demonstrated—if evidence was needed—that the spirit of hard work, learning and edification is very much alive



across the workforce, and I was very proud to make awards to those who had been nominated. My grateful thanks extend to everyone at Trinity House, as well as our capable contractors.

Alongside major re-engineering projects at Trwyn Du and Lundy North lighthouses, we also have the exciting prospect of signing with a design and build contractor for the future-facing vessel that will replace THV *Patricia*. As we have previously announced we are looking for a design with the right mix of technological and environmental credentials, and a vessel that will serve Trinity House and its crews for many years to come and help secure our position as a vital part of the UK's maritime scene.

Finally, we were very happy to welcome 47 pupils from Kings Avenue Primary School in Lambeth to our London headquarters in December, giving us the perfect opportunity to debut our new 'Buoys, beacons and bananas' education resources, developed by us to help young people learn about shipping, seafaring and safety.

For my own part, I enjoyed bringing my own sea-going experiences to bear when the children asked me which countries I had visited, which made for a good way of advertising the benefits of working towards a career at sea.

Ian McNaught

Trinity House

Review of the last six months:
Looking back at highlights from Trinity House's calendar

SEPTEMBER 2019

Godrevy photo voted into 2020 calendar

Congratulations to **Suzanne Jones** for her winning entry to our annual lighthouse photography competition, which was voted the overall winner by members of the public.

Suzanne's photo of Godrevy Lighthouse wins her a £200 gift card for use at John Lewis Partnerships stores and her image has featured in the 2020 Calendar.

Well done Suzanne!



SEPTEMBER 2019

Record fundraising for Macmillan

This year's Coffee & Cake Morning for Macmillan Cancer Support was our biggest yet, both in terms of cake (and savouries) to eat and funds raised. This year we raised £330 which is a Trinity House record, bringing the running total we've raised for Macmillan to over £1,500 for the six years we have been baking.

The winner this year was Deputy Marine Superintendent **Sophie Platten** with nine votes for her Victoria Sponge.

Thanks go to IT Help Desk Administrator **Sophie Harvey** for continuing to organise (and bake!) for this extremely popular event.

NOVEMBER 2019

New education resources launched



In support of our wider aims as a maritime corporation within the UK's busy, varied and vital maritime sector, Trinity House launched our new 'Buoy, beacons and bananas' education resources for Key Stage 1, 2 and 3 pupils to help young learners understand the importance of the sea to our island nation.

The slides, teachers' notes, videos, worksheets and games help educators teach their pupils about the role that shipping and Trinity House plays in their lives, by providing safety measures such as lighthouses and buoys, as well as cadet training, to help ensure the sea-borne movement of the food and goods that are now an essential aspect of our everyday lives. The new resources are available for free download at www.trinityhouse.co.uk/bananas

NOVEMBER 2019

New Secretary to the Corporation

After a decade as Secretary to the Corporation of Trinity House, **Commander Graham Hockley RN** retired on 19 November; his replacement is **Commodore Martin Atherton OBE RN** who joined the Corporation on 1 November.

Martin joins us from Canterbury Cathedral, where he had been Receiver General (Chief Executive) since 2016; before that he had been with the Royal Navy since 1985, finishing his career there as Commander Regional Forces, responsible for all four Regional Commanders.

He was appointed OBE in the New Year Honours List 2014, is a Freeman of the City of London and is also a Younger Brother of Trinity House.

Martin said of his appointment: *"It is a privilege to take forward Graham Hockley's impressive legacy at Trinity House, and an honour to be invited to serve the Corporation as its Secretary, having been a Younger Brother since 2016. I look forward to being back at the heart of the UK maritime sector."*

In his retirement, Graham has assumed the role of Chairman for the Maritime Charities Group (MCG)—upon the retirement of Commodore Barry Bryant CVO RN—to further its mission to foster collaboration across the maritime charity sector.



Commodore Martin Atherton OBE RN

DECEMBER 2019

Successful pupil visit

On 16 December, we were very pleased to welcome 47 pupils from Year 5 at Kings Avenue Primary School to our London headquarters. As they are situated in Lambeth, the teachers felt that it was important that they learn a little about the sea and its importance to the UK.

This gave us the perfect opportunity to debut our new 'Buoys, beacons and bananas' education resources. PR and Records Assistant **Nichole Kelly** ran one of the Key Stage 2 lessons for the assembled pupils, choosing one that focused on Britain as a maritime nation. Deputy Master **Captain**

Ian McNaught joined in the lesson by asking the children to put their hands up and say which country they would most like to visit; the children were fascinated to hear that he had visited all of their far-flung dream destinations during his time in the Merchant Navy. When asked if anyone of them might like a career at sea, we were pleased to see that quite a few hands went up.

After the successful lesson, the very attentive pupils were given a tour of the house and the day was concluded with the story of lighthouse heroine Grace Darling and a shanty-singing session.





Commander Graham Hockley RN

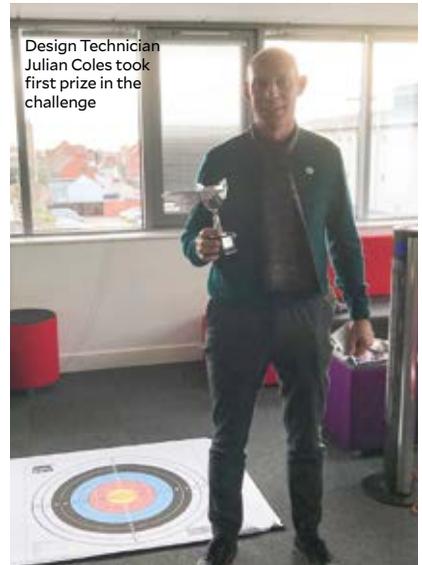
DECEMBER 2019

Plane sailing

The most recent of our annual model building challenge events (13 December) tasked its participants with making a paper aeroplane and launching it to successfully reach its target: a model lighthouse.

Planes had to be constructed from one sheet of A4 paper and launched by hand. Challenge organiser **John Chilvers** (Design Manager) also set up a number of environmental obstacles such as electric fans to keep contestants on their toes.

Prizes were awarded for style and decoration, and the overall award went to Design Technician **Julian Coles** for getting closest to the target.



Design Technician Julian Coles took first prize in the challenge

DECEMBER 2019

Hockley appointed LVO

Commander Graham Hockley RN, recently retired as Secretary to the Corporation of Trinity House, has been appointed a Lieutenant of the Royal Victorian Order (LVO) in the New Year's Honours List 2020 in recognition of a decade's distinguished service.

Commander Hockley is one of several maritime names to be recognised in the 2020 list.

The Royal Victorian Order is given by HM The Queen to people who have served her or the monarchy in a personal way.

Congratulations Graham!

JANUARY 2020

Trinity House recognises employees' contributions



The annual Staff Awards ceremony took place in Trinity House on 30 January 2020, thanking selected staff for their hard work and recognising their achievements.

Staff from across the organisation's various offices and vessels came to London to collect awards from

the Deputy Master in a number of categories: Long Service; Outstanding Individual Achievement Benefitting Trinity House; Outstanding Team Achievement Benefitting Trinity House; Health, Safety & Environment; and Job-Related Professional Qualifications.



1 POPPIES AT COQUET

Hilary Brooker-Carey, an RSPB volunteer on the island for 25 years, created a cascade of crocheted poppies at Coquet Lighthouse, in time for Remembrance Sunday 2019. She said: *“The... weeping window on the Tower of London had such a huge impact on me, the image lingers in my mind... The idea of crocheting poppies every day throughout the year to make a poppy cascade seemed fitting. To me, Coquet Island Lighthouse seemed a fitting backdrop; it is steeped in history and also the island is a very special place for me.”*

2 EDDYSTONE LIGHTHOUSE ANNIVERSARY

On 14 November 2019, internet search giant Google celebrated the 321st anniversary of the lighting of the first Eddystone Lighthouse (1698) with one of its ‘Google Doodles’, the small illustrations that adorn its otherwise sparse home page. The wooden lighthouse was built by merchant and inventor Henry Winstanley.

The same lighthouse also features in Herman Melville’s iconic seafaring novel *Moby-Dick*—“How it stands there, away off shore, more lonely than the Eddystone lighthouse”—and again in a well-known sea shanty “My father was the keeper of the Eddystone light/And he slept with a mermaid one fine night”.

3 MARITIME PODCAST

On 10 June 2019, our Director of Navigational Requirements, **Captain Roger Barker**, sat down with ChromeRadio to record an episode of their *Around These Islands in 12 Ports* podcast.

Roger talks about how he got started with his maritime career as a young man, and goes on to describe his work at Trinity House today and the importance of our mix of aids to navigation to an island nation.

This series celebrates the maritime past, present and future of 12 ports, speaking to maritime organisations that include Maritime 2050, UKMPG, BPA, Maritime UK, MCA and IMO. To hear the podcast, visit: soundcloud.com/chromeradio/sets/around-these-islands-in-12-1

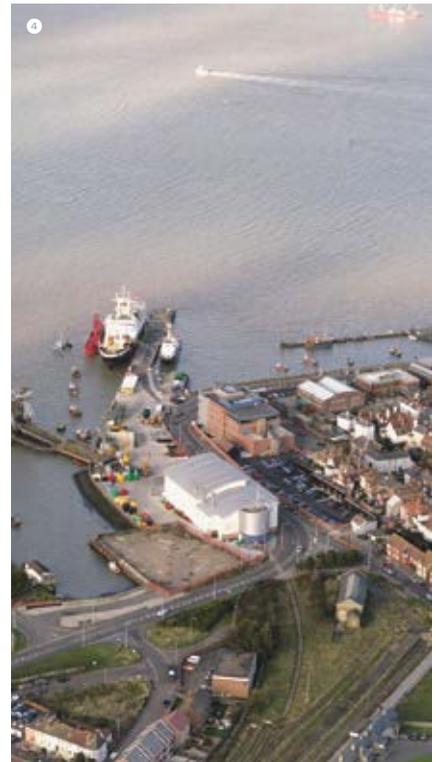
4 GOING GREEN

Trinity House has invested in a greener future by beginning the procurement of environmentally friendly vehicles for its busy road fleet.

Two fully electric vans have so far been purchased for short-haul use by the Supplies departments, one each for Swansea and Harwich.

Five hybrid electric vehicles have been purchased in the 2019-20 financial year, one for St Just, one for the Inspector of Sea Marks and three for Harwich, for use by all employees.

We have also ordered three fully electric forklifts which will replace the diesel equivalents, as well as a new hybrid Access Platform (Swansea) for March 2020.



COMING EVENTS

A brief look at selected highlights from our forthcoming calendar

Merchant Navy Day 🇬🇧

3 September 2020

Intended to raise public awareness of the UK's ongoing dependence on seafarers, the Merchant Navy Day campaign invites local authorities to fly the Red Ensign—the official flag of the UK Merchant Navy—atop public buildings and on prominent flagpoles on 3 September.

Every community, parish and town council is asked to take part, in addition to all borough, county and district councils plus unitary authorities throughout the UK. Owners and custodians of historic and landmark buildings with flagpoles are also invited to get involved, including English Heritage, Historic Scotland, Historic Houses Association, National Trust and Welsh Government Cadw. Trinity House flies its own ensign at a number of lighthouses that are open to the public.

Many flag-hoisting ceremonies are attended by local Merchant Navy Association and Royal British Legion members.

In 2017, the Red Ensign was flown ashore at more than 650 locations. For more information visit

www.merchantnavyday.uk

Seafarers Awareness Week 🇬🇧

6-12 July 2020

This year's Seafarers Awareness Week (SAW) will run from 6-12 July.

This year's theme will focus on 'Seafarers' Safety', while continuing to raise public awareness of the UK's ongoing dependence as an island nation on the men and women who work at sea. Campaigning will focus on the hazards faced by seafarers on merchant vessels, revealing practical steps—including enhanced training—that can be taken to reduce fatalities and serious injuries.

For more information, visit

www.seafarersweek.uk

IALA World Marine Aid to Navigation Day 2020 🇬🇧

1 July 2020

At the 19th Conference of the International Association of Marine Aids to Navigation and Lighthouse Authorities in 2018 it was agreed that all IALA member nations around the world would henceforth celebrate 1 July every year as World Marine Aid to Navigation Day.

This was to celebrate the contribution made by—and the importance to all

mariners of—aids to navigation of all shapes, sizes and format, whether they be lighthouses, buoys, beacons or digital systems.

Trinity House is proud to be a founding member of IALA—established in 1957—and takes an active involvement in its working groups and governance; as such, we look forward to joining in the celebrations with our sister lighthouse authorities around the world on 1 July, and we hope our readers will too.

To find out more about this day and how you can join in the celebrations, please look out for announcements from Trinity House or IALA via websites, newsletters or social media: www.iala-aism.org

Mayflower 400 🇬🇧

Across 2020

The town of Harwich will be taking part in the 400th anniversary marking the historic voyage of the *Mayflower* and will host an exciting range of *Mayflower*-themed events and activities taking place across the town.

For more information on this historic event go to www.mayflower400uk.org/visit/harwich-esssex

New Elder Brother

Sir Alan Massey KCB CBE was sworn in as an Elder Brother on 22 January. Sir Alan served in the Royal Navy for 33 years before joining the UK Maritime & Coastguard Agency as Chief Executive in 2010.

As a naval officer he saw active service worldwide, in both seagoing and staff appointments. He was privileged to have command of four major warships, including the aircraft carriers HMS *Illustrious* and HMS *Ark Royal*, the latter during combat operations off Iraq in 2003. Sir Alan later sat on the Admiralty and Navy Boards for five years. Alan's naval career culminated as Second Sea Lord and Commander-in-Chief, Naval Home Command, in the rank of Vice-Admiral.

In his eight years with the MCA, Sir Alan fundamentally transformed Her Majesty's Coastguard service, introduced an all-new fleet of UK Search and Rescue helicopters and modernised the MCA's vessel survey, inspection, regulatory and ship-registration functions. Over that period he worked closely with Trinity House on a number of safety-related initiatives, and is delighted to have the opportunity now to contribute directly to the Corporation's endeavours for the benefit and safety of all mariners.

Sir Alan is currently a non-executive director on the Board of Shoreham Port and works as a consultant to the Irish Government on search and rescue matters. He holds a number of other non-executive and consultancy positions, as well as charitable trusteeships.

He was admitted as a Younger Brother of the Corporation in 2010 and has been appointed as an Elder Brother and Non-Executive Chairman of the Lighthouse Board and Lighthouse Board Warden.

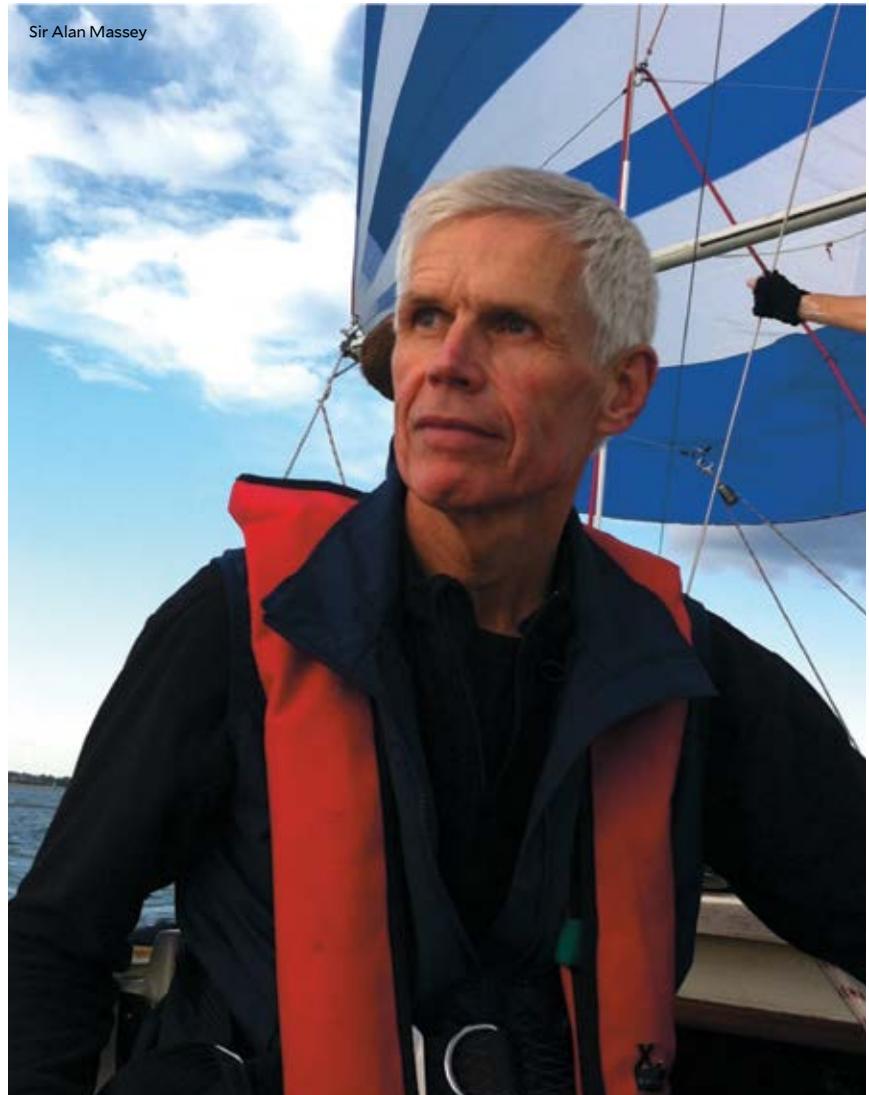
New Younger Brethren

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

W R Barker Esq, Harbour Master, Hinkley Point 'C' Harbour Authority.

John Richard Boyle, Earl of Cork and Orrery, Elected Excepted Hereditary Peer.

Mark Fox Esq, Chief Executive of Business



Sir Alan Massey

Services Association.

Commodore Andrew Aidan Jordan RN, Assistant Chief of Staff (Ships), NCHQ.

Rear-Admiral Timothy Miles Lowe CBE, Acting Chief Executive & National Hydrographer; UK Hydrographic Office.

Robin John David Mortimer Esq, Chief Executive, The Port of London Authority.

Nicholas John Randall Esq, Chief Admiralty Pilot & Port Operations Manager, HM Naval Base Portsmouth and Editor-in-Chief of The Journal of Navigation.

Captain William Sadler, Chief Operating Officer, Marine Ports of Jersey Ltd, Jersey Harbour Master.

The Merchant Navy Medal for Meritorious Service 2019

Captain Nigel Hope, Elder Brother, Director of Maritime Training For services to a maritime charity

Captain Rachel Dunn, Younger Brother No 343 For services to the careers of young seafarers

Captain Matthew Easton, Younger Brother No 320 For services to the maritime industry and the careers of young seafarers





The Merchant Navy Medal for Meritorious Service Investiture

➔ **Captain Adrian McCourt**,
Younger Brother No 323
For services to maritime safety

Chief Engineer Officer Phillip Dick,
Trinity House
For services to the maritime industry

The Investiture held by HRH The
Master took place at Trinity House
on 6 November.

Honours

We send our congratulations to the following members of the fraternity who have been gazetted since the last issue of *Flash*:

HM The Queen's 2020 Birthday
Honours List

LVO
Commander Graham Hockley RN, former
Secretary, Corporation of Trinity House.

GCB
Admiral Sir Philip Jones YB No 259, former
First Sea Lord and Chief of Naval Staff.

CBE
Kevin Fewster YB No 396, former Director of
the National Maritime Museum, Greenwich.

CBE
Rear-Admiral Martin Connell YB No 292,
Assistant Chief of Naval Staff
Aviation & Carrier Strike (Rear-Admiral
Fleet Air Arm).

Obituaries

It is with regret that we report the deaths of the following members of the Fraternity.

Captain B J McAree, on 9 August 2019, aged 92, Younger Brother No 2. He was admitted in 1960. He was former Master with Williamson & Co trading worldwide then Senior Board of Trade Nautical Surveyor based in Liverpool. One of the few remaining Members of the Fraternity who served in the Second World War.

Richard Woodford, on 6 September 2019, aged 63, Younger Brother No 341. He was admitted in 2013. He was a former Chief Officer with United Baltic Corporation and later joined ABP in the Port of Southampton where he held a 1st Class



Sir Donald Gosling

Unrestricted Pilot's Licence and was Training Pilot for the port.

Sir Donald Gosling KCVO Kt MNM, on 16 September 2019, aged 90. Younger Brother No 152. He was admitted in 1998. He was The Vice-Admiral of the United Kingdom; a great philanthropist supporting a number of Royal Navy charities and a motor yachtsman. A service to commemorate his life and work was held in Westminster Abbey on 11 December and attended by the Elder Brethren.

Rear-Admiral Anthony John Cooke CB, on 1 December 2019 aged 92. Younger Brother No 18. He was admitted in 1974. After a 35 year career in the Royal Navy ending as Admiral President of RNC Greenwich he became Private Secretary to the Lord Mayor of London.



STAFF
PROFILE

Making the seabed safer

Continuing our look at various roles around Trinity House, **Richard Bolan** describes his work as Hydrography & Charting Officer for the Navigation Directorate

Why does Trinity House have a hydrographer?

To fulfil our statutory work, Trinity House deploys floating aids to navigation (AtoN) to help shipping navigate in safe water and mark any potential obstructions. To accomplish this, we investigate hydrographic (underwater) surveys to identify dangers on the seabed that could affect shipping; these could be anything from wrecks, rocks or man-made obstructions. We also monitor significant sand banks that could shift dramatically and enter shipping lanes. Trinity House ships undertake a number of these surveys, but we also have close working relationships with external parties as required, as hydrographic data comes in from all relevant parties to allow full analysis of our AtoN provisions.

What does a typical day look like for you?

My main role is to validate and analyse all hydrographic data that comes into the office. Trinity House has an annual survey plan of more than 40 surveys a year, excluding any urgent surveys that could be required. These hydrographic surveys are designed to ensure significant high-risk areas are constantly monitored, ensuring AtoN provisions are being used effectively and minimise risk to the ships using the areas. Alongside Trinity House surveys, hydrographic data can be attained from a number of external sources including ports, survey companies, the UK Hydrographic Office and Hydrographic Notes from any marine user.

All this data needs to be analysed individually before being combined with the other data to see the wider picture of what is going on. Full analysis is undertaken using specialist computer software

allowing detailed results to be combined with traffic analysis to give an overall picture of the seabed and any future predictions of what may happen. All these findings are presented to the Navigation (Examiner) Manager and Director of Navigational Requirements to ensure our AtoNs are in the correct positions.

What are the requirements to become a hydrographer?

A hydrographer requires a lot of specific training and experience to understand the detailed hydrographic surveys that are received in Navigation. If the data is interpolated incorrectly then it has a wide range of implications that could affect important shipping routes. Every survey received will always be different and it takes a well-trained eye to identify the key differences, no matter how small that could be.

Do you work with other teams and organisations?

I have a very close working relationship with a variety of external organisations. One of the main organisations is the UK Hydrographic Office (UKHO), responsible for the creation of the nation's nautical charts. All Trinity House survey data is sent to the UKHO for incorporation into its chart series to make sure shipping has the safest and most up-to-date data available.

Aside from the UKHO, we provide expertise and insight into a programme run by the MCA (Maritime & Coastguard Agency) called the Civil Hydrography Programme, designed to systematically survey the whole of the UK's coastal waters. Beyond surveying areas within Trinity House's jurisdiction, we can help identify any significant areas that could be required for the future.



Time for a facelift

Project Engineer **Phil Hawtin** describes the work involved with the works to modernise Portland Bill Lighthouse



The re-engineering works at Portland Bill Lighthouse are well under way and, as most projects appear to the unfamiliar eye, look like organised chaos. This is just the nature of being in the middle of the install phases.

The installation team mobilised to site in October and set up the temporary aid to navigation and support systems. The temporary navigation light was mounted on the top of the lantern room roof, something that requires a good head for heights and a steady grip.

This allowed the existing installation to be turned off, with the former lighthouse keeper and current attendant Larry Walker switching off the rotating optic for the final time. We hired storage containers that provided much-needed space for tools and equipment, and we stripped down the back-up diesel generator room to free-up further room to become project storage. The Swansea Supplies team did a great job of the

logistics, setting up the site stores and double-checking all parts had arrived safely.

We then carefully dismantled the optic and positioned the pieces ready to be lowered down the 41-metre tall tower. Estate and Property Manager **Peter Hill** gained permissions from the Crown Estate to use a crane positioned on their adjacent land but unfortunately, the high winds beat us back every time the crane was planned for use. Thankfully, Installation Supervisor **Chris Wroe** is experienced in lowering optics down via a manual method utilising an A-frame lifting rig, which is how we will likely proceed unless we find a lucky break in the weather. We drained the mercury from the optic bath and returned it to stores for safe disposal.

We set up scaffolding inside the lighthouse to allow access to all areas for a fresh coat of paint, carried out skilfully by members of the Swansea Buoy Yard. We have now installed the new main navigation lights in their final position, along with new



lantern flooring allowing safe access to the lights, designed by **Mike Yaxley** and **Liz Archer**.

The remainder of the new equipment has been fixed into position, bar a few final fixtures and fittings, along with the majority of new cabling pulled and loomed into position. This is quite a feat considering how tall the tower is, with some cabling running top to bottom! Carrying tools and equipment up in excess of 150 steps provides a good workout even for the fittest team members.

The installation team has been managed expertly by site supervisors **Chris Ashforth** and **Richard Thorington**, with other staff from Field Operations making up the installation team. Everyone has worked extremely hard and professionally.

Despite the installation being undertaken during the off-peak season, there are still many visitors to the surrounding area and it has been great to witness the team engaging with and answering questions from curious passers-by. Richard also took to camera and featured on BBC's *Spotlight* programme about the engineering works.

The works stopped and the station was locked up over the Christmas break, with works resuming on 7 January 2020. The next step is to terminate the cables into the relevant equipment before commissioning commences in February.

Following some floor levelling works, we will lower the optic down and reassemble it inside the tower base for future visitors to admire. It's brilliant to finally see the installation come together, after three years of careful design, planning and hard work by everyone involved.

At the time of writing, the works were scheduled to be complete by the end of February, with responsibility for the daily operation of the station handed back to Field Operations in spring, following the usual one-month soak test.



- PPE for mercury removal
- Ongoing works in the lantern room
- Portland Bill lanterns



Small is beautiful

Senior Project Engineer **Jamie Hammond** writes about the challenges involved in completing the modernisation project at Berry Head Lighthouse

Berry Head Lighthouse is said to be the smallest lighthouse in the Trinity House estate. It sits on the western side of Torbay above Brixham, marking the Torbay Deep Water Anchorage and also acts as a landfall light.

On the face of it, it looked like a relatively easy job to modernise the station. Following research and an inspection, however, a number of issues presented themselves, making the job more complex than first thought.

The Berry Head Lighthouse's new aid to navigation system would require the existing rotating optic, running gear and pedestal to be removed.

This presented the project team, in particular

mechanical Project Engineer **Chris Pearson** and Installation Manager **Chris Wroe**, with some interesting challenges to overcome. The pedestal was too big to remove through the narrow passageway between the entrance and the lantern, and the pedestal contained an unknown quantity of mercury that used to act as a gas seal when the light was acetylene-fuelled.

Plans were made to cut either side of the pedestal base to allow it to be extracted and a mercury drain was planned. The height of the new LED lanterns also meant a platform would need to be designed to access them ergonomically. Again this fell to the Mechanical Engineer and the Drawing Technician **Chris Harbour**.

The lack of facilities and the presence of lead paint meant that a portable toilet and hot wash sink was required for the installation phase.

The design of the electrical system was based



Berry Head Lighthouse



“THE INSTALLATION WAS COMPLETED ON SCHEDULE AND WITHOUT SIGNIFICANT ISSUES”



on the approach agreed at the Engineering Standards meeting. Electrical Project Engineer **Phil Hawtin** and Design Technician **Chris Clayton** designed a system to take the approach into account in the most economical way. For example, the telemetry unit, condition monitoring and supplies changeover were combined into one unit.

Berry Head Lighthouse is located within an old fortification, with a defensive wall at the access end and a narrow roadway through it. The roads leading up to the headland were also narrow. While deliberating upon how to mobilise equipment to the site, **Martin Price** from Swansea Supplies provided the answer: rather than using the lorry, a box trailer would not only provide a mobilisation resource but also double up as storage on the very confined station.

As part of the works, the station’s lightning protection and earth arrangement needed to be updated, requiring that a trench be dug.

Due to the station being within a site designated as a Scheduled Monument, Estate and Property Manager **Peter Hill** made an application to Historic England to allow the trenching works to take place.

This application process took around three

months and the team got approval, subject to an archaeological watching brief being conducted by an approved expert, and a photographic survey carried out before and after.

Procurement was conducted early to allow installation to take place in the same year; all equipment was delivered in plenty of time thanks to the efforts of **Anne-Lise Nicol** and **Fiona Fisher** of the Procurement team.

The installation was completed on schedule and without significant issues; the two site supervisors **Simon Eade** and **Mark Hanson** did a great job of running the site. The station now benefits from a main/standby navigation light system of equal autonomy and range; this means if one system fails the other will automatically take over with no reduction in performance.

The new additions to the physical lightning protection and surge arresting mean the threat from voltage transients has been reduced, and the station has been painted inside and out.

Responsibility for running the station was handed back to Field Operations on 21 November 2019 with no qualifications and will continue to serve the mariner for the next 20 years.

The renovations saw the existing rotating optic replaced, left, and the lighthouse’s electrics upgraded, right



Are the rock lighthouses finally giving up their secrets?

Prof Alison Raby, Professor of Environmental Fluid Mechanics, School of Engineering, Computing and Mathematics at the University of Plymouth, gives us an update on the STORMLAMP project

Back in summer 2016, *Flash* reported on a pilot project that had been conducted by the University of Plymouth on the Eddystone Lighthouse. The investigation had assessed whether it was possible to understand the structural behaviour of the lighthouse in response to wave impacts on the tower.

The project was a great success with more than 3,000 wave impacts recorded during the 2013-14 winter storms. It paved the way for the £1 million STORMLAMP project funded by the UK Engineering and Physical Sciences Research Council. The three General Lighthouse Authorities (GLAs) of the UK and Ireland also provided financial support, enabling access to many of their rock lighthouses. The project was undertaken by a collaboration of UK universities, led by Plymouth, each using cutting-edge research techniques.

Whilst the pilot project had considered the Eddystone Lighthouse out of convenience to the university's location,

the STORMLAMP project investigated the six most vulnerable rock lighthouses across the three GLAs' jurisdictions: Les Hanois, Bishop Rock, Longships and Wolf Rock (all Trinity House); Dubh Artach (Northern Lighthouse Board); and Fastnet (Irish Lights).

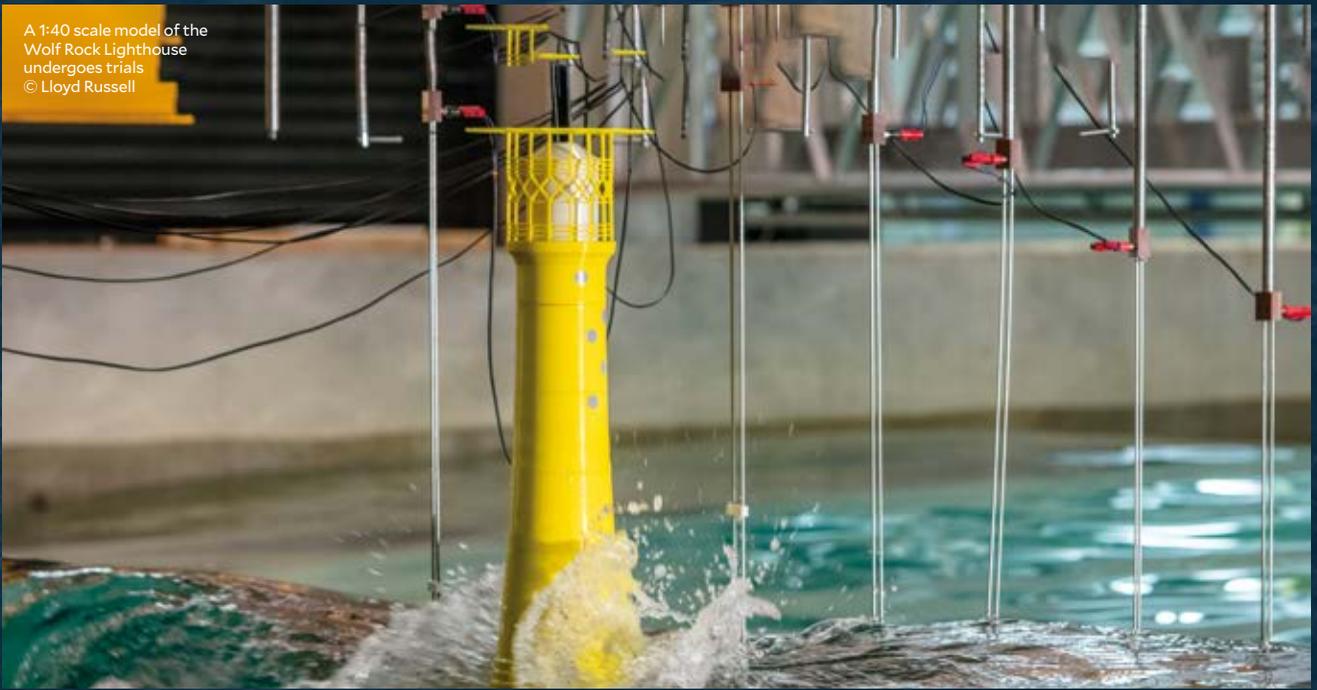
The first major task, led by the University of Exeter, was to obtain the structural characteristics of each of the towers. This was not for the faint-hearted as it involved deploying a team to each of the towers with a cumbersome array of equipment including a 52kg electrodynamic shaker to set up vibrations, and accelerometers to detect vibrations; these detectors had to be placed on every level of the lighthouses. The team was rewarded with rich data-sets that included information on the vibration shapes and mass distributions. The investigations also shed light on the dynamic behaviour of the helidecks that are common to all the Trinity House lighthouses tested.

Armed with the behavioural characteristics of the lighthouses, University College London was then able to validate complex numerical models



Wolf Rock Lighthouse

A 1:40 scale model of the Wolf Rock Lighthouse undergoes trials
© Lloyd Russell



of the structures. In order to study the complex rocking behaviour of these bespoke lighthouses that are capable of uplifting, sophisticated models with the Finite Element and Discrete Element method were developed. The latter simulated all the individual granite blocks with their vertical connections and demonstrated the importance of the vertical keys in preventing sliding failure of the lighthouses. The structural modelling findings were also of great value in understanding the behaviour of the helidecks, demonstrating how they are excited by wave loading.

Wolf Rock and Fastnet were selected for more detailed investigations, with both having accelerometers installed for remote capturing of structural vibrations during storms. The storms of winter 2017-18 (including Ophelia, Brian and Eleanor) resulted in a maximum recorded acceleration of about 2m/s^2 , comparable to a 'very strong' earthquake on Wolf Rock. Vibration data from Fastnet was much more modest, confirming the structural modelling findings that the lighthouse is extremely stable due to its massive size and its elevation above the still water level, ensuring wave impacts occur only low down on the structure. Wolf Rock is now also home to a state-of-the-art stereo imaging system that will provide quantitative information about the waves as they approach the lighthouse. This will permit direct correlations of the incoming waves and the structural response.

The STORMLAMP investigations also feature ambitious hydrodynamic

modelling of the waves interacting with lighthouses. These have been undertaken with both scale laboratory models and state-of-the-art numerical wave modelling techniques. The University of Plymouth's COAST Laboratory has provided the perfect venue for the experiments, which started with simplistic representations of the lighthouses as a cylinder on top of a plane slope in a narrow wave flume, and reached their impressive climax with a full 1:40 scale model of the Wolf Rock Lighthouse that included realistic topography. This physical modelling is complemented by a parametric numerical modelling campaign providing high resolution datasets and an opportunity to predict the wave loading characteristics for any generic rock lighthouse. All the wave modelling required estimates of wave parameters using complex statistical theories and open source datasets.

The STORMLAMP project is now drawing to a close, with findings being prepared as a guidance note for the three GLAs. Research findings have been published in a wide variety of articles including in the highly esteemed *Philosophical Transactions of the Royal Society*, in which the team led a Special Issue on Environmental Loading of Heritage Structures. The editorial article featured accounts from the original helideck designers and some of the lighthouse keepers of that era.

More details of the project and our research papers can be obtained from our project website: www.stormlamp.org.uk



The STORMLAMP investigations feature a model of the Wolf Rock Lighthouse



A Royal send-off

Senior Project Engineer
Robert Race BSc GMICE
briefs us with an update on
the project to remove Royal
Sovereign Lighthouse

Preparation to bring the proposed Royal Sovereign Lighthouse decommissioning works to tender is approaching completion. During the spring of 2020, Trinity House will invite contractors to submit proposals for the removal of the accommodation cabin ('topsides') and central pillar.

Trinity House continues to work with MWaves, our appointed offshore decommissioning consultants, to ensure that all the necessary information is communicated to contractors. This will provide them with all the knowledge required to undertake their activities safely, efficiently and with full regard to the environmental implications.

Trinity House has been keen to ensure that impact on the environment is kept as low as possible. We have engaged with Natural England and commissioned studies to analyse the potential effects that the anticipated method will have. This study concludes that it will be unlikely to affect adversely any of the features protected through any of the nearby environmental designations. This consultation will continue once the contractor is in place.

We expect that the appointed contractor will spend the remainder of 2020 finalising their designs

for the decommissioning works with physical dismantling of the structure likely to go ahead in either the summer of 2021 or 2022.

Once the dismantled sections of the lighthouse are brought ashore, contractors will ensure that every element of the structure reaches approved waste streams as part of the scheme's waste management approach. Trinity House has also identified a number of historical assets which will be set aside for re-use, either elsewhere in the service or as possible museum exhibits.

Anticipating the proposed absence of Royal Sovereign Lighthouse, Trinity House has successfully completed two key upgrades to surrounding aids to navigation to maintain the continuity of navigational safety in the area.

The CS2 buoy and nearby Beachy Head Lighthouse have both had the range of their lights improved; CS2 buoy moving to a 1S10 designation and extending the range of the main navigation light of Beachy Head Lighthouse from eight nautical miles to 16 nautical miles.

For the duration of the works, we will establish four Type 2 cardinal marks with stretched lightweight aluminium superstructures. Once works are complete, we aim to establish a permanent buoy station and virtual aid to navigation, to mark the lighthouse caisson which is to remain on the seabed.

Royal Sovereign Lighthouse
is to be decommissioned



Full steam ahead

The latest update on the progress of the **Vessel Replacement Project** includes securing the Maritime Minister's approval for the Outline Business Case and launching the procurement process

Back in the summer, Maritime Minister Nusrat Ghani MP approved the Outline Business Case for the replacement of the 38-year-old THV *Patricia*, announcing the intention to the maritime community during London International Shipping Week in September at Trinity House.

The work was supported by Capita Transformation, who have a great track record of success and are experts in the Treasury Green Book process, with the maritime and operational detail provided by the those highly experienced in the Aids to Navigation business within Trinity House along with input from industry experts. Capita will assist further in developing the Full Business Case as the procurement process progresses.

Launching the procurement phase

The London International Shipping Week event in September last year brought together naval architects, ship builders and equipment suppliers to give industry an understanding of the scope and intentions for a new ship requirement prior to the launch of an EU tender.

The Maritime Minister and 70 guests attended the event, and the presentations and subsequent Q&A session were broadcast live as a webcast around the world.

Nusrat Ghani said: "95 per cent of our imports and exports are transported to and from the UK by sea and, with our waters becoming even busier, dealing with incidents quickly and efficiently

is more important than ever. This new ship will support the General Lighthouse Authority to help future-proof their fleet and continue to support maritime trade for generations to come."

At the same event, Trinity House issued a contract notice to the shipbuilding industry to open the procurement process.

Technical Specialist appointed

Trinity House has awarded a contract to Longitude Consulting to act as Technical Specialist on the Vessel Replacement Project. Since then, work has progressed in reviewing and tuning the set of requirements into a Technical Specification ready to issue with the Invitation to Tender. Issues such as power and propulsion options have been considered, including 'green' alternatives and hybrid variations, while the hull form will need to be focused towards seakeeping and heavy weather performance, while delivering maximum fuel efficiency. The tender documents have also progressed well, working closely with the DfT Procurement Assurance Board, who will need to approve the Procurement Strategy ahead of release to industry.

Project objectives

The vessel replacement Project Board, led by Director of Operations, aims to deliver a replacement ship:

- by developing a business case using the HMT Green Book process
- by procuring the services of technical specialists to support delivery of the project
- by submitting firstly the Outline Business Case and then the Full Business Case for approval by DfT and Cabinet Office
- while being overseen by a Steering Group constituted from the Lighthouse Board Directors and Non-executive Directors with specialist industry experience.

To deliver a ship which will:

- be requirements-led with a focus on safety, effectiveness and through life efficiency
- incorporate lessons and direction from the conclusion of the Fleet Review
- contribute to the layered fleet capability of the Trinity House flotilla
- incorporate 'green' energy and environmental considerations
- be upgradable through life to meet emerging power technologies
- be capable of integration and support to wider tri-GLA operations.



The Challenge of Change

IALA will convene lighthouse authorities from around the world to discuss lighthouse heritage at its 4th Heritage Seminar, in Salvador, Brazil

The 4th Heritage Seminar 'The Challenge of Change' is to be held in Brazil on Saturday, 25 and Sunday, 26 April 2020 and precedes the 11th meeting of the Engineering and Sustainability (ENG) Committee meeting held in the same location between 27 April and 1 May 2020.

The event is in association with the Brazilian Directorate of Hydrography and Navigation (DHN), the 2nd Naval District Command and the Centre of Aids to Navigation.

Under IALA's motto 'Successful voyages, sustainable planet' and recalling the Incheon Declaration On Lighthouses as Cultural Heritage signed at the 19th IALA Conference, the DHN and IALA are pleased to host the 4th Heritage Seminar.

The broad themes and topics to be covered are outlined here:

Regional Heritage Perspectives

The importance of maintaining lighthouse heritage:

- Case studies



- Ancillary structures telling the lighthouse story
- The historical value of lighthouses.

Conservation Approaches

Buildings and fixed equipment:

- Case studies
- Conservation planning
- Dealing with coastal erosion.

Meeting Modern Requirements in Historic Lighthouses

Meeting modern health and safety requirements:

- Case studies
- Retaining historic lenses without mercury.

Complementary Lighthouse Use

- Case studies
- Public access to heritage lighthouses including those at sea.

The 4th Heritage Seminar aims to achieve the following:

- Increased interest in the heritage issues dealt with within the ENG committee

- Sharing of knowledge and best practices
- Lessons identified from international experiences
- Recognise that the significance of historical lighthouses extends beyond their navigational and architectural value and encompasses maritime culture, history, social history and environmental aspects
- Recognise that there is great value in documenting, researching and interpreting heritage structures for the benefit and inspiration of future generations
- Provide assistance for developing nations through education, training, technology and capacity building.

The workshop is directed towards all IALA members, maritime authorities, marine aids to navigation service providers, universities, scientific bodies as well as consultants in marine aids to navigation with an interest in lighthouse heritage.

The Seminar venue will be in the city of Salvador, Brazil, at the Centro Militar de Convenções e Hospedagem da Aeronáutica—CEMCOHA.

IALA Heritage Lighthouse of the Year

Calling all proud lighthouse custodians!

The ENG Working Group 4 (Heritage Forum) has created the IALA Heritage Lighthouse of the Year Award to celebrate global lighthouse heritage.

This is your opportunity to place your most precious lighthouses in the spotlight and have your nation's good work on lighthouse conservation, public access and education recognised internationally. A 'Heritage Lighthouse' is any lighthouse of cultural significance which goes beyond its current function and time. It does not have to be old!

Nominations for the 2020 award closed on 28 February, so please keep an eye out for the winner of the 2020 IALA Heritage Lighthouse of the Year Award.

We hope that this new accolade will become very popular, and encourage submissions in future years via the website at www.iala-aism.org/heritage

The 2019 IALA Heritage Lighthouse of the Year was awarded to Cordouan Lighthouse on the west coast of France, near Bordeaux. Despite being of considerable age, this exceptional lighthouse is in a remarkable state of preservation. It is the last manned lighthouse in France and one of very few such lighthouses around the world. Cordouan Lighthouse has special international significance for its role in the development of national and international lighthouse technology—in particular in the trials of Augustin-Jean Fresnel's lens system. The lighthouse is accessible to the public at low tide.



Cordouan Lighthouse, France





Charity update

The **Trinity House Maritime Charity** continues to seek out liaison opportunities with other maritime welfare providers and smaller seafaring charities to ensure the wellbeing and robust education of mariners

CHARITABLE GRANTS

Fellowship Afloat Charitable Trust

In April, the Trinity House Maritime Charity awarded a Waterborne Training and Access Grant of £10,000 to the **Fellowship Afloat Charitable Trust** (FACT) towards its annual training programme.

FACT is an outdoor activity centre based in Tollesbury, Essex, serving nearly 2,000 residential and day visitors per year, chiefly children and young people. FACT aims to develop young people's talents, teamwork, leadership and character through sailing and a range of adventure activities

Each year, around 75 per cent (1,300) of FACT's beneficiaries are children and young people who attend as part of youth groups, school trips and RYA (Royal Yachting Association) training courses. Since 2013, 1,613 young people from low-income backgrounds have been supported by FACT's bursary fund.

Andrew Eastham, FACT's CEO, said:

"We have a long-standing relationship with Trinity House which dates back to 1991 when we purchased the former No. 15 Lightvessel and transformed her into Trinity, our unique residential floating activity centre. We are very grateful for all the support Trinity House has offered FACT over the years, most recently in awarding us the Waterborne Training and

Access Grant which has given a huge boost to our training budget, as well as a regional donation of £4,000 towards the purchase of a new engine for our launch. We look forward to accommodating many more young people on board Trinity and giving them some life-long memories and skills."

www.fact.org.uk





Thames Sailing Barge Trust

Following a Heritage Lottery Fund grant to the **Thames Sailing Barge Trust** to restore its barge, *Pudge*, the Trust was keen to ensure that not only her future but Thames barge sailing as a whole was sustainable.

The Thames sailing barge community in general is facing a shortage of crew and, as a result of this, the Trust agreed to deliver a training programme to train ten new mates and skippers. The Trust was awarded £10,000 in April towards this scheme, which will give the new recruits the opportunity to experience how these vessels are sailed and qualify in the skills required. The Trust has organised a number of trips this season, including one on the Thames in September where the trainees had the opportunity to meet experienced Thames sailors and learn about their experiences.

John Rayment from the Trust said: “The

support given by Trinity House will go a long way to making sure that these iconic vessels will be able to sail around the Thames and East Anglian coast for many years to come and give pleasure to lots of people.”

www.bargetrust.org

Royal Institute of Navigation

In July, the Trinity House Maritime Charity awarded a grant of £17,600 to the **Royal Institute of Navigation** (RIN). This support enables the Institute to offer a broader programme of activities than would otherwise have been possible. The Royal Institute of Navigation is an inclusive organisation, bringing diverse disciplines together to work towards a more navigable world. Approximately 40 per cent of the RIN’s membership are either professional mariners or leisure sailors. The

Institute’s Small Craft Group has offered a range of activities to mariners and its Professional Maritime Navigation Group was relaunched earlier in the year.

The Trinity House Maritime Charity grant enables more work on promoting knowledge and, in particular, safety of the mariner. Activities in 2019 included a series of evening talks, a visit to the Dover Maritime Rescue Co-ordination Centre and co-ordinated response to consultations (one of which attracted over 1,000 inputs).

2020 has so far seen a one-day electronic navigation conference at Royal Lympington Yacht Club, an evening talk at the Irish Cruising Club and plans are in place for a Weather and Sailing Conference at RNLI, Poole, on 7 November 2020.

John Pottle, Director of the RIN, commented: “*The objects of the RIN and Trinity House Maritime Charity have significant overlap in relation to safety of the mariner. We aim to bring people together to share insights and build understanding, all focused on navigation expertise, safety and efficiency. The Trinity House grant enables RIN to do more and to reach more people. In 2020, we are also working with partners, including Trinity House and the Royal Yachting Association, to launch an electronic navigation booklet which brings together best practices and tips for the leisure mariner.*”

www.rin.org.uk





Regional Grant Committees

The South West Committee awarded a grant in September to the **Roseland Youth Sailing Trust**. The Trust aims to make watersports more accessible to young people in South Cornwall and offers free sailing lessons during the school day. In 2019, more than 450 children from 18 local schools took part and in 2020 this funding will enable a further 320 sessions to be delivered. One third of the children taking part will achieve an RYA certificate which, for some, will be the only qualification that they leave school with.

Dina Croft, founder of Roseland Youth Sailing Trust, said: *"We are indebted to Trinity House for their financial support which has helped us to deliver free sailing lessons to 18 schools in Cornwall, including children from some of the most deprived neighbourhoods in the country. Learning to sail gives young people the gift of confidence, self-esteem and skills of value in whichever career they choose. Together we are creating opportunities, changing lives and transforming communities."*

www.facebook.com/roselandyouthsailingtrust

CHARITIES WE SUPPORT: THE SILVER LINE

Helping combat loneliness and isolation among ex-seafarers

Launched by Dame Esther Rantzen in November 2013, **The Silver Line** is a national charity which was established to help to eliminate loneliness and isolation among older people, and to reduce the negative stigmas associated with old age. The charity's aim is to empower and support older people by helping them to feel that they are a member of The Silver Line community, as well as connected to wider UK society.

The Seafarers' Link service operated by The Silver Line provides free, regular, group friendship telephone calls which enable up to six like-minded people to talk together for an hour. The calls offer an easy way to connect people who have a maritime background – all those with a Royal Navy, Royal Marines, Royal Fleet Auxiliary, Merchant Navy, WRENS or fishing background are welcome to join. The group encourages ex-seafarers

to make new friends, enabling them to share stories and experiences of life at sea without having to leave their homes. The Trinity House Maritime Charity has awarded a grant to enable The Silver Line to further engage with the maritime sector, develop new referral partnerships to reach those "hidden" seafarers who would benefit from the friendship and camaraderie that the telephone circles can bring.



In July, the South East Committee awarded a grant to the **Christian Youth Enterprises Sailing Centre (CYE)** towards its trainee development programme. CYE is a multi-activity residential centre in Chichester Harbour, providing water sports and adventure activities for more than 2,000 children and young people and around 800 adults each year.

A crucial element in the successful delivery of this programme is the continual development programme for 10 trainees each year; mostly gap year students aged 18 to 25. Over the winter they are trained to instruct and lead activities, from basic skills to RYA qualifications. Over the summer season, the trainees put their skills into practice and grow from assisting to leading outdoor activity sessions.

Rob, one of the Activity Leaders, said: *"When I first arrived at CYE I didn't have any qualifications in water sports but I had a bit of previous knowledge, which meant I was only a little bit helpful on water sessions. But after the training and qualifications I received it set me up to get a better understanding and to be a great teacher. The qualifications I received enabled me to give the best teaching and*

coaching I could to a variety of age ranges and very mixed ability groups."

www.cye.org.uk

The **Guillemot Trust**, based in the Wirral, was awarded a grant by the North Committee. The Trust works with young people, disabled adults and those who would like to begin to sail but are unable to afford it. The yacht Guillemot is berthed in Liverpool and offers a three-stage experience for absolute beginners. The young people start on land learning about how the yacht works, how to tie knots and keep a look out at sea. They then move on to practical, on the water experience including man overboard drills and how to use the radio. Last year, 39 trainees took part in the programme.

Participant Louise said: *"I enjoyed going out on the River Mersey and learning to sail. I especially enjoyed the man overboard scenario."* Jack, another learner, added: *"I enjoyed sailing as it was a new experience. It was great to be in charge of such a beautiful boat and make it go fast!"*

www.guillemot-trust.org.uk



Jan Williams, Project Manager, said: *"The recent funding support from Trinity House has enabled us to promote Seafarers Link to seafarers, to benefit from regular telephone contact to combat loneliness and isolation across the UK."*

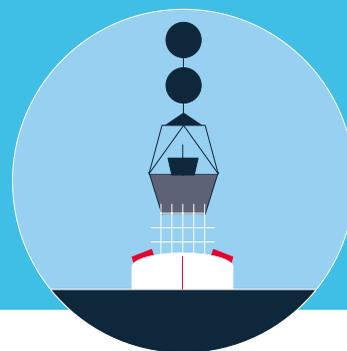
If you were a seafarer yourself or know someone who would benefit in connecting with others to talk about shared sea experiences, the group telephone calls take place for an hour each fortnight and are incredibly easy to join. They are completely free and a great way to build connections with fellow ex-seafarers across the country.

Call **020 7224 2072** to find out more.

www.thesilverline.org.uk/seafarers-link-group-calls



Buoys, beacons and bananas



Our new education resources will help Key Stage 1, 2 and 3 pupils learn about shipping, seafaring and safety

Trinity House is proud to be part of the UK's busy, varied and vital maritime sector.

In support of our wider aims as a maritime corporation, we want to help young learners understand the importance of the sea to our island nation, and

for them to understand how ships and seafarers help the UK connect to the rest of the world.

We hope that educators and pupils will also learn that Trinity House plays an important part in their lives by providing safety measures (such as lighthouses and buoys) and cadet training that help ensure the sea-borne movement of food and goods, all of which have come to be such an essential aspect of our everyday lives.

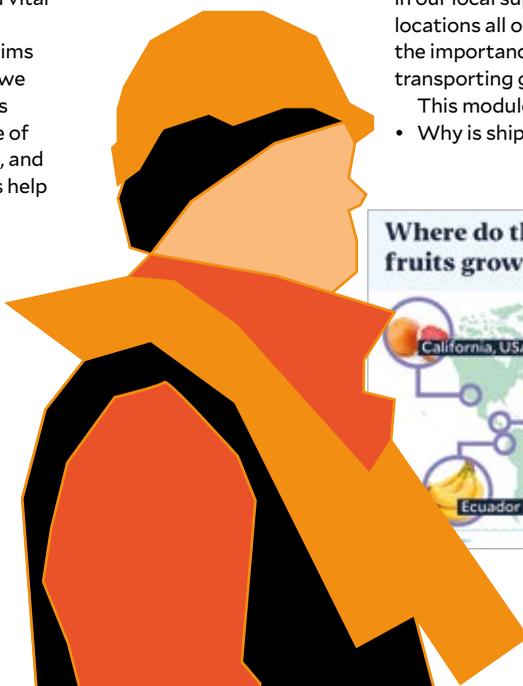
As part of our commitment to the environment, these resources are available to download as interactive PDFs rather than printed materials.

What will Key Stage 1 pupils learn?

Our Key Stage 1 resources for 5-7 year olds use slides, videos, worksheets and games to teach pupils to recognise that the food we see in our local supermarket comes from different locations all over the world, and to appreciate the importance of shipping as a means of transporting goods from overseas.

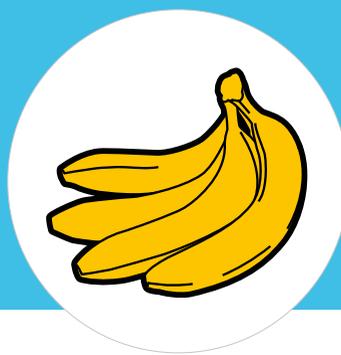
This module includes one lesson:

- Why is shipping important?



Where do the other fruits grow?





What will Key Stage 2 pupils learn?

Our Key Stage 2 resources for 7-11 year olds use slides, videos, worksheets and games to teach pupils that the UK is an island nation reliant on trade links with the rest of the world; as such, the nation's maritime sector has a vast range of job types, including seafarers, engineers, designers, port operators and more.

Pupils will be able to think about how these roles work at sea and on shore, and understand that Trinity House provides training for young people who want to be seafarers to ensure they can undertake their work safely and efficiently at sea.

Pupils will also learn about the role of aids to navigation such as lighthouses and buoys in keeping ships and seafarers safe at sea, and explore their own ideas about designing visual systems to convey messages to mariners about safe passages and hazards.

This module includes four lessons:

- Britain as an island nation
- Jobs at sea
- Safety at sea
- Global connections.

What will Key Stage 3 pupils learn?

Our Key Stage 3 resources for 11-14 year olds use slides, videos, worksheets and games to give pupils a more advanced understanding of the role the maritime sector plays in the UK's prosperity, and the huge range of diverse, interesting and important jobs that keep food and goods moving in support of Britain's economy.

Pupils will learn how Trinity House keeps ships and seafarers safe by providing a mix of aids to navigation and training for seafarers, keeping the movement of commercial shipping safe, constant and vital at a time when globalisation has made the world a smaller and more connected place.

Pupils will also be challenged to work within a team to address and solve design problems given to them, developing specifications for innovative and functional products that respond to stakeholder needs.

This module includes three lessons:

- Just the job
- Safety at sea
- Global connections.

We hope that both teachers and pupils have an enjoyable and informative time using this resource.

For more information and to download the resources, visit:

www.trinityhouse.co.uk/education

Victory at last

Following her article in the autumn 2018 issue of *Flash*, **Commander Jane Allen RD RNR** describes the conclusion of her ‘Victory Walk’ around Britain’s coast

It began on Trafalgar Day (21 Oct) 2017 when I set off on the ‘Victory Walk’ from Admiral Nelson’s flagship – a solo anticlockwise trek around the coastline of mainland UK. It was a harsh winter as I paced up the east coast, but eventually at the end of April I crossed into a sunny Scotland. Now in the domain of the Northern Lighthouse Board there were some memorable moments as I spent the next six months seeing Scotland’s stunning scenery, regularly punctuated by lighthouses. Two lights were significant: near John o’Groats, Dunnet Head overlooking the Pentland Firth marked my reaching the UK’s most northerly point and later in the Highlands, Ardnamurchan heralded the most westerly point.

Shortly before clocking 3,000 miles at Campbeltown, I ventured out to the Mull of Kintyre to remember all those who’d perished in the tragic 1994 Chinook helicopter crash. It had been Mull’s lighthouse keepers who were first on the scene

of devastation. I finally emerged from Scotland on Remembrance weekend, ready to start the long haul down England’s west coast, into and around Wales and onwards to the south west peninsula.

Torrential rain was my companion through much of Cumbria and Lancashire as I pushed on towards Wales. Day after day of abysmal weather tested my resolve, but the thought of reaching the Welsh coast path by Christmas 2018 kept me going. The new year began well. I made good progress through acres of static caravan parks on Wales’ north coast before heading out on to the rural Llyn Peninsula. By mid-Wales, snow had joined me on the coast at Aberystwyth, with conditions again affecting my walking schedule. The Victory Van (support motorhome) was snowbound, so I was temporarily

“TORRENTIAL RAIN WAS MY COMPANION THROUGH MUCH OF CUMBRIA AND LANCASHIRE”

4,986 miles and still counting





Back at my childhood haunt Start Point



Strumble Head lighting my way on a grey Pembrokeshire day



At the Lizard – mainland UK's most southerly point

'grounded' too. At last, I walked into Cardigan. I'd been looking forward to the start of the Pembrokeshire coast path of which the northern section proved tougher than the south – or so I thought. Leaving Fishguard's wide bay, cold winds accompanied me to Strumble Head, but sunnier weather had arrived when I rounded St David's Head to start the long haul towards my Severn crossing, back into England.

Disaster struck close to Pembroke's oil refinery when I tripped, before being flung downhill; a severely dislocated shoulder, chipped bone and shredded tendons left me in a crumpled heap. Eventually, I rescued myself, got taken to A&E and was trundled into theatre. There followed the most demoralising and testing period of the entire walk: ten weeks of injury time. Unable to live in the Victory Van, the support team (husband) and I were forced

to rent a flat. While I waited to heal and begin physio, I spent many hours watching vast oil and LPG tankers arriving and departing from Milford Haven.

It was a slow return to walking, about five miles a day, rather than my daily average of 16. I eventually crossed back into England on a blistering hot May Bank Holiday, before turning towards Land's End. Like John o' Groats, reaching the tourist tip of Cornwall with its iconic signpost was a memorable moment celebrated with a Cornish ice cream!

The Lizard light saw me complete my collection of the UK mainland's four cardinal points, after which I steamed and puffed along the rest of Cornwall's dusty south coast. I was keen to reach Start Point, a regular haunt of my childhood and where I knew every twist and turn of the path. It was good to be back.

My final lighthouse target was Portland

Bill. Mid-summer weather turned to howling winds and rain as I struggled crab-like along the Jurassic Coast. Pushing to meet commitments at Naval establishments and elsewhere helped me focus on the 'tape' at HMS Victory in Portsmouth's Historic Dockyard.

Compared to my autumn 2017 departure in Storm Brian, my arrival in September 2019 was a complete contrast. The sun shone, sailors shook collection buckets and the Royal Marine Band led me into the Victory arena where well-wishers and the Second Sea Lord had gathered to welcome me home. My challenging 5,495-mile solo charity walk around some of the UK's most beautiful, grim, and wonderful coastline was finally over.

Jane's Victory Walk is raising money for two naval charities (RNRMC and WNS BT). Donations can still be made: go to www.victorywalk.uk for more information.

The Shipping Forecast: still going strong?

The Met Office's Senior Scientist **Dr Michael Sharpe FRMetS** takes a look at the service which recently saw its 150th anniversary

The year 2017 saw the 150th anniversary of the Shipping Forecast, a product which is arguably more popular today than it was in 1867 and it continues to be the

first port of call for mariners. Not many services have endured for such a long time, but can you trust it?

The roots of the iconic Shipping Forecast are tied to a terrible tragedy. In October 1859, *The Royal Charter*, laden with in excess of £28 million (in today's money) of Australian gold, was torn to pieces just off the Welsh coast with the loss of more than 400 lives; there were



Vice Admiral FitzRoy © K E Woodley

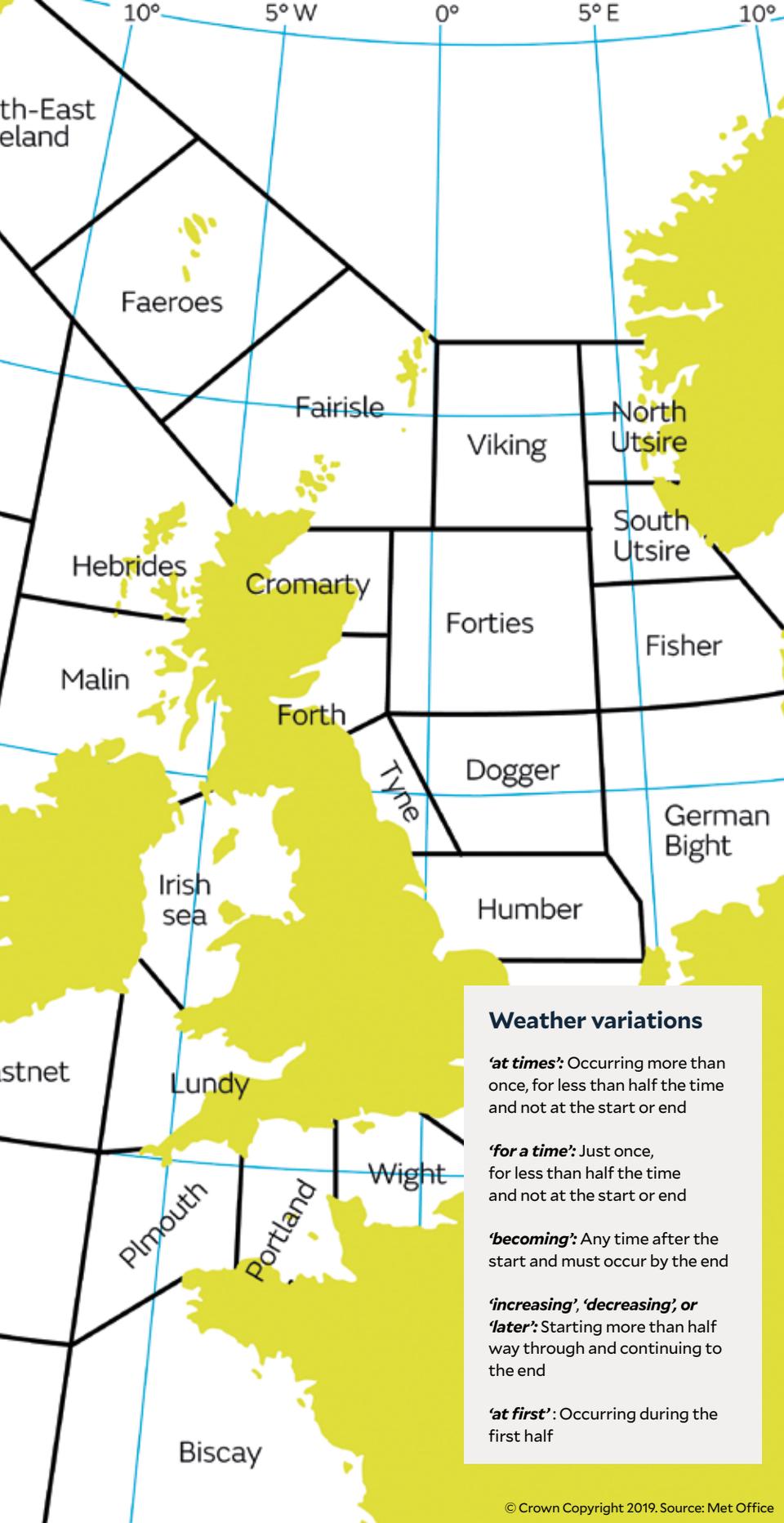
only 39 survivors. According to Board of Trade records, a total of 133 ships were sunk during that storm and another 90 badly damaged, with an estimated death toll of around 800. Although the Welsh coast had a system of lighthouses and buoys at the time, maritime mortality remained higher than in any other occupation, with approximately one in five mariners dying at sea.

Following this disaster, the national press called for a storm warning service to reduce such terrible losses. Robert FitzRoy, founder of the Meteorological Office, armed with his new and controversial science of weather forecasting, believed that he was the man to provide it.

Today's Shipping Forecast has come a long way since the early days of telegraph sent warnings, communicated to passing ships via a system of cones and drums hoisted on masts around the coast. Greatly regarded as it was during these very early days, the 150th anniversary celebrations revealed the enduring popularity of the Shipping Forecast – highlighting the extent to which it has now become part of our national psyche, appreciated far beyond the audience for which it was primarily intended.

Although we like to think of these forecasts as a purely British institution, the Shipping Forecast is part of a suite of Met Office-produced area-marine products that play a small part in a global service to shipping. The oceans of the world are divided into 21 regions (known as METAREAs) and together these form the meteorological input to the Global





Weather variations

'at times': Occurring more than once, for less than half the time and not at the start or end

'for a time': Just once, for less than half the time and not at the start or end

'becoming': Any time after the start and must occur by the end

'increasing', 'decreasing', or 'later': Starting more than half way through and continuing to the end

'at first': Occurring during the first half

Maritime Distress Safety System, with the UK responsible for METAREA I. In addition to these forecasts, the well-known Inshore Waters Forecast (for within 12 nautical miles of the coast) is also commissioned by the Maritime & Coastguard Agency to help to ensure the safety of smaller vessels closer to the coast.

Anyone who has listened to the lilting tones of the Shipping Forecast will be aware that it is comprised of four components:

- wind speed and direction: which is based on the Beaufort Force scale, and an eight-point compass
- sea state: which uses the Douglas wave height scale, ranging from Smooth (less than 50cm) to Phenomenal (greater than 14m)
- visibility: which ranges from Very Poor (less than 1km) to Good (greater than 5nm)
- and the prevailing weather type.

Although these broadcasts may be extremely familiar, have you ever wondered how accurate they are? The Met Office takes forecast accuracy seriously and a team of scientists is employed to continuously monitor performance. These scientists assess not only weather prediction models but also the products that are often derived from them, and naturally this includes the iconic Shipping Forecast. Assessing the accuracy of handwritten text is often challenging. The first step in such an assessment is to understand what each forecast term means. Thankfully, only a limited number of terms are available to the Operational Meteorologists who hand-prepare these forecasts and consequently bespoke software can automatically interpret the vast majority of the forecasts that they issue.

Unfortunately, relatively few traditional observations (those reported by buoys, lightvessels and passing vessels) are available within the sea areas mentioned by the Shipping Forecast and it is unreasonable to expect these observations alone to capture every wind speed that occurs. However, a better picture is achieved by blending the latest high-resolution gridded model output with all the observations available at the time. Produced after the event, this truth data is regarded as a best approximation of the past state of the atmosphere and the most comprehensive available.

This plot, which is automatically generated in near-real-time by the





verification system, displays the interpretation of the forecast issued for midnight on 4 October in Lundy. The horizontal red and green lines identify the forecast wind speed range. During the morning, Beaufort Forces 6 to 8 are predicted and after midday (the 'later' period) Forces 4 to 8 are forecast, decreasing to no more than Force 5 by the end of the day. The overlaid blue boxes with whiskers show the observed distribution of wind speeds during the forecast. To be perfect, all the observations must lie within the forecast range and every category mentioned must also be observed. In this case all forecast categories were observed; however, some observations fell below the range. The measured accuracy for this forecast is 92.5%.

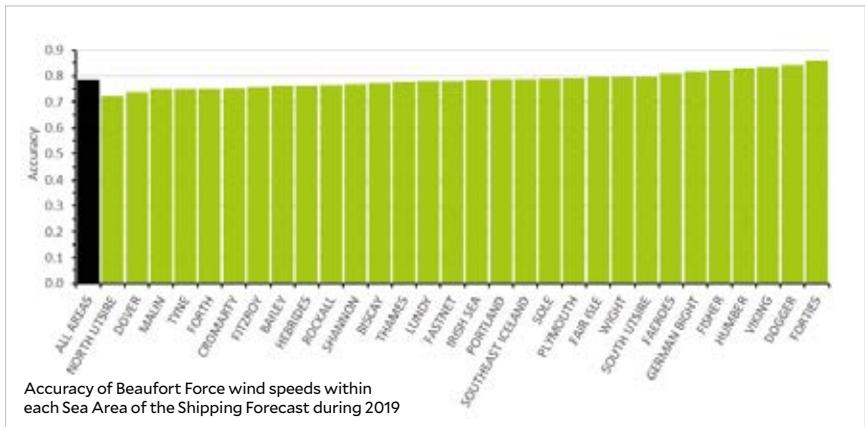
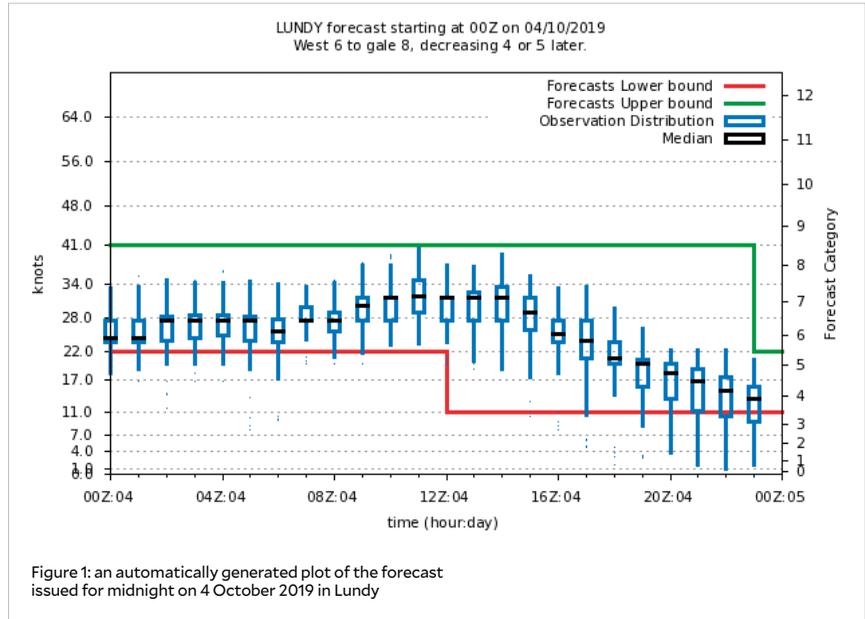
The automatic verification system runs continuously, day and night, producing hourly results which are fed back to Operational Meteorologists to help them prepare the text for the next forecast.

Using this assessment method, Shipping Forecast wind speeds during 2019 were exactly correct 78% of the time (ranging from 72% in North Utsire to 86% in Forties) and correct to within one Beaufort Forecast category on 95% of occasions (a similar analysis of the wind direction revealing an accuracy level of 83%).

The source of the error is almost entirely due to over estimation, a well-known phenomenon that seemingly remains uncorrected by Operational Meteorologists. However, the main reason for this is the strict broadcast limit of 370 words which often makes a full description impossible. So, the common practice is to remove the lowest categories from the forecast when word count is too high.

With supercomputer sizes continually increasing and numerical models constantly improving there is no doubt that accuracy will also continue to improve. However, although the Shipping Forecast will always remain relevant, with all the changes that have occurred since it first began in 1867, will it still be recognisable in another 150 years?

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Inspiring a new generation

Younger Brother and former Secretary to the Corporation Commander Graham Hockley LVO RN writes about his new role as Chair for the Maritime Charities Group



Graham Hockley is pleased to take on his new role

The Maritime Charities Group (MCG) has seen a number of changes and developments since the last round-up in *Flash*. In particular,

Commodore Barry Bryant has stood down as the Group's Chairman on his retirement as the Chief Executive of Seafarers UK. Having recently retired as Trinity House's Secretary, I was pleased to assume this role.

However, the key event over the last few months has been the Group's conference 'Navigating Change' Two Years on: A 2019 Update, which was held at Trinity House on 28-29 October. The report put to the conference indicated that there was growing concern over issues around drug and alcohol abuse, modern slavery and mental health. The conference also heard that many maritime charities were concerned about how the next 12 months would turn out and in particular whether there would be sufficient resource to meet increasing and changing needs.

This latter issue was noted by the conference and prompted many to recognise the need for increased co-operation, not just within the sector but also with other third sector organisations. For example, many of

the problems faced by ageing seafarers are identical to their contemporaries who have not been to sea. The MCG is looking to move these issues on and, in particular, it is keen to see how it may facilitate greater co-operation across the seafaring and other sectors. It has also been working with a number of maritime charities and experts to develop a suggested criterion for the development of a standard to deliver training for seafarers' mental health and wellbeing for Merchant Navy sea-going or shore-based personnel. This work is nearing completion and has been welcomed by many within the maritime industry. It is hoped that this draft standard will be launched in March 2020.

The work that the MCG members have agreed has been co-ordinated, progressed and expedited by Ms Valerie Coleman, the Group's Programme Development Manager. She has oiled the

“THE PROBLEMS FACED BY AGEING SEAFARERS ARE IDENTICAL TO THEIR CONTEMPORARIES WHO HAVE NOT BEEN TO SEA”

wheels and kept the MCG's projects and interests moving forward since 2007. She has made a major contribution, not just to the Group, its projects and achievements, but the sector as a whole. Sadly, for the Group, she feels it is now time to follow her many other interests and become her own Managing Director! The Group wishes her well for the future and owes her a considerable debt of gratitude.



Lighthouse photography competition

Enter our annual lighthouse calendar challenge

Every year Trinity House holds a competition for photographs of our lighthouses. Trinity House selects 12 photographs of lighthouses entered as part of this competition to be included in the annual Trinity House lighthouse calendar.

The overall winning entry receives a £200 gift card for use at John Lewis Partnership stores. To find an overall winner we post the selected 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's, St. Bees, St. Catherine's, St. Tudwal's, Start Point, Strumble Head, Southwold, Tater Du, Trevoise Head, Trwyn Du, Whitby or Wolf Rock.

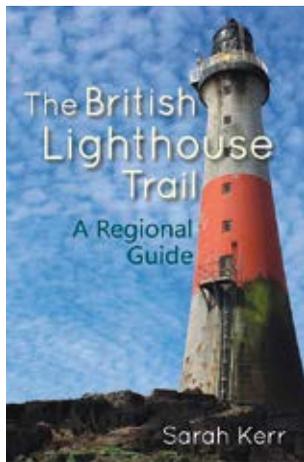
Photographs can be submitted online at www.trinityhouse.co.uk/photographic-competition where terms and conditions can also be found.

Good luck!

- ❶ Stormy Europa Point Lighthouse, Gibraltar
- ❷ Beachy Head Lighthouse
- ❸ Peninnis Head Lighthouse

BOOK REVIEWS

A round-up of maritime publications that have been sent to us and reviewed by **Paul Ridgway**



THE BRITISH LIGHTHOUSE TRAIL

By Sarah Kerr

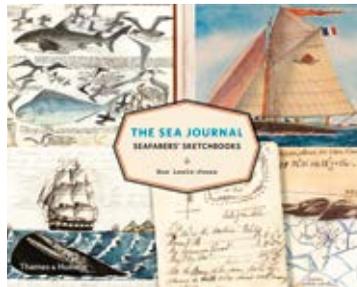
Whittles Publishing, 318 pages, £18.99
ISBN 978 184995 440 2

This is claimed to be the ultimate guide to all major and minor lighthouses in the United Kingdom, structures that allow: "Access for at least one person inside any part of it."

It includes practical recommendations as to how the reader may see (or visit) these sea marks, along with details of those open to the public and, essentially, their features (for example white tower), year established (or rebuilt), designer, Admiralty number, light character, Ordnance Survey grid reference, and if access is possible and how this may be achieved. To this are added the briefest of historical footnotes indicating perhaps where connected artefacts are to be found.

Featured here is a wealth of colour photography with location maps covering 25 regions of the coast embracing no less than 612 lighthouses, 268 of which are in our waters.

This is a rare work for lighthouse enthusiasts, provided with 26 maps supported by a numbering system and layout enabling the traveller to achieve his pharological tally.



THE SEA JOURNAL

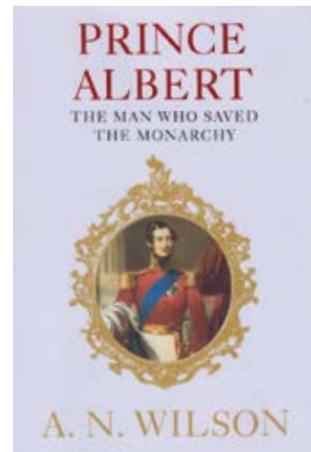
By Huw Lewis-Jones

Thames & Hudson, 304 pages, £29.95
ISBN 978 0 500 02127 9

A treasure trove of visual delights: a collection of first-hand journals and sketchbooks created on ocean voyages through the ages.

The sea has been an endless source of fascination, at once both alluring and mysterious, a place of wonder and terror. *The Sea Journal* contains first-hand records by a great range of travellers of their encounters with strange creatures and new lands, full of dangers and delights, pleasures and perils. Here in landscape format are the works of great pioneers and commanders: Anson, Beaufort, Bligh, Drake, da Gama, Hurley, Nelson, van de Velde and Wylie created in peace and war over three centuries. It is all in splendid detail, depicting marine life, clouds, people, ships, and native craft.

Seafarers presented include Sir Francis Chichester (1901-1972), who was a Younger Brother. Captain Robin Knox-Johnston, also a Younger Brother, produced a chapter introduction and two pages of his own voyaging – he was the first to sail single-handed and non-stop around the world and his logbook from *Suhaili* is shown.



PRINCE ALBERT: THE MAN WHO SAVED THE MONARCHY

By A N Wilson

Atlantic Books, 430 pages, £25.00
ISBN 978 1 78239 831 8

For more than six decades, Queen Victoria ruled a great empire with Prince Albert, (born 1819, died 1861) one of the influencers and architects as her Consort. A composer, engineer, soldier, politician, linguist and bibliophile, Prince Albert was a genius. Sadly he lived only 42 years. With access to the Royal Archives at Windsor, a huge bibliography and other references, Wilson has given this historical figure due reverence and recognition.

Albert, whose portrait hangs in Trinity House, was regarded as a moderniser (witness the Great Exhibition of 1851 and Albertopolis, the seat of learning in South Kensington). He took much interest in the welfare of the labouring classes or the urban poor, particularly with regard to housing. In a very busy public life, he was Master of Trinity House from 1852 to 1861 (he succeeded Wellington) and his successor Viscount Palmerston (1862-1866) was followed by his second son, Prince Alfred, Duke of Edinburgh. At the same time Edward, Prince of Wales (later King Edward VII) was an Elder Brother.



Smeaton, sandwiches and safety at sea

The pupils of Shakespeare Primary School in Plymouth have been studying lighthouses and the sea, and sent us their job application letters. Do they have what it takes to be a lighthouse keeper?

Sometimes the mailbag at Trinity House presents us with some very pleasant surprises, and this was certainly the case in mid-December when we received 24 written applications for the job of lighthouse keeper from the pupils of Class 2 at Shakespeare Primary School in Plymouth.

The class teacher added a cover letter to say that the pupils had been studying the legacy of famed lighthouse engineer John Smeaton, and had even visited Smeaton's reconstructed Eddystone Lighthouse on Plymouth Hoe. Their newest exercise was to extend their learning by writing job application letters to become lighthouse keepers, each of which described why the author would be suited to doing that job and living that life.

The children's merits and qualifications covered a wide range, and all demonstrated a keen interest and capability. We at Trinity House feel that they would all have made an excellent addition to Trinity House's commitment to safeguarding ships and seafarers.

Here is a selection of excerpts of some of the children's letters.

Ben: *"I am writing this letter because I would like to have the job to be a lighthouse keeper because I have many skills for you and I can cook and wake up at the right time. I can paint and also polish too, I have my rescue certificate too. Also I have a cat. My hobbies are reading and fishing. I can guide ships and I am a good swimmer and I have a flying licence."*



Kalisha: *"You should try my sandwiches."*
 Joly: *"I am writing this letter because I think it is a good idea to be a lighthouse keeper. I am good at swimming underwater with goggles on and I have a helicopter pilot's licence. I can guide ships from crashing on the shore and the rocks by making sure the light shines bright. My hobbies are I cook cakes and pizzas and I eat chocolate. Do you think I would be a good lighthouse keeper?"*

Olly: *"I am good at painting and I am good at fishing. I can swim and save lives. Also I can row a boat."*

- 1 Start Point Lighthouse
- 2 Beachy Head Lighthouse
- 3, 4 Life at Beachy Head, 1955





5 Landing at Beachy Head Lighthouse

6 Change of staff at Wolf Rock, Christmas 1956

7 Mumbles Lighthouse

Moses: *"I am good at doing rescues and I can swim a long way. My hobby is painting. I am good at rescuing those in danger at sea."*

Jacob: *"I can swim ten hundred metres and I can row a boat. My hobbies are writing, cooking and knitting."*

Blaikie: *"I can cook very well. I can cook anything you want even all day breakfast! I like cheesy chips and spaghetti Bolognese. I can clean the lighthouse every day. I can make my bed."*

Logan: *"I am good at doing rescues at sea because I can row a boat and swim a long way. I am good at heights and at painting. My hobby is catching fish! What a fantastic job this is!"*

Oliver: *"I will be good at rescue because I can row a boat and I want to get my helicopter pilot's licence."*

(Un-named): *"I am really good at climbing ladders. You should see my ironing. [...] I am so good at cleaning my bedroom and also good at being nice. I am good at making friends. [...] Pick me for being a lighthouse keeper because I'm good at staying awake."*

Lola: *"I'm good at rescuing people. I'm a good knitter and painter. I love gardening and I also love toast and pizza and cola. I'm not scared of heights."*

Darci-Rae: *"I have a crane certificate and I am amazing at swimming! I can sail a boat. Also I can rescue people from a ship that got hit on the rocks. Also I can operate a radio. I am amazing at reading and can cook! I can polish the light super clean! I like playing jacks! Some of my hobbies are painting, reading, jacks, dancing and singing."*



8 Longships Lighthouse
 9 Washing pots and pans at Beachy Head c1955
 10 Longships Lighthouse

The Lighthouse, Mumbles.

Esm: "I want to rescue people and I can help by keeping the light clean and shining bright. I am really good at swimming. I will keep it clean. I like painting, tidying and doing the dishes. It would be really exciting!"

Jamie: "I can clean the light every day and climb ladders. I will miss my family but I want to save people from drowning."

Lou-Lou: "I would keep the light clean and turn it on at the right time."

Gracie: "I love making sandwiches with ham and cheese and I think that you will like it."

Myla: "I would be good at painting the lighthouse and I am good at ironing. I am good at rowing a boat and washing and cleaning. I am also good at cooking delicious food. My hobby is doing sea crosswords."

I want to save people and animals even baby animals and people if they drown!"

Enes: "My hobbies are riding and playing football. I am also good at fishing! I want to help people to stay safe on the sea."

Star: "I am really good at cooking sandwiches and I am good at driving. Also I am a good cleaner. I am really good at climbing ladders and I have a certificate. I can rescue people when they are in trouble."

Evie: "I like reading and writing. I do not like gardening. I love jacket potatoes. I love crackers and cheese. I like to do washing and cleaning. I love sweets. I hate pickled onions."

Tilly: "So can I be a lighthouse keeper? I think I have all the skills you are looking for. I am good at painting and I have a hobby of going to bed after 11 o'clock!"

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 reliable, efficient and cost-effective aids to navigation service for the benefit and safety of all mariners

The Corporation of Trinity House

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Cover image

One of the graphics from a suite of educational resources developed for school children to learn about shipping, seafaring and safety.