



TRINITY HOUSE

flash

The Trinity House journal // Spring 2019 // Issue 30

Down to the sea

The recently rediscovered origins of an iconic lighthouse show the ingenuity and hard work behind these much-beloved structures

flash

SPRING 2019 | ISSUE 30

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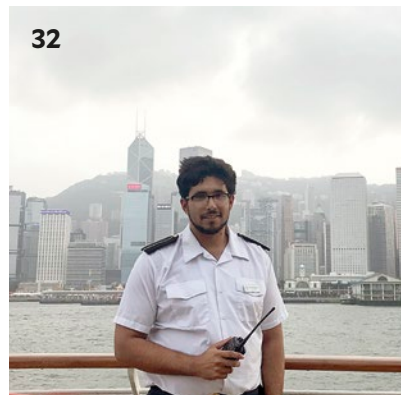
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Never the same day twice

Welcome to the spring 2019 issue of *Flash*! I would like to thank Nichole Kelly for doing a great job of putting together the last *Flash* in my absence; I have had a lot of excellent feedback about the issue. I would also like to thank everybody who contributed to that issue and this one.

In this issue we will hear about the work of the Grants Manager for the Maritime Charity and all of the good work that that entails; we will also hear about the teamwork involved in running an emergency exercise to test business continuity readiness and crisis response at our Harwich depot.

Many thanks are also due to IMarEST for the fascinating insight into what they do; likewise I am sure that readers will also enjoy seeing the handsome photos of Beachy Head Lighthouse as it was built in 1902 which were recently secured at auction with help from the Trinity House Corporate Charity.

Neil Jones, Editor

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Captain Ian McNaught

Deputy Master

As a lighthouse visit from the Master starts 2019 for Trinity House, we also look forward to a new project to replace a ship and take pride in the achievements of our staff

It was my great pleasure to welcome the Master HRH The Princess Royal to Longstone Lighthouse in January as she continued her tour of our wide-ranging estate. The station, built in 1826, was re-engineered in 2015 with an LED light fitted within the historical twin spectacle lens but is still remembered best for the striking heroism of Grace Darling and her lighthouse keeper father William in 1838.

Readers of the last edition of *Flash* will likely have noticed with interest an abundance of historical articles, as a string of anniversaries brought our diverse heritage to light all at once: pilotage, almshouses, lighthouse keepers and listed buildings, as well as the losses from the First World War.

It strikes me—more than ever before—that our stakeholders trust that we are uniquely constituted and qualified to balance our immense heritage with the ceaseless and fast-paced demands of meeting the requirements of the modern mariner, whether that means our work as a General Lighthouse Authority or as the UK’s largest endowed maritime charity.

Occasionally, one might hear expressions of preference for the ‘old days’ when presented with the advances of technology or changing practices; conversely, some might wonder why an organisation that deploys state-of-the-art technology maintains ties to heritage, tradition and distinction. Some equate this apparent split to the ‘two halves’ of Trinity House: the GLA and the charitable side, but I suggest that this is an over-simplification; the state-of-the-art GLA utilises lighthouses that are often centuries old, while the long-standing charity is busy training cadets that may in the future become leaders of the UK maritime sector, ensuring our nation’s place in a competitive global industry.

In that vein, I am pleased to report that we have begun in earnest the process of replacing the long-serving THV *Patricia*, and our project team is working to investigate options for replacement tonnage that will become part of a fleet that began in 1741.

I would like to welcome Mrs Valerie Owen OBE in her capacity as the newest Non-Executive Director on the Lighthouse Board, replacing the retired Professor Peter Matthews CBE. Valerie’s knowledge and experience of the engineering sector will be an invaluable guide for the Board.



HRH The Princess Royal with the Deputy Master at Longstone Lighthouse

Of course, many thanks are due to Peter for his direction and contributions over the years, all of which helped make us who we are.

It is with great sadness that we mark the passing of Elder Brother Captain Derek Richards RD* RNR, who passed away in October; Derek will be remembered fondly by the Court.

Finally, it was a great honour to be made a Commander of the Royal Victorian Order in HM The Queen’s New Year’s Honours List; this is a direct result of the respect and affection felt by the Royal Family for Trinity House, our works and all those who do those works. As such I want to take this opportunity to thank all staff members past and present for what they contribute on a daily basis to Trinity House and the safety of the mariner. January’s Staff Awards ceremony saw our Library packed almost to capacity with staff receiving awards for their achievements and otherwise commendable activities and performances. Well done all!

Jan McNaught

Trinity House

Review of the last six months:

Looking back at highlights from Trinity House's calendar

OCTOBER 2018

A visit from overseas friends

Trinity House staff were happy to welcome a delegation from the Republic of Korea over the course of a week in October, as the eight-person research group investigated ways of exploring ways they can develop their own lighthouse heritage back home.

The group was comprised of representatives from the government's Ministry of Oceans and Fisheries and the Korean National Lighthouse Museum, and, although they visited a handful of other maritime-related sites around London, their focus was on how Trinity House manages its heritage across a diverse estate.

They began with a tour and an introductory session at our London headquarters on 22 October, with Legal Advisor **Russell Dunham** and the Deputy Master and the Legal and Support Team hosting the visitors for the day.

Making their way down south, they met with Head of Operations and Engineering



At Lizard Lighthouse with Simon Millyard

Simon Millyard and St Just's Technical Manager **Malcolm Johns** for Cornish pasties and a tour of the heritage centre at Lizard Lighthouse, which opened in 2009 having adapted the 19th century engine room. They also visited Pendeen

Lighthouse and the operations outstation at Just, next to Land's End.

The next stop on the tour was Portland Bill Lighthouse in Dorset, where the group was met by Commercial and Planning Manager **Bill Summers** and Commercial Manager **Lynn Pomares** to look at the visitor centre that was redesigned and reopened in 2015 as a result of a generous bequest to the Trinity House Maritime Charity.

Deputy Director of the Ministry of Oceans and Fisheries Jeongsik Kim said that: "As part of continuing efforts to inherit a success of the 19th IALA Conference and further develop the Incheon Declaration, a Korean delegation consisting of four different government ministries are here for a short-term study programme on the subject of the conservation and sustainable use of historical lighthouse. On behalf of Korean delegation, I would like to thank Trinity House for inviting and welcoming us."



The High Sheriff and his wife with Simon Millyard in the Buoy Yard at Harwich

OCTOBER 2018

High Sheriff of Essex B R H Burrough Esq

On 2 October, we welcomed a visit from the High Sheriff of Essex B R H Burrough

Esq and his wife at our Harwich depot to give them an insight into our role as an aid to navigation provider and local employer, looking around the Buoy Yard, Planning Centre and THV Alert.



St Ann's Head Lighthouse by west coast Technical Manager Jim Veall

NOVEMBER 2018

Trinity House lights up for end of WWI

On Sunday 11 November, to mark the 100th anniversary of the end of the First World War, a number of unique events were organised by HM The Queen's Pageantmaster Bruno Peek, including WW1 Beacons of Light in which Trinity House took part.

At 1900 hours, more than 1,000 gas-powered 'beacons of light' were lit, symbolising an end to the darkness of war; ten Trinity House lighthouses and locations took part around the country, being lit by volunteers from Trinity House and attended by members of the public.

NOVEMBER 2018

Emergency planning exercise crossover

On 14 November Trinity House teamed up with Essex County Fire and Rescue Service to run an extensive exercise that tested our initial response to a serious accident and fire situation in an industrial environment,

test Essex County Fire and Rescue's response to a large incident in our Buoy Yard and test our own Crisis Management and Business Recovery Plan. The exercise drew in participants from across the

organisation across multiple locations and was a valuable learning experience.

More about the exercise is described later in this issue on pages 40-41.



Jess Chopping, Anna Woodward and Mark Britton during the emergency exercise

NOVEMBER 2018

Support for a seafarer

Simon Millyard, Head of Engineering and Operations—while attending the IMO World Maritime Day in London in September 2015—approached a group of young attendees; all turned out to be Officer Cadets from various companies, and in a general discussion about what ships they had been on and where they had travelled to it emerged that one individual—Sayyid Mtsumi—was unable to find a ship to join.

Sayyid had completed his college time in Kenya but was not sponsored by a shipping company, though he was sponsored to attend the IMO World Maritime Day by the IMO as he had passed his exams with distinction in Kenya.

Following discussions with the Deputy Master, **Captain Ian McNaught**, at the

same event it was decided to determine whether any support could be given through the Trinity House Merchant Navy Scholarship Scheme and so **Captain Nigel Hope**, Director of Maritime Training was contacted. Captain Hope spoke with Chiltern Maritime—which manages the cadets daily for Trinity House under his direction—to determine what support could be given for Sayyid to complete his cadetship and obtain the OOW Officer of the Watch qualification.

With the assistance of Don Millar, Director of Chiltern Maritime, the necessary visa and authorisations were obtained for Sayyid to complete sea time on the Trinity House vessels *Patricia* and *Galatea*.

Sayyid rose to the challenge and completed sea time on both vessels,

completing his task book and gaining valuable sea time experience and at the same time receiving excellent guidance and tuition from the ships' crews.

Sayyid was delighted for the support given throughout his involvement with Trinity House and he obtained the necessary sea time to return to his home country to take his final exams for his OOW certification. In addition to the support given by Trinity House, the Institute of Chartered Shipbrokers London supported Sayyid's tuition fees for the college phases.

Sayyid said: *“Both institutions have shown unfailing support despite the fact they are European-citizen-only cadetship programmes and I am thankful to both institutions for their confidence.”*

NOVEMBER 2018

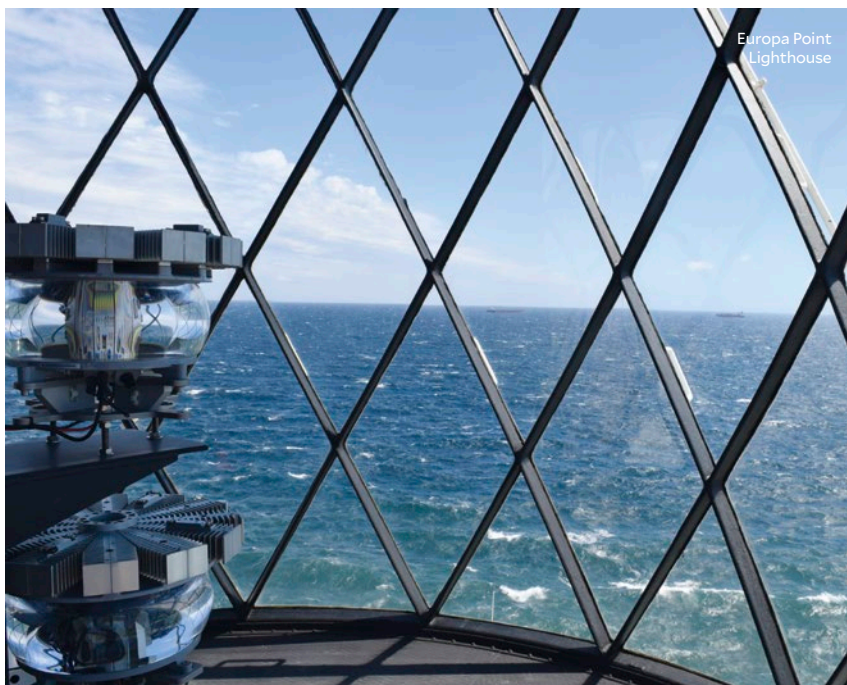
GRAD name change

The Research and Radionavigation team (R&RNAV) that supports the three General Lighthouse Authorities (GLAs) of the UK and Ireland—the Northern Lighthouse Board, Irish Lights and Trinity House—will now be known as GLA Research and Development (GRAD).

GRAD will continue with its work to undertake research and development of physical and radio marine aids to navigation, support systems and their integration to support the GLAs' mission to deliver a reliable, efficient and cost-effective aids to navigation service for the benefit and safety of all mariners.

In recent years, the team's successes have included a number of world firsts in the fields of radionavigation and visual signalling; GRAD and its staff are recognised the world over for their knowledge and achievements in the provision and future provision of marine aids to navigation.

More information about the work of GRAD can be found at www.gla-rad.org



Santa Tetera awarded 'Top Graduating Student' at Fleetwood Nautical Campus

NOVEMBER 2018

Outstanding achievement award for cadet

Congratulations to Trinity House/Chiltern Maritime Deck Cadet **Santa Tetera** who won the Top Graduating Student of November 2018 for the HNC in Nautical Science at the Fleetwood Nautical Campus Graduation ceremony, which took place on Friday 16 November. The prize was awarded for 'outstanding achievement during their maritime officer training.' Santa started her cadetship in February 2016 and has spent her sea phases on board THV *Galatea*, Windstar's *Star Legend* and Shell's *Silver Ebalina* and *Methane Kari Elin*. Santa performed so well during her last two appointments with Shell that after completing her HND she will be starting her first seagoing position with them as a junior officer. Contact Chiltern Maritime for further information on sponsored cadet training opportunities or apply online at www.chilternmaritime.com

NOVEMBER 2018

Harwich snapped from the air

Many thanks to Terry Joyce for sending us this picture of our Harwich depot from the air!

Terry said: "My Uncle Phil was an aircraft

designer and pilot. When he died he left me some money. I used the money to learn how to fly.

"I combine my love of flying with my

passion for photography. I mainly fly around my home county of Essex, taking pictures for pleasure and sharing them with anyone I think would like them."



DECEMBER 2018

Trinity House pilots RIN route to Engineer Registration



From left: Dr Alan Grant and Mr Martin Bransby

The Royal Institute of Navigation (RIN) receives generous charitable support from Trinity House, and so it is very fitting that the first navigation specialists to achieve Chartered Engineer status by the RIN route are **Mr Martin Bransby** and **Dr Alan Grant** of Trinity House. Both are experienced engineering and navigation practitioners and RIN Fellows, and had no difficulty in demonstrating that they met the Engineering Council's Professional Registration standard.

Their work includes the development of new technology aids to navigation, which

are designed to be more effective, more reliable, and more economical than existing devices. Resilience against failures in, or denial of, satellite navigation information is an increasingly important factor – as it is for others working with the technology of positioning, navigation and timing.

The Royal Institute of Navigation is a registered charity, and was already well-established as a Learned Society, globally respected as a centre of excellence for all things navigational—by air, land, sea or space or cognitive—before embarking on the long route to Engineering Council

registration and becoming a professional body. The RIN over the past few years has gradually taken on the role and many of the attributes of a professional body, a function that is entirely consistent with the Institute's founding principles. It was time to formalise that function, and that involved selecting the Royal Aeronautical Society as the right partner to create a positive experience for candidates and negotiating with them the essential agreements and document formats, while making the necessary changes to our corporate governance and Members' Rules. In a sense, it means that the Royal Institute of Navigation has come of age.

The RIN now offers Engineering Council registration at Chartered Engineer (CEng), Incorporated Engineer (IEng) and Engineering Technician (EngTech) levels, and suitably qualified RIN members and Fellows can apply for registration using a no-frills application process.

Reported by James Taylor (Immediate Past President of the RIN) and Rod Angel (Vice President of the RIN).

For more information please visit www.rin.org.uk and follow the link via the home page; or email membership@rin.org.uk for support and advice towards professional registration.

DECEMBER 2018

Money for old rope

Ryan Poulton, Petty Officer on THV *Galatea's* port watch, came up with the idea of donating old rope from the ship to local organisations. Rope was donated to Colchester Zoo for the primate enclosures and also to No. 18 Lightvessel. Ryan and the PR team took the rope to Colchester Zoo where they were shown the orangutan enclosure and introduced to Rajang, the elderly orangutan. The rope will hopefully become part of the 'environmental enrichment' furniture in the compound.

A second bundle of rope was donated to No. 18 Lightvessel, an ex-Trinity House lightvessel which has been restored and sits in Harwich Quay and welcomes visitors on board.



Ryan with Rajang, who sadly passed away in December 2018



Deputy Master and Executive Chairman
Captain Ian McNaught

DECEMBER 2018

Deputy Master awarded CVO

On 29 December, our Deputy Master and Executive Chairman **Captain Ian McNaught** was made a Commander of the Royal Victorian Order (CVO) in HM The Queen's New Year Honours List. The Royal Victorian Order was established in 1896 by Queen Victoria to recognise distinguished personal service to the monarch of the Commonwealth realms,

members of the monarch's family or to any viceroy or senior representative of the monarch; it is given at the discretion of the sovereign.

The Deputy Master said this of the award: "I am very honoured and very pleased—as one might imagine—to receive this award and I look forward to bearing the distinction with pride. The

award is made all the more meaningful by the fact that it reflects Her Majesty's recognition of not just me but of all those whose hard work and skill makes Trinity House a name to be proud to be associated with. I want to thank everybody at Trinity House for their support, their work and their dedication to doing the job as well as it can be done."



HRH The Princess Royal with the Deputy
Master at Longstone Lighthouse

JANUARY 2019

HRH The Master visits Longstone Lighthouse

We were very pleased when HRH The Princess Royal, the Master of Trinity House, asked if she could pay a visit to Longstone Lighthouse as part of her ongoing familiarisation with our wide estate. Being only too happy to oblige, we made arrangements for her to visit on 16 January, accompanied by Deputy Master **Captain Ian McNaught**, Director of Operations **Commodore Rob Dorey**, Head of Engineering and Operations **Simon Millyard** and Lighthouse Manager **Warren Clarke**, travelling by local boat with attendant **George Shiel**.

Also accompanying the party was local Peer Viscount Ridley, Baron Wensleydale of Blagdon and Blyth in the County of Northumberland, who was able to introduce local dignitaries to HRH The Princess Royal when the party mustered at Seahouses in the morning.

The party then travelled by boat to the lighthouse, followed by a tour of the station which included a close look at the aid to navigation elements that were re-engineered in 2015, as well as the refurbished visitor centre which is today operated by George and his wife.

Making their way back to shore in the early afternoon, the party went on to nearby Bamburgh to tour St. Aidan's Church and the memorial to nationally-beloved heroine Grace Darling—the daughter of Longstone Lighthouse keeper William—whose brave rescue of drowning shipwreck victims in 1838 created a local legend that thrives to this day. The Princess commented that the lighthouse made for a fascinating visit, and that she was pleased that it is open to the public and a suitable testament to the heroism of Grace and her father.

Staff Awards ceremony

The Trinity House Staff Awards took place on 19 January 2019 at our London headquarters, thanking selected staff and contractors for their hard work and recognising their achievements.

First up were those earning their long service awards: **Richard Tomkins** and **Stephen Vanstone** (20 years), **Malcolm Johns** (30 years) and **Anthony Mack, Martin Thomas** and **Martin Price** (40 years).

Awards for outstanding individual achievements benefitting Trinity House went to **Daniel Sime** for his diligent technical support for third-party IT systems; **Frances Campbell** for doggedly managing the complex—and sometimes surprising—hire car arrangements that so many staff depend upon; **Nichole Kelly** for taking on single-handedly the work of two people and delivering the PR team's work to an exceptionally high standard for two months in the absence of her line manager; **Stephen Durham** for his outstanding initiative in creating the Fair Safety Culture initiative; **Carline Harris** for the in-house catering that keeps both staff and visitors to the headquarters well fed; and **Alwyn Williams** for his work with digital reporting systems that saved many hours of manual reporting.

The awards for outstanding team achievements benefitting Trinity House this year went to THV *Galatea's* Starboard watch (**Darren Peterson, James Donnelly, Stephanie Keohane, Adam Keen, Reece Mitchell, Robert Rowlands, Beth Wilkinson, Phil Dick, Jonathan Turnbull, Luke Chapman, Jennifer Mahon, Scott Ravizza, Ruairdh Lane, Gwynfor Roberts, Robert Merritt, Daniel Griffin, Ian Garner, Alistair Hutchinson, Lewis Gorton, Jason McNeill, Anthony Mack, Kevin Taylor** and **Jack Oliver**) for their quick and competent response when a crew member lost consciousness on deck and needed helicopter evacuation in September.

The London Maintenance Team (**Mick Campbell, Paul Tindall** and **Fernando Alomoto**) were awarded for their full refurbishment of the Corporate offices, saving the charity thousands of pounds.

The Harwich Supplies Team (**Dawn Culley, James Turner, Robert Mitchell** and **Lewis Dale**) were awarded for their



management of the often-challenging storage requirements, keeping on top of the logistics of the smallest to largest of items.

The Internal Audit Team (**Rebecca Roberts** and **Lucy Mulford**) were awarded for their attention to detail and planning in ensuring a seamless and successful transition to the new ISO 9001:2015 and ISO 14001:2015 Standards, working with management to bridge gaps and achieve full implementation of the new requirements.

Finally, the Finance Team (**Barry Nunn** and **Sarah Harman**) were awarded for their meticulous and demanding work in compiling the Corporate Plan 2019-24.

Awards for recognising job-related professional qualifications went to **Danny Lowther** (CIPD Level 5 Intermediate Certificate in HR Management); **Livs Skrundenieks** (OOW unlimited); **Chris Williams** (Professional Certificate in Management); **Steve Page** (BSc Computing & IT (Open)); **Charlie Kenealy** (HNC in Electrical & Electronic Engineering); **Lewis Dickinson** (HNC in Electrical & Electronic Engineering); **Lewis Dale** (IOSCM level 3 Warehousing); **Joe Robinson** (ACCA); **Rebecca Roberts** (Chartered Internal

Auditor & Qualification in Internal Audit Leadership); **Ian Gorvin** (Professional Certificate in Management); **Ian Archer** (Chief Mate Certificate of Competency); **Evan Grant** (Second Engineer Officer Certificate of Competency); **Jared Seeley** (Apprenticeship – NVQ Level 3 Extended Diploma in Engineering Maintenance); **Alwyn Williams, Bill Summers** and **Ross Chadwick** (IALA Level 1 AtoN Managers Course); **Richard Humphris** (BSc (Honours) Mathematics); **Lawrence Hughes** (Cisco CCNP Security Certification); **James Rowe** (Microsoft MCSA Windows Server Certification); **James Donnelly** (Master unlimited); **Martin Bransby** and **Alan Grant** (Chartered Engineer status through RIN).

Awards recognising contractors giving exceptionally effective service to Trinity House were presented to **James Gray** (Cluttons LLP) for his surveying work on the London HQ for over 20 years; **Colchester Skip Hire** for their helpful approach to waste management; **AT Morgan and Son** for their professional logistics service; **Peninsula Access** for their road repairs at Start Point Lighthouse, and **RS Components** for their committed account management.



1 STAFF MODEL BUILDING CHALLENGE

2018's seasonal challenge—once again organised by Design Manager **John Chilvers**—saw hopeful contestants from around the Harwich depot compete to design, build and race a model vehicle to carry a small 'buoy' (a 500ml plastic bottle) across the office building's breakout room as quickly as possible, without combustion or electrical propulsion systems, aerosols or compressed gasses and free from wires and string when crossing the course.

The contesting teams gathered on 17 December, and the prestigious first place cup was won by Head of Engineering and Operations **Simon Millyard** with his wind-up fan-driven model!

2 START POINT LIGHTHOUSE OPTIC

As part of the re-engineering of Start Point Lighthouse, a flashing LED lantern replaced the historical rotating lens as we deploy the latest illumination technologies. The new lantern has a main light and a standby light of equal range to assure availability to the mariner in the unlikely event of the main light failing. To keep this much-beloved optic on site for the many visitors who frequent the lighthouse when it is open to the public, the Small 3rd Order catadioptric optic has been moved to the flag room display area.

Plan your visit to Start Point Lighthouse at www.trinityhouse.co.uk/lighthouse-visitor-centres

3 MASTERCHEF: THE PROFESSIONALS

Our London headquarters featured in episode 14 of the eleventh series of *MasterChef: The Professionals* (5 December 2018) as they continued the search for the UK's culinary superstar. The professionals were tasked with working as a team to create a three-course fine-dining menu for special guests at Trinity House.

The chefs had two and a half hours to design and cook three exceptional courses for the **Deputy Master**, his wife **Susan** and their five VIP guests: Younger Brethren **Captain Wendy Maughan**, **Lord Jeffrey Mountevans**, **Captain Rachel Dunn** and **Shelley Jory Leigh**, as well as Elder Brother **Malcolm Glaister**.

4 PROJECT STORMLAMP HELP

The GLAs are working with three universities (University of Plymouth, University of Exeter and UCL) on the STORMLAMP project. This is seeking to understand the structural response of rock lighthouse to wave impacts by modelling and monitoring several of the exposed towers. The project team would be keen to hear experiences from retired lighthouse keepers who were stationed on rock towers during storms, particularly, though not exclusively, on Wolf Rock. Please get in touch with Professor Alison Raby at alison.raby@plymouth.ac.uk or **01752 586133**.

You can find out more about the project at stormlamp.org.uk



1. © Frode Pilelog, Dalsfjord Museum of Lighthouses 2. © D. Linkle

COMING EVENTS

A brief look at selected highlights from our forthcoming calendar

IALA World Marine Aids to Navigation Day 2019

1 July

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, 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.

The IALA Council unanimously approved ‘Marine Aids to Navigation – Successful Voyages, Sustainable Planet’ as the

theme for the first World Marine Aids to Navigation Day.

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

Seafarers Awareness Week 2019

8-14 July

This year’s Seafarers Awareness Week (SAW) will run from 8-14 July.

This year Seafarers UK will be focusing on raising awareness of the UK’s commercial fishing industry, especially the skippers and crews of fishing vessels of all sizes, from under-10m beach-launched boats, to the huge pelagic trawlers operating out of major ports such as Peterhead and Plymouth.

For more information, visit www.seafarersweek.uk

Merchant Navy Day 2019

3 September

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 were 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 details, visit www.merchantnavyday.uk

Appointments



New Non Executive Director

Valerie Owen OBE

We welcome **Valerie Owen** as a new Non Executive Director of the Trinity House Lighthouse Board. Her appointment was approved by the Court of Trinity House in September 2018 and she replaces Peter Matthews, appointed in 2012, as one of the three Secretary of State's nominees on the Board.

She is a multi-disciplinary property professional. In her early career she was a retained architect to the Marquess of Tavistock and the Trustees of the Bedford Estates, specialising in heritage and conservation work. This followed a career in property asset management with the international real estate consultancy Jones Lang LaSalle, where she became an Executive Director.

With a portfolio career she is currently Chair of Swan Housing Group, which has its own construction company, and which is pioneering modern methods of housing pre-fabrication in its new factory in Basildon, Essex.

Valerie lives on Walmer seafront, overlooking the Dover Strait, and was previously a member of Dover Harbour Board. She currently serves on the Environment Agency's Thames Regional Flood and Coastal Committee and is an RNLI shop volunteer in Walmer Boathouse.

IALA

Kevin Gregory

Younger Brother No 384, has been appointed full-time Senior Adviser within the IALA Secretariat with responsibility for training, capacity building and technical cooperation activities within the IALA World-Wide Academy, as well as providing support to the Technical Department in ensuring the efficient and integrated management of the four Technical Committees.

MAIB

The Department for Transport has announced the appointment of **Captain Andrew Moll**, Younger Brother No 435, as the new Chief Inspector of Marine Accidents, the head of the Marine Accident Investigation Branch (MAIB). He has been the interim Chief Inspector since his predecessor, **Captain Steve Clinch**, Younger Brother No 383, retired in June 2018, and he took up the post with immediate effect.

Peter Hinchliffe OBE FNI, Younger Brother No 418, has been appointed Chairman of the Nautical Institute's Executive Board.

Captain Nick Nash FRGS FRIN FNI, Younger Brother No 277, Senior Master, Carnival Corporation, was elected President of the Nautical Institute at the Institute's AGM held in Malta on 25 May 2018. He has served as Vice-President and Senior Vice-President.

IAIN

James Taylor OBE FRIN, Younger Brother No 98, President of the Royal Institute of Navigation 2015-2018; now Immediate Past President and Council Member until 2020, has been appointed to represent the International Association of Institutes of Navigation (IAIN) at IMO.

Honours

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

KCVO

Captain Nick Wright CVO RN

Younger Brother No 337. He was invested by HM The Queen on relinquishing his appointment as Private Secretary to HRH The Master, 11 December 2018.

The Merchant Navy Medal for Meritorious Service

Lieutenant-Commander David Carter LLB RNR, Younger Brother No 325, for services to the careers of young seafarers and seafarer welfare. The investiture was held at Trinity House on 26 September by HRH The Master on behalf of HM The Queen.

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:

Andrew Michael Higgs Esq

John Eugene Humphrey Esq, Chief Executive and Accounting Officer, UK Hydrographic Office

Dieter Arno Jaenicke, MNM, Chairman and Founder, Viking Family of Companies

Colin Andrew McMurray Esq, Director, Clyde Marine Training

Saurabh Sachdeva, BP Shipping, OMS Compliance & Audit Manager

Captain Louise Anne Sara, Master, P&O Ferries

Timothy James (Jamie) Ralph Sheldon Esq

Theocharis (Harry) Theochari Esq

Miss Katy Ware, Director of Maritime Safety & Standards, Maritime & Coastguard Agency

The 2019 New Year Honours List

CVO

Captain Ian McNaught MNM FN

KBE

Vice-Admiral Clive Charles Caruthers Johnstone CB CBE Younger Brother No 267

CBE

Commodore Michael John Delane Walliker OBE RN Younger Brother No 340

MBE

Alan Robert William Marsh Younger Brother No 425

Trinity House Obituaries

Captain Jeffrey William Woodhead,
Younger Brother No 106, on 31 August
2018, aged 72. He was admitted in 1991.

After the School of Navigation, Warsash, he first went to sea in 1963 with P&O in its General Cargo Division trading to the Far East, Japan and Australia for UK and Continental ports. He served more than six years before transferring to the company's Passenger Division.

In 1974-76 he was with Frendo, a new venture employing trading mini-bulkers on the Short Sea and Cross Trades; cargoes included all types of grain, steel, phosphates, lumber, paper and coal.

His first command, in 1976, was of the trailer-hopper suction dredger *Humber River* and delivery from South Africa to Dammam in the Arabian Gulf.

This appointment was followed by three years commanding oil rig supply vessels of the Maersk Group in the waters of the North Sea, Brazil and the Mediterranean.

From 1980 to 1990 he was a ship sale and purchase broker for Derrick Offshore Limited.

Captain Roger James Jenkins,
Younger Brother No 68, on 29 December
2018, aged 82. He was admitted in 1987.

He first went to sea in 1953 with Port Line and served in Port Wyndham, Port Fairy, Port Chalmers, Port Hobart, Port Napier, Port Vindex, Port Jackson and other vessels of the company trading to Australia, New Zealand, the United States, Canada and South Africa.

Ten years later he joined the Atlantic Steam Navigation Company Limited and for the next twelve years served in the vessels *Cerdic Ferry*, *Doric Ferry*, *Europic Ferry* and *Gaelic Ferry* and others trading to Antwerp, Rotterdam, Belfast and Larne.

Appointed Master in 1975 in *Bardic Ferry* until 1986 he commanded the following ships of the company: *Ionic Ferry*, *Viking Viscount*, *Viking Voyager*, *Europic Ferry* and *Nordic Ferry* trading to Zeebrugge, Europoort and Larne.

In 1983 he commanded *Nordic Ferry*, a vessel taken up from trade as part of Operation Corporate, the campaign to regain the Falkland Islands.

Brigadier Sir Miles Hunt-Davis GCVO CBE,
Younger Brother No 228, on 23 May 2018. He
was admitted in 2004.

He was Private Secretary to HRH The Immediate Past Master from 1993 to 2010 following a distinguished army career commenced in 1962. He served in Borneo and Malaysia from 1964-1966 during the period known as Confrontation and was promoted major in 1971 and lieutenant-colonel in 1976 whereupon he commanded 7th Duke of Edinburgh's Own Gurkha Rifles. After Staff appointments he became Commander British Gurkhas, Nepal, and from 1987 to 1990 commanded the Brigade in Hong Kong.

Retirement from the army came in 1991 and he then joined HRH The Master's Household as Assistant Private Secretary, being promoted Private Secretary two years later. He will be renowned for his close co-operation with the Trinity House on all matters regarding the Master's activities as head of the Corporation.

He was appointed MBE in 1977, CBE in 1990, CVO in 1998, KCVO in 2003 and on retirement in 2010, GCVO.

The Rt Hon Lord Carrington **KG GCMG CH MC PC DL**

On 9 July 2018 aged 99, Elder Brother. He was elected in 1984.

Peter Alexander Rupert Carrington succeeded his father, the fifth baron, in 1938, and entered Sandhurst the same year and in war served in Britain and in North West Europe. In the Grenadier Guards, part of the Guards Armoured Division, he won an MC at Nijmegen in The Netherlands and ended the war as a major.

He entered politics, in the Lords, as Parliamentary Secretary to the Minister of Agriculture and Fisheries in 1951 and served to 1954. For two years he was Parliamentary Secretary at what is now the Ministry of Defence and went to Australia as High Commissioner from 1956 to 1959 whereupon he was appointed First Lord of the Admiralty. He was Minister without Portfolio and Leader of the House of Lords to 1964 then led the Conservative opposition in the Lords from 1964 to 1970 and from 1974 to 1979. In government he was Secretary of State for Defence (1970 to 1974) and for Energy (1974). From 1979 to 1982 he was Foreign Secretary. He had been appointed Deputy Lieutenant for Buckinghamshire in 1951

In the City he was Chairman of GEC in 1983 for a year and from 1984 to 1988 was Secretary General of NATO, a post later



held by the Rt Hon Lord Robertson of Port Ellen, Elder Brother.

Carrington chaired the European Community Conference on Yugoslavia in the early 1990s and away from politics was an Honorary Member of the Royal Academy of Arts, Chairman of Trustees of the Victoria & Albert Museum, Chancellor of the University of Reading and held board appointments with The Pilgrims, Voluntary Service Overseas in addition to being an Honorary Bencher of the Middle Temple.

In academe he held a number of honorary appointments and doctorates

in Britain, the Philippines and the USA. In 2003 he was granted a Doctorate of Civil Law by the University of Oxford.

He was appointed KCMG in 1958 and GCMG in 1988; he was the Chancellor of the Order from 1984 to 1994.

Looking back to his political life he will be remembered as the last surviving member of a Churchill administration and as a post-war politician served 30 years in various offices. His greatest political triumph was probably the Constitutional Settlement of 1980 (the Lancaster House agreement) which brought an end to the Rhodesian Unilateral Declaration of Independence (UDI) and ultimately delivered an independent Zimbabwe.

When Argentina invaded the Falkland Islands in 1982 it was found that intelligence at the Foreign Office was found wanting such that British foreign policy had been humiliated so he resigned as his honour told him. He felt that 'disgrace had to be purged, I only lost my job and others lost their lives.'

At Trinity House where he was a Member of the Court he unfailingly kept in touch with the Corporation and its many activities. He was a valuable member of the Fraternity. His welcome comments on Trinity House affairs, based on years of political and public life, proved invaluable to successive Deputy Masters.



Sir Adrian Swire
Kt AE DL

On 24 August 2018, aged 86, Elder Brother. He was elected in 1990.

Adrian Christopher Swire was Honorary President of the family shipping and trading company, John Swire and Sons Limited, and its Chairman from 1987 to 1997 and then from 2002 to 2004. Earlier he had been Deputy Chairman being promoted from a Director which office he held in 1961. From 1965 to 2005 he was a Director of Cathay Pacific Airways and from 1978 to 2008 of Swire Pacific Limited.

His stewardship encompassed a period of immense change in the group's businesses, as well as return of Hong Kong to China in 1997. At a time when there was uncertainty about future trading in Hong Kong after that date, Sir Adrian was firmly convinced that Hong Kong would continue to flourish as a trading hub and gateway to the Mainland under Chinese rule.

For over 200 years, Swire has grown into a highly diversified business group with many of its core activities in the Asia Pacific region, where traditionally Swire's operations have centred on Hong Kong and Mainland China.

Today, China Navigation Co, part of the Swire Group is a major global player in the shipping scene, with operations spanning Australia, China, PNG, Fiji, India, New Zealand and the US. With HQ in Singapore, China Navigation Co owns and manages more than 130 vessels through three divisions: Swire Shipping, Swire Bulk and Swire Bulk Logistics. Sir Adrian was Chairman of China Navigation from 1966 to 1968.

During National Service he served in the Coldstream Guards from 1950 to 1952. After service in the RAF Volunteer Reserve and the Royal Auxiliary Air Force he was an Honorary Air Commodore from 1987 to 2000.

With regard to the preservation of SS *Great Britain* he served on the ship's steering committee from 1970 to 1972. Elsewhere in business he had been a Director of Brooke Bond Group, of NAAFI, of HSBC Holdings plc, and was a member of the General Committee of Lloyd's Register from 1967 to 1999. As a shipowner he was President of the General Council of British Shipping from 1980 to 1981 (he was Knighted in 1982) and was Chairman of the International Chamber of Shipping from 1982 to 1987.

He was a Fellow of Nuffield College, Oxford, from 1981 to 1989 and a Pro-Chancellor of Southampton University from 1995 to 2004. With further regard to academe he held an Honorary Doctorate of Science from Cranfield, a Doctorate from Southampton University and was holder of the Air League Founder's Medal in 2006. In addition he was Chairman of the RAF Benevolent Fund from 1996 to 2000, and Trustee of the RAF Museum from 1983 to 1991.

In the City of London he was a Liveryman of the Worshipful Company of Fishmongers in 1962 and of the Honourable Company of Air Pilots.

Sir Adrian was forever interested in the activities of the Corporation in its many forms and, as a leading member of the international business community in London, Hong Kong and China, his wise counsel at the Court was always much appreciated.

Captain Derek Richards
RD* RNR

On 27 October 2018, aged 75, Elder Brother. He was elected in 2000.

Captain Derek Paul Richards was born in Inverness in 1943 and went to sea as a deck apprentice with Shell Tankers (UK) Limited in 1961. He rose to First Officer in the Royal Fleet Auxiliary Service before becoming Chief Officer of a VLCC. In 1985 he moved to the Bahamas initially as general manager of a tug company and then as a VLCC berthing pilot. Three years later he returned home to become Marine Superintendent with a Greek-Cypriot tanker company and was sometime Master of an oil-bulk-ore (OBO) vessel before joining The Marine Society as Master of TS *Earl of Romney*. He became a Trinity House Deep Sea Pilot in 1991 and worked for Dirkzwager's Coastal and Deep Sea Pilotage of The Netherlands.

He began his RNR career as a midshipman in 1964 and was promoted to Commander RNR in 1984 and became the first List 1 RNR officer to command a Reserve Training Centre, HMS Wildfire in Chatham. After the appointment as Deputy Director of the Amphibious Warfare Branch of the RNR he was in 1996 promoted to Captain RNR and became Director of the Branch retiring in 1999.

As an Elder Brother he was a Warden's Assistant and served on both the Grants and the Examiners' Committees. As a member of the latter and as a working deep sea pilot he was instrumental in persuading Trinity House to place the two Outer Nab cardinal buoys as aids to navigation for the deep-draught approach to Southampton.

He retired as an active Elder Brother in 2009 and continued to serve as a Trinity House nominee on the Board of Governors of The Hospital of Sir John Hawkins, Knight, in Chatham, and as a Nautical Assessor to the Admiralty Court, in London. On retirement he continued to attend the Examiners' Committee and remained a working Deep Sea Pilot for some years. With his wife, Helen, he was a strong supporter of the Trinity Homes at Walmer.

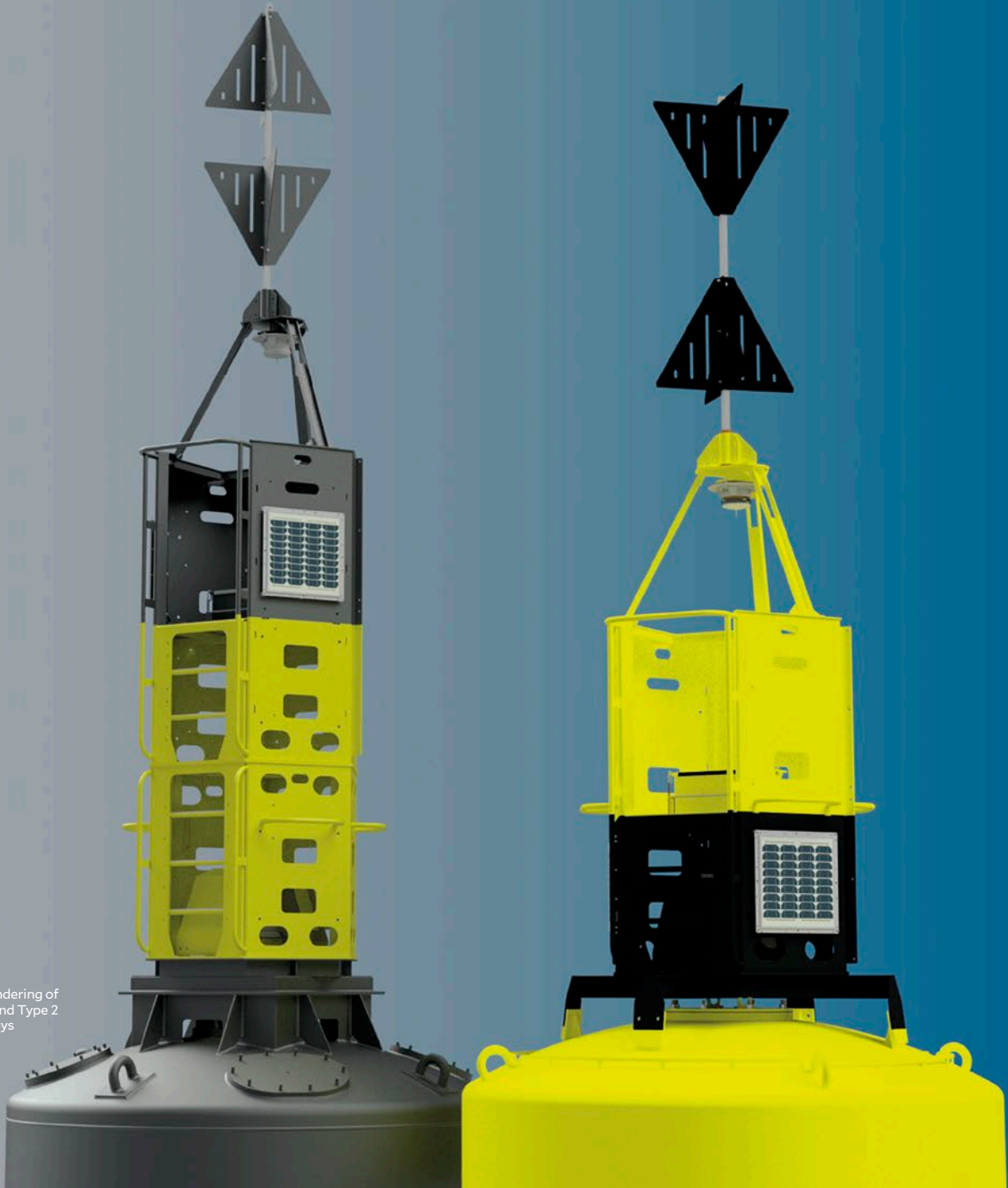




ENGINEERING REVIEW
LIGHTWEIGHT ALUMINIUM SUPERSTRUCTURE BUOYS

Combining power with versatility

Support Engineer **Steve Jacobs** describes the engineering work behind the development of a lightweight aluminium buoy superstructure



CAD rendering of
Type 1 and Type 2
LAS buoys

The current Trinity House Type 2 cage-type Pillar and Lateral buoy superstructures have been in service for more than 80 years. These have successfully presented the required profiles and colours as required by navigation, and been adapted from their original acetylene lamps to carry electric lamps, then the LED lanterns and solar units currently in service. They were also good platforms for the large number of bells deployed at their inception.

Their wood and steel construction, however, is maintenance intensive and the superstructures are difficult and dangerous to climb and work on. Each of the four types of superstructure share no common major components and there is no realistic prospect of extending their use with radio-navigation aids.

The Lightweight Aluminium Superstructure (LAS) was originally conceived to replace the standard 5NM Type 2 Cardinal and Lateral lighted superstructures to address the health and safety issues and the high maintenance overhead. However, it soon became clear that there was potential to expand its range of operation.

Over a period of eight years, using a combination of Finite Element Analysis design tools, prototype deployments, an extensive programme of at sea inspections, and user feedback from Examiners, Operations, Marine and GRAD, the LAS design has been refined and developed into a multi-role platform.

The LAS can now be configured into both Type 2 and Type 1 superstructures with the addition of a base extension module that will present all 5NM light range navigation configurations. Thanks to its greatly enhanced electrical solar panel and battery systems, it can now support the widening variety of radio-navigation aids, such as a Racon, Position Monitoring, AIS-associated telemetry functions and offer opportunities to further expand its electronic aid to navigation capability.

This extra power now enables opportunities to offer a power platform for third parties to deploy various sensor packages. The Met Office currently has equipment on two Type 2 LAS stations.

Its original design brief has also been fulfilled, as the working platform and access ladder built into the superstructure



Type 2 LAS inspection visit

“THIS EXTRA POWER ENABLES OPPORTUNITIES TO OFFER A POWER PLATFORM FOR THIRD PARTIES TO DEPLOY VARIOUS SENSOR PACKAGES”



Type 2 LAS Met Office buoy



Type 2 LAS Argus

provide a safer environment for Trinity House personnel and the all-metal construction—in conjunction with the appropriate paint systems—will give ten years at sea life of the

mechanical components. Its use of common components for all navigation configurations has the added benefit of greatly reducing stock holding and the spares that need to be carried by the ships.



ENGINEERING REVIEW
START POINT LIGHTHOUSE

Queen of the south

Senior Project Engineer **Paul Briggs** writes about a project to modernise Start Point Lighthouse



Start Point Lighthouse

Start Point Lighthouse is a 28m white tower, located at the most southerly tip of Devon – almost! The headland at Prawle Point to the west of the lighthouse is actually the most southerly point. It provides a white navigational light of character Fl(3) 10s that can be seen from Prawle Point to the west and across Start

Bay to the east, there is also a red sector light that marks the Skerries Bank, a shallow area to the east of the lighthouse. A hazard warning signal is provided for foggy conditions that blasts once every 30 seconds when visibility drops below 2NM.

The lighthouse was originally erected in 1836 and automated in 1993, some 25 years ago. It was, therefore, more than due for modernisation, with the project planned for completion by March 2019.

The on-site works started early in 2018 with the installation of a new 600m

supply cable that powers a borehole water pump, providing fresh water for the lighthouse and holiday cottages. A long section of the lighthouse access road had to be excavated; this meant the closure of the public right of way to the lighthouse. However, with careful planning, we were able to keep the much-loved South West Coast Path open throughout the work.

A new cable duct was installed into the access roadway and the road given a fresh tarmac surface. At this time, a new



Hazard warning signal



South West Coast Path was kept open throughout the works



Old Optic in its new position in the Flag Room



New LED Lanterns during installation

power cable was also installed into Beacon Cottage and changes made to the electrical system for the lighthouse and the cottages. This phase of the project was completed by April 2018.

In September 2018, work started on the lighthouse itself. A contractor was employed to strip out all of the aid to navigation control equipment and domestic electrical equipment from the tower and install a new 230V AC system including: new low power LED lighting, power sockets, heaters etc.

In December 2018, the rotating optic that had served the lighthouse for many years was decommissioned and removed from its current location in the Lantern Room and set up as a visitor display in the 'Flag Room' two floors down the tower.

A new lantern platform and pedestal was then erected in the Lantern Room, where two new flashing Sabik SL300 LED Beacons were installed to provide the required aid to navigation. A new Sabik Hazard Warning Signal was installed at the top of the tower, replacing the old corroded

unit that had been in place for many years, this new unit is the first of its type to be installed on a mainland station. The only aid to navigation that remains on station is the 9NM red sector light that was only installed approximately five years ago, this 'light pipe' supplied by MSM remains but is now controlled by a Trinity House service standard Lantern Control System.

The lighthouse will be fully commissioned and tested by the end of March 2019 and handed over to the service later in the year.



IALA news and activity

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

Engineering and Sustainability Committee (ENG)

Trinity House's Head of Engineering and Operations Simon Millyard is the Chairman of the Engineering & Sustainability Committee (ENG). ENG8 took place at the IALA headquarters in St. Germain-en-Laye in the week commencing 15 October 2018, which was the first committee meeting after the 19th IALA Conference in Incheon, Republic of Korea in May 2018. Eighty two representatives from 28 countries considered 90 input papers and produced 29 output papers (including 17 working papers).

ENG is divided into three working groups: WG1 on Light & Vision Physics, WG2 on Knowledge & Sustainability and WG3 Radionavigation Services. The addition of Working Group 3 into ENG follows a change made to the committee structure and the work in this area is a welcome addition to the committee. The new work plan agreed by the Council

in Korea has now started and will be continued for the next six committee meetings, leading up to the next General Assembly in Brazil in 2022.

Dr Alwyn Williams, GRAD's Principal Development Engineer for Visual Signalling, reported that the main task of Working Group 1 was to review and plan the tasks for the new work period up until the next IALA Conference in 2022. A number of Recommendations and Guidelines are due for review.

A number of TH engineers are involved in Working Group 2, and noted that a number of the IALA World Wide Academy (WWA) model courses were updated and a Guideline on the use of plastic buoys was discussed and sent for approval by the IALA Council. Work is being planned to enhance the sustainability element of the committee and will be adopting the United Nations Sustainable Development Goals where relevant into the work of IALA. WG 2 is also working on AtoN power systems and guidance on floating AtoN.

Dr Alan Grant, GRAD's Principal Radionavigation Engineer, chaired Working Group 3 on Radionavigation Services, which recently moved from ENAV to ENG. He reported that the group's first meeting under ENG was a well-attended success, covering DGNSS strategy, R-Mode and Resilient PNT (position, navigation and timing).

Aids to Navigation Requirements and Management Committee (ARM)

GRAD's Martin Bransby and members of the Northern Lighthouse Board (Phil Day as ARM Chair), Irish Lights (Harry Duggan) and Trinity House (Roger Barker) attended the ARM8 meeting, during the week commencing 22 October 2018.

The session was attended by 64 participants from 28 countries, of which 44 were National Members, three were Industrial Members, 13 were Associate Members, and three were observers.



ENAV meeting at IALA HQ in August 2018

Seventeen participants attended for the first time.

The Committee commenced the work for the 2018-22 work period, including work on the new role of the ARM Committee regarding operational aspects of Maritime Services which fits well with the overall strategy of IALA and the evolution of the maritime sector. In this respect, erstwhile members of the e-NAV Committee were welcomed to ARM and all participants were fully integrated by the end of the session.

Working in three working groups, the Committee considered 98 input papers including presentations and produced 15 output documents including one revised Academy model course, ten liaison notes, one workshop proposal and 17 working papers. All Recommendations and Guidelines considered were aligned with the proposed seven Standards.

Participation from the GLA was high, as usual, with Phil Day chairing the meeting and Roger Barker and Martin Bransby

chairing WG3 and vice-chairing WG2 respectively.

E-navigation (ENAV)

Dr Paul Williams, GRAD's Principal Research & Development Engineer, attended and contributed to the ENAV 22 committee meeting at IALA HQ in the week commencing 8 October 2018.

Dr Williams joined WG1—Digital Information System, as its main theme is the delivery of templates for the specification and design of Technical Services, based on IALA Guideline G1128—Specification of e-Navigation technical Services, and on the requirements of Maritime Services, which are themselves derived from top-level stakeholder requirements and output from operators of the Maritime Services; for example those members of VTS, ARM and ENG committees. The need for agile information exchange between the various committees was discussed at various points during plenary and WG1.

Legal Advisory Panel (LAP)

The Legal Advisory Panel (LAP) continues to provide legal support to the Association's decision to move from a Non-Governmental Organisation (NGO) operating under French Law to an Inter-Governmental Organisation (IGO) governed by International Law. The change will put IALA on the same legal footing as the International Maritime Organisation, the International Hydrographic Organisation and the International Telecommunications Union, three other bodies with which IALA works closely on maritime matters and will allow for a broader participation in its work, best supporting its aim and objectives into the future.

An extraordinary meeting of the LAP, attended by Thomas Arculus, Trinity House Head of Secretariat, took place in Paris in November 2018 to review and consider comments received from countries from all parts of the world on the text of the draft Convention, following a pre-diplomatic conference in Morocco earlier in the year. The Convention will be the international treaty instrument which, once it comes into force, will bring about the change in IALA's status to that of an IGO. The LAP finalised revised drafts of both documents which will be considered at a pre-diplomatic conference being held in Istanbul in March 2019.

“ERSTWHILE MEMBERS OF THE ENAV COMMITTEE WERE WELCOMED TO ARM AND ALL PARTICIPANTS WERE FULLY INTEGRATED BY THE END OF THE SESSION”

The VHF Data Exchange System

GRAD Research & Innovation Engineer, **Dr Jan Šafář** takes a closer look at the New Digital Communication System for e-Navigation Applications

The readers of this magazine will probably be familiar with the IMO definition of e-navigation, but perhaps it is worth emphasising that the *'harmonized collection, integration, exchange, presentation and analysis of marine information on board and ashore'* is a fundamental part of the concept. At present, maritime communication is largely carried out through analogue voice radio transmissions. Existing, standardised, maritime digital communication systems are restricted in functionality and achievable data rates. Some proprietary systems exist that can provide advanced communication capabilities at sea but these typically require a service subscription, are not interoperable with each other, and do not have global coverage – there is no globally harmonised digital communication system that meets the needs of e-navigation. One potential solution, currently being developed by IALA, in close cooperation with the International Telecommunication Union (ITU), is the *VHF Data Exchange System*, or VDES for short.

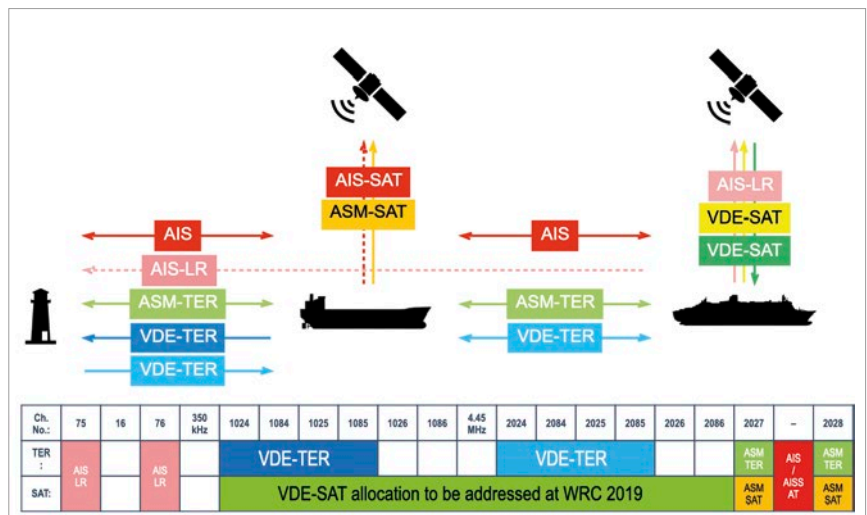
This article provides an overview of the main drivers for VDES, its key components and functions, the current development and standardisation status and some of the projects undertaken in this area by the GLA Research & Development Directorate (GRAD).

VDES is a development of the *Automatic Identification System* (AIS). The AIS enables vessels to automatically transmit their identity, position and other static

and dynamic vessel data via two globally harmonised VHF channels. It has become well recognised and accepted as an important tool for safety of navigation and maritime domain awareness, and is a carriage requirement for vessels bound by IMO's Safety of Life at Sea (SOLAS) Convention.

Following the introduction of AIS, numerous additional applications emerged, such as AIS Aids-to-Navigation, AIS Search and Rescue Transmitters, AIS Man Overboard units and AIS Emergency Position-Indicating Radio Beacon units. New messages were added in recent editions of the AIS specification and new AIS applications can also be created

Figure 1: VDES subsystems - data exchange between vessels, coast stations and satellites and frequency use (channel numbering scheme as per Radio Regulations Appendix 18)



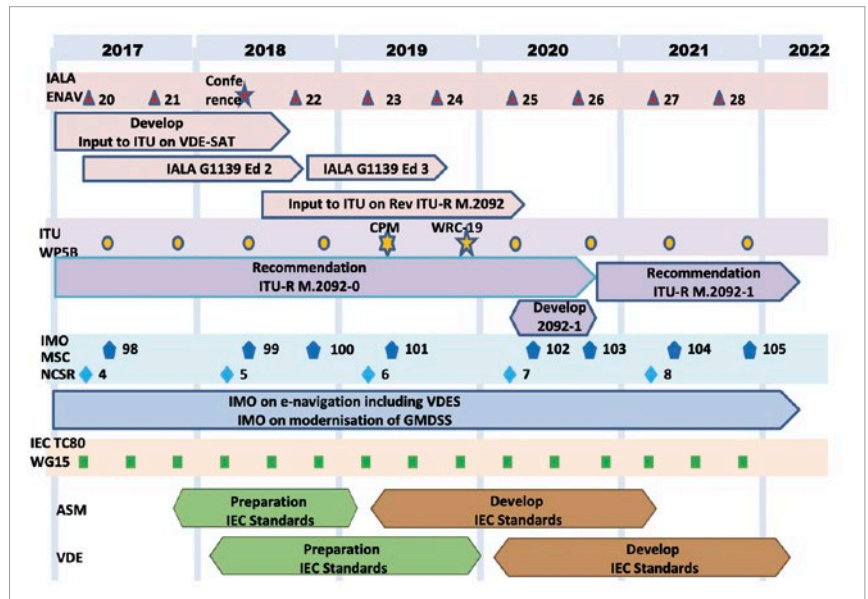


Figure 2: IALA-anticipated development and standardisation timeline for VDES

using AIS *Application-Specific Messages* (ASM). The growing use of AIS for such applications raised concerns among the competent authorities about a potential overload of the system – AIS became a victim of its own success, as is sometimes said. In response to those concerns, the World Radiocommunication Conference in 2012 (WRC-12) designated two channels in the VHF maritime mobile band for testing of future AIS applications and an additional six VHF channels for digitally modulated emissions. Shortly after, at the 2012 Workshop on the International Standardisation of the Next Generation AIS organised by the Japan Coast Guard, the name for the new system was coined and the concept of VDES was born.

In the period between WRC-12 and the following WRC in 2015, IALA worked closely with the ITU to develop a full technical specification for VDES and secure the necessary spectrum allocations. The user requirements for VDES were collated in a document identifying over two dozen potential applications, in areas such as promulgation of maritime safety information; ship reporting; vessel traffic services; route exchange; chart and publication updates; search and rescue communications; and logistics. This information later became the basis for IALA Guideline No. 1117, 'VDES Overview'. Specific examples of VDES applications relevant to the GLA may include the provision of Virtual AtoN; remote AtoN monitoring and control; new AtoN messages (including, for example, image and various other sensor data); reporting

of AtoN casualty/anomaly; delivery of GNSS augmentation data; collection and distribution of hydrographic and environmental data; and the possibility of authenticating all of the above information using digital signatures.

Also during the above period, Recommendation ITU-R 2092-0 on the technical characteristics for VDES was developed and approved, based to a large extent on input provided by IALA. The Recommendation describes VDES as a collection of several carefully coordinated subsystems, each dedicated to different communication functions. This is illustrated in the diagram **Figure 1**, which also shows the default allocation of the different subsystems to frequency channels within the VHF maritime mobile band, and described in more detail below.

Two simplex¹ 25kHz bandwidth channels in the upper part of the VHF band are reserved for AIS, coloured red in the diagram. The AIS is considered an integral part of VDES. It has the highest priority within the system and all other subsystems are organised such that AIS is not adversely affected.

An additional two simplex 25kHz bandwidth channels are dedicated for existing and new IALA and IMO-defined ASMs, coloured green in the diagram for terrestrial ASM. *VDES ASM* gives a high reliability of message delivery and message acknowledgement support. A catalogue of ASM formats defined to date can be found on the IALA website.

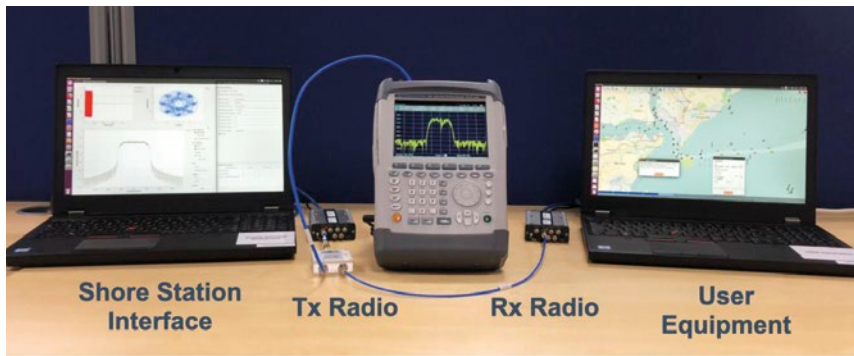
The *terrestrial VHF Data Exchange* subsystem (VDE-TER) comprises a duplex²

100kHz bandwidth channel which is available for data exchange which requires higher data rates than the ASM, coloured blue in the diagram. Vessels will be able to use the full capacity of the duplex channel when communicating with appropriately equipped coastal stations; when outside the range of coastal stations, they will be able to use the upper part of the duplex channel pair for simplex communication with other vessels within terrestrial VHF range.

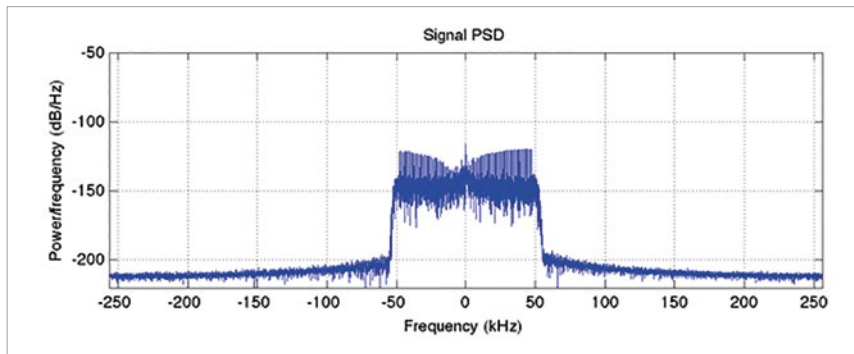
Due to the propagation characteristics of VHF signals, VDES coastal stations can only provide coverage to around 60km from the shore (depending on antenna heights, and to some extent, transmit power and other factors). The VDES concept also includes a satellite component that extends the communication range beyond the coverage of coastal stations. With polar orbiting satellites, the entire globe can be covered including the Arctic and Antarctic regions that cannot be served by traditional geostationary communication satellites. The satellite component comprises four subsystems, as detailed below.

Satellite AIS (AIS-SAT) refers to the reception of standard AIS vessel position reports and other AIS data from space. The data collected by the satellites is sent to a data processing centre via a network of ground stations and subsequently distributed in a variety of formats to competent authorities and users worldwide. AIS-SAT has found many applications, including vessel tracking in remote areas, enhancing search and





Power Spectral Density (PSD) of the received sounding signal showing the effects of frequency-selective multipath fading (signal captured during the 2014 VDES channel sounding campaign)



The GRAD VDES Demonstrator



rescue operations, arrival management and vessel traffic analysis in support of AtoN positioning.

Long Range AIS (AIS-LR) provides enhanced detection of vessel position reports from space. The probability of message detection is increased in AIS-LR when compared to standard AIS-SAT through the use of two dedicated 25kHz simplex channels in the lower part of the VHF maritime mobile band, reduced reporting rates and shorter message payloads. AIS-LR can also be used to enhance the reception of distant targets by appropriately equipped terrestrial coastal stations.

Satellite ASM (ASM-SAT) facilitates the detection of VDES ASMs from space; ASM-SAT uses the same two simplex channels used for ASM-TER but the radio waveform and message structure are optimised for satellite reception.

Satellite VHF Data Exchange (VDE-SAT) is intended to enable bi-directional communication with vessels operating in remote areas not covered by coastal VDES stations. The frequency plan and other regulatory arrangements for VDE-SAT are currently under consideration by ITU.

In order for VDES to become a reality, a globally harmonised frequency plan needs to be agreed and a corresponding

set of standards developed. The IALA-anticipated standardisation timeline for VDES is shown in **Figure 2**. Frequency allocations for AIS/AIS-SAT were made prior to 2012 and the channels for AIS-LR were allocated at WRC-12. Based on the work carried out in the 2012-2015 period, WRC-15 allocated frequencies for the terrestrial component of VDES (i.e. ASM-TER and VDE-TER) and the satellite ASM uplink (ASM-SAT). Unfortunately, no consensus could be reached on allocations for VDE-SAT. However, ITU created a new agenda item for WRC-19 allowing further consideration of the satellite aspects. Recent work at IALA and ITU has therefore focused on the approval of the satellite component. Report ITU-R M.2435-0 has been prepared in close collaboration with IALA, providing the detailed technical characteristics of the proposed VDES satellite component. IALA has also continued to develop the specification for the terrestrial component. The latest IALA-proposed updates to the specification can be found in Guideline No. 1139, 'Technical Specification for VDES'.

The content of this guideline, together (potentially) with the Report ITU-R M.2435-0, will be used for an input to ITU for the revision of Recommendation ITU-R M.2092-0 following WRC-19. The

guideline also provides guidance for the International Electrotechnical Commission (IEC) development of test standards for VDES.

GRAD supports the development and standardization of VDES by undertaking research projects and participating in the work of the IALA e-Navigation Committee, as well as other international and national bodies.

The following paragraphs provide highlights from some of the recent projects; further detail on individual projects may be provided in future articles.

VDES is being designed and developed from the ground up for maritime use. A key objective when designing a communication system is to maximise the amount of information that can reliably be transferred over a given radio channel per unit time. This can only be achieved if the propagation characteristics of the radio channel are known. In 2014, GRAD carried out the world's first VDES channel sounding campaign to examine radio propagation conditions for all channels intended for use in ship-to-shore and shore-to-ship VDES communications. A comprehensive series of sea trials were conducted over five days, off the East Coast of England. Five operational scenarios were examined, spanning four of

the six IMO Maritime Service Portfolio area categories. Key findings from the sounding campaign were published in a technical report which subsequently became the basis for Report ITU-R M.2317.

Based on the results of the channel sounding campaign a frequency-selective multipath fading channel model was parametrised, which can serve as a basis for computer simulations and performance assessment of candidate VDES waveform designs and signal processing algorithms. The integration of a realistic channel model in simulations made it possible to assess the system's performance in different operational scenarios and under a range of propagation, weather and sea state conditions, without the need for repeated and costly sea trials to take place during the initial system design phase.

Building on the knowledge gained from the channel sounding exercise and system simulation, GRAD designed and developed an end-to-end VDES demonstrator, comprising shore and ship-based user terminals communicating with each other using software-defined radios. The platform was used to give VDES demonstrations at a number of events in the UK and abroad, including the world's first demonstration of authenticated VDES ASM messaging.

GRAD has also recently taken part in two projects focused on the development of the satellite VDES component. The European Space Agency-funded AMNAS (Arctic Maritime Navigation Augmentation Service) project examined the technical feasibility of using VDE-SAT for delivering GNSS augmentation data to maritime vessels operating in remote areas, such as the Arctic. The AMNAS project consortium consisted of Kongsberg Seatex AS, Space Norway AS and the GLA (represented by GRAD). Results were shared with the international bodies that are developing VDES and prompted a review of the draft VDE-SAT specification to ensure that the VDE-SAT data link meets the stringent latency requirements for this application. The service proposed in AMNAS will be demonstrated using the NorSat-2 satellite (currently in orbit) in a follow-on ESA project.

VESTA (VDES Transmitting Satellite System) is an ongoing project aiming to demonstrate VDES technology as two-way communication between maritime vessels, shore stations and satellites. The project intends to demonstrate two types of services: a broadcast service aimed at providing institutional-type services, such as delivery of Virtual AtoN or Area Notices, thereby allowing institutions with

a safety mandate to enhance their service provision; and a two-way point-to-point service aimed at supporting commercial fleet monitoring services as well as provision of specific data to ships to assist with safety, security and protection of the environment. VESTA is funded by the UK Space Agency and led by Honeywell (Aylesbury, UK) as the prime contractor. Project partners include exactEarth Europe Ltd, Pole Star and the Satellite Applications Catapult. A demonstration satellite was developed for the VESTA mission by Honeywell with the spacecraft bus provided by Surrey Satellite Technology Ltd (SSTL). VESTA was successfully launched into a Sun-synchronous orbit in December 2018, by a SpaceX Falcon 9, and is currently in the launch and early orbit phase. The GLA are partners with exactEarth Ltd and are supplying the VESTA mission with a vessel, support with the demonstration equipment and user interface development, field instrumentation (such as noise and interference surveys) and trial logistics support. VESTA sea trials and demonstrations are expected to take place on-board THV *Patricia* in Q1 2019.

VDES is also being considered as a potential component of the R-mode concept, where the same signals used for communication are used for ranging, thus mitigating the impact of disruptions to satellite positioning services. GRAD has performed initial theoretical studies into AIS and VDES R-mode and is currently developing an experimental VHF ranging system which will be used to collect data that will inform the further development of the concept.

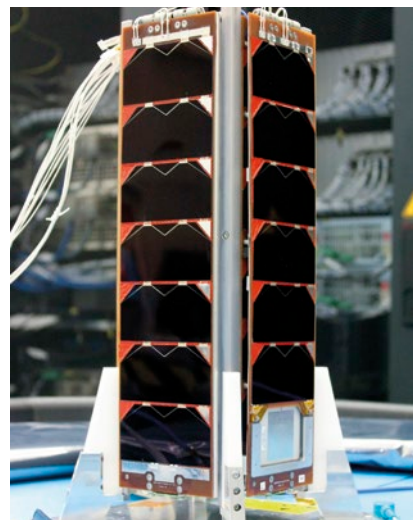
Despite the significant progress made in recent years, there are still many open questions with regards to VDES that need to be addressed before the system can be

deployed operationally – questions such as: How will VDES interface with shore-based networks and information systems? How will it interface with systems on-board? How will the information carried by VDES be processed and displayed? Is ECDIS the answer or will a new ship-borne e-navigation platform and user interface need to be developed? How will the information be authenticated? These and other questions may be explored in a future article.

References

1. A simplex communication channel operates only in one direction at a time.
2. A duplex communication channel uses two simplex channels operating in opposite directions (potentially at the same time).

The VESTA satellite. Photo courtesy of Surrey Satellite Technology Ltd/Emily Kelly



A SpaceX Falcon 9 rocket launching from the Vandenberg Air Force Base, California, with the VESTA and 63 other small satellites on-board. Photo courtesy of SpaceX

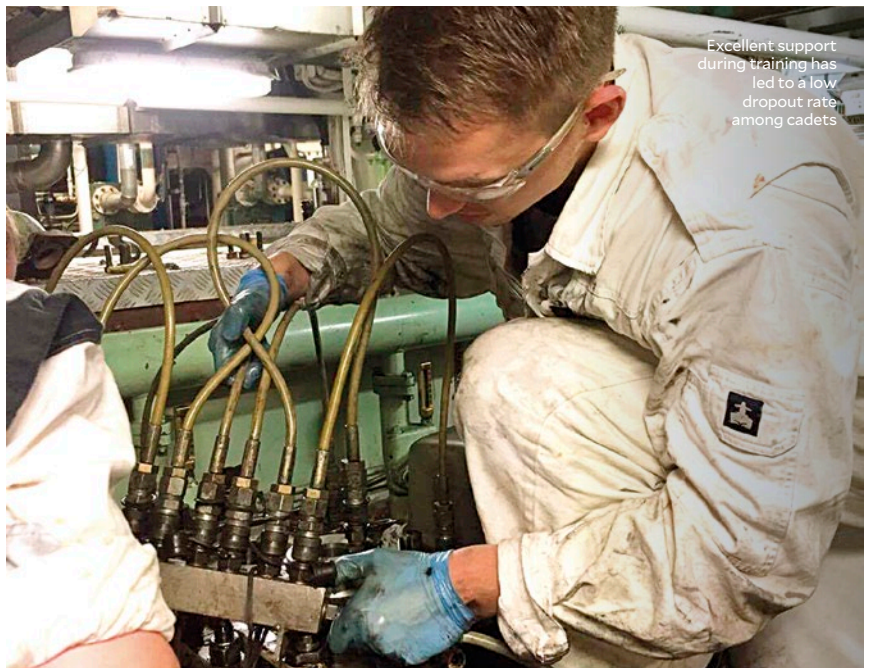


Inspiring a new generation

Elder Brother and Director of Maritime Training **Captain Nigel Hope RD*RNR** writes about the successes and importance of the Maritime Charity’s work in sponsoring cadet training

Last year the UK government increased SMarT (Support for Maritime Training) funding to increase the number of cadets from 750 to 1,200 over the next three-year period. While this presents a challenge in recruiting and placing the additional numbers, it shows how keen the government is for shipping companies and charities to develop the necessary skill set to support the future maritime industry. Statistics show that every £1 spent by the government on supporting maritime careers gives a £9 return. It is, therefore, essential that London and the UK maintains its international status as a major maritime centre. To fulfil this objective requires competent mariners, trained and qualified in accordance with the maritime regulations.

Last year showed a positive result for the recruitment of Trinity House cadets. This was achieved through our long-standing contract with Chiltern Maritime, which manages the recruitment process and the cadets. This professional contractual partnership has worked very well, with cadets receiving excellent support during their training, and is clearly demonstrated by the low dropout rate, which is well below the industry average figure. This year will see the 30th anniversary of this partnership, which will be celebrated to recognise the significant numbers who have completed a Trinity House cadetship and gone on to work within the maritime industry both afloat and ashore.



Excellent support during training has led to a low dropout rate among cadets

One of the goals for recruitment is to increase the number of engineers, there being a shortage, at present, of qualified marine engineers in both the Merchant and Royal Navy. A second task is to encourage more young women to take up a maritime career.

Trinity House visited selective technical colleges, focused on promoting female maritime opportunities at sixth form colleges, which resulted in an increase of engineers and also of young women. Out of the total intake for 2018, 16% were females, many of whom were very strong candidates with the necessary attributes to follow a successful maritime career.

The value of the Trinity House Merchant Navy Scholarship Scheme cannot be overemphasised. Its varied opportunities empower the next generation of young seafarers to pursue a maritime career.

“EVERY £1 SPENT BY THE GOVERNMENT ON SUPPORTING MARITIME CAREERS GIVES A £9 RETURN”

Elsewhere in this issue, you will read about two such outstanding Trinity House cadets—Adam Willmott and Santa Teterere—receiving top graduating awards.

Many will successfully fulfil their ambitions both afloat and ashore and, in doing so, maintain the UK’s influence as a major maritime nation. The training secured through their cadetships enables them to be fully confident and competent to serve in the fast-moving world of shipping.



Grants Manager Vikki Muir is involved in all aspects of the grant application process

STAFF PROFILE

Every step of the way

Continuing our look at various roles around Trinity House, **Vikki Muir** describes her work as the Grants Manager in the Corporate Department

What does a Grants Manager do?

I look after all the applications from organisations requesting support from us. This can be from the initial phone call asking how they apply, to asking for more information about their project or service, to keeping them updated. I also visit the charities and organisations we support to see our funding in action.

Every day is different, which makes the job really interesting. I can spend it reading applications, carrying out due diligence on organisations applying to us and putting together papers for the Corporate Board or by going to conferences on seafarers' welfare or meeting potential applicants to find out more about what they do and whether we may be able to support them.

What are your standout moments?

One of my favourite parts of the job is contacting organisations to let them know their grant request has been successful. The reactions can be quite enthusiastic and knowing we have been able to help is what makes my job so fantastic.

What are the main requirements of a Grants Manager?

It is important to me that Trinity House is seen as an approachable and friendly charity. I'm always happy to talk through potential applications and give constructive feedback to give our applicants the best

chance possible in submitting a successful application.

There isn't a typical grant as we support such a broad range of organisations and look at every application on its merits. Awards range from a small grant for a regional project, through to a significant amount for a national organisation supporting seafarers.

How do we fund our grants?

The majority of the funding for our grants programme comes from the rental incomes from Trinity Village.

How many charities do we support?

This can differ every year depending on the need. We have a core group of around 20 charities that we support on an annual basis. Alongside this we have applications that come in throughout the year, as well as the grants that our Regional Committees award.

Can you give an example of a recent donation?

Care For Veterans is an organisation that provides rehabilitation and care for those suffering from brain injuries or degenerative neurological disorders. Our grant was to support the physiotherapy delivered to their seafaring residents. We have also recently supported the Royal Institute of Navigation towards the development of their booklet on electronic navigation for small craft. So, two very different projects.



Charity update

The **Trinity House Maritime Charity** continues to ensure that young people are getting access to maritime training and that mariners and their dependants are well looked after

TRAINING SCHEME

Royal Navy Fastrack Maritime Scheme launched

The Trinity House Maritime Charity has supported a new fast-track scheme that has been launched for suitably qualified Royal Navy (RN) personnel to achieve seamless transfer into the Merchant Navy on leaving the Service.

The Royal Navy and Merchant Navy, in conjunction with Trinity House, the Maritime & Coastguard Agency (MCA),

the Merchant Navy Training Board (MNTB) and Chiltern Maritime have launched a fast-track scheme for suitably qualified Royal Navy Warfare Officers and Marine Engineers of all ranks to use their existing qualifications to reduce the induction training personnel and achieve seamless salaried transfer on resettlement into the Merchant Navy and onwards into the wider maritime sector, both afloat and ashore. It builds upon the reissue of the

Memorandum of Understanding (MoU) with the UK Maritime and Coastguard Agency in 2018 and part recognises Royal Navy Standards for Training and Certification of Watchkeepers (STCW) accredited training.

Lieutenant Thomas Stapley-Bunten is the first to benefit from the new Royal Navy Fastrack Maritime scheme. The 26-year-old, who has previously served as the Commanding Officer of HMS *Example*,



The launch of the Royal Navy's Fastrack Maritime Scheme at Britannia Royal Naval College, Dartmouth. Left to right: Lt Cdr Mike Garner (Staff Officer 2 Maritime), Lt Cdr David Carter (the Royal Navy's Merchant Navy Liaison Officer), Captain Nigel Hope (Director of Maritime Training, Trinity House), Captain Jolyon Woodard (Commanding Officer BRNC Dartmouth), Kathryn Neilson (Director, Merchant Navy Training Board), Lt Thomas Stapley-Bunten and Stuart Bengel (Senior Officer Trainee Coordinator, Chiltern Maritime)

“THE SCHEME ALLOWS ME TO CARRY FORWARD MY SKILLS TO A NEW EMPLOYER WITHIN THE UK’S MARITIME SECTOR”

is being sponsored by the Trinity House Maritime Charity. He is set to leave his role on the training staff at Britannia Royal Naval College, Dartmouth, this year, after a successful career as a Royal Navy Warfare Officer. The scheme attracts SMART funding and is administered by Chiltern Maritime Limited. It is modelled on the training and finance pathway on the Merchant Navy's graduated engineer entry scheme.

With the sponsorship and funding, Lt Stapley-Bunten will also use his Royal Navy Enhanced Learning Credits to complete his full MCA Officer of the Watch (Unlimited) qualification in just twelve months; a saving of nearly three years on the traditional Merchant Navy entry. Furthermore, as he is RN command qualified (CQ1) the MCA MoU recognises onwards fast-track potential to Master Mariner (Unlimited) that may be achievable from his RN start in only four years. This is against the comparative MN model that may take ten years.

During the college phases of his training Lt Stapley-Bunten will live at his home and attend the South Shields Marine School. The course has been shaped by the Deputy Principal, Simon Ashton, to the standard Merchant Navy college elements to suit the reduced MoU needs. Under the MoU Lt Stapley-Bunten only needs to complete a reduced three months Merchant Navy familiarisation sea time, on top of his already accrued Royal Navy sea time, to take his MCA Officer of the Watch (OOW) Certificate of Competency (Deck) (Unlimited).

Lt Stapley-Bunten said: *“The Fastrack Maritime Scheme works perfectly for me. It allows me to carry forward my existing skills and experience to a new employer within the UK’s maritime sector. After I have gained my OOW (Unlimited) qualification through the Fastrack Maritime Scheme, my intention is to continue with a varied career at sea while also studying to become a chartered Master Mariner. The Royal Navy has served me well and given me an exciting and varied career so*

far and I intend to retain my links to the RN by applying for Operation Firefly, the Royal Navy’s initiative for seamless transfer to the Reserve Service.”

While this scheme is open to Warfare Officers and Marine Engineers, the Royal Navy is also currently embarked on an ambitious full MCA parity programme for future personnel that will give both rating, junior and senior officer MCA certification over their Royal Navy careers. This is part of a wider maritime focused apprenticeships application in the Royal Navy that will be recognised by, and transferable to, the maritime industry.

Lieutenant Commander David Carter, the Royal Navy’s Merchant Navy Liaison Officer, said: *“The Royal Navy is committed to support the Department for Transport’s Maritime Growth Study and this is just one of the ways we are doing that. Multiple retention positive pathways will in due course ensure absolute full seamless resettlement transfer capability and with MCA qualifications directly into Merchant Navy roles where applicable.*

“The UK maritime sector is high value to the UK economy and currently faces a deficit in the maritime skill sets. It consequently attracts terms and conditions some 30% above the national average and for sea-going appointments invariably salaried one-on one-off rotations of variable trip lengths, in many cases tax free, according to trade. Senior MCA certification is the maritime door opener to valued positions ashore. Highly trained ex Royal Navy personnel are a desirable fit into the wider maritime sector and in an environment that fits well with the Navy ethos. This will give the MCA qualifications to match. It also adds value to those wishing to retain their Royal Navy links and camaraderie by continuing, as in Lt Stapley-Bunten’s case, in the Royal Naval Reserve with absolutely current maritime skill sets for ease of dual roles.”

For Merchant Navy companies wishing to support this scheme by including it within their existing SMART-funded training programme, and for Royal Navy personnel enquiring on resettlement with this pathway, please contact the Royal Navy’s Merchant Navy Liaison Officer on the details below.

For more information, please contact the Royal Navy’s Merchant Navy Liaison Officer Lt Cdr David Carter: david.carter516@mod.gov.uk / 01329 333 590

Nautilus Welfare Fund

In July, the Trinity House Maritime Charity awarded a grant of £70,400 to the Nautilus Welfare Fund. Since the opening of the Trinity House Hub in 2014, the Charity's funding has been used towards the cost of the service that the support staff deliver to residents, alongside subsidising the café within the Hub which is an invaluable resource for those living within Mariners' Park.

The café provides over 5,000 meals a year which enables the residents to not only enjoy a nourishing lunch, but also enables them to have the opportunity to socialise with other residents, which is highly beneficial to their emotional wellbeing.

Mick Howarth, Welfare Services Manager said: *"The support from Trinity House is making a real difference to the lives of residents at Mariners' Park."*

High Tide Foundation

In September, Trinity House awarded £7,500 to High Tide Foundation to support their Shipping Cadetship Scheme which aims to bring together the shipping and river community on Teeside with secondary schools and colleges to inspire, educate and motivate young people to consider a potential career within the maritime sector.

Each accredited six-week programme enables 12-14 young people from across the Tees Valley to increase their awareness of the sector and helps them identify potential future career paths they may not have previously considered. Former cadets have gone on to join the Royal Navy as well as sailing companies.

Lauren Bywater, General Manager of the Foundation said: *"High Tide Foundation is so grateful for Trinity House's unwavering support. This funding enables us to continue delivering our life-changing programmes across the Tees Valley, making a real difference to our young people. We can't thank Trinity House enough for this contribution."*

National Coastwatch Institution

The new National Coastwatch Station at Hengistbury Head was awarded a grant of £5,100 in June to enable them to acquire a pair of high quality, high power binoculars and an automatic weather station. The binoculars give the crews the ability to monitor all manner of coastal users and remain alert to the possibility

of incidents involving vulnerable people, kayakers, windsurfers, kite surfers and every form of craft in and around Poole and Christchurch bays.

From their position 100 feet up on top of Hengistbury Head, watchkeepers are perfectly positioned to maintain their daylight surveillance, 365 days a year. The binoculars are also vital in monitoring events and incidents on scene as they unfold, passing vital information on to HM Coastguard and allowing the co-ordination of an appropriate response. The weather station, the data from which is published on the station website, allows Watchkeepers to keep an accurate record of wind speed and direction, temperature and barometric pressure.

Publishing this information online makes it available to all leisure and commercial maritime users in the area, enabling them to accurately monitor the changes in current meteorological conditions.

Ian Whalley a Trustee of the NCI said: *"The promotion of sea safety is a prime function of National Coastwatch and the equipment donated by Trinity House is invaluable to the Watchkeepers at NCI Hengistbury Head."*

The Not Forgotten Association

The Not Forgotten Association was awarded £10,000 in July to assist with the costs involved to deliver their programme of support to their beneficiaries from the maritime community. Their support provides entertainment and recreational opportunities for those still serving who are wounded, injured or sick, as well as veteran members of the three Services and Merchant Navy of any age who suffer from a disability, illness or infirmity.

Opportunities range from taking part in an adventure holiday, to attending sporting events, being able to attend a concert that has been put on in a care home or being provided with a television and licence to help combat isolation.

Words from a member of the Royal Navy family nicely illustrate what the Not Forgotten Association does:

"I gained motivation from living with heavily injured veterans and developed confidence with my own injuries. This holiday has massively benefited my recovery"

Brigadier James Stopford CBE, Chief

Executive, said: *"We could not achieve all we do without the loyal support from Trinity House. Through our partnership, we are together directly addressing the causes of isolation and loneliness that affect too many in the Armed Forces community."*

The Royal Navy and Royal Marines Children's Fund

Trinity House awarded a grant of £47,300 to support the work of the RN and RM Children's Fund which enables them to help change children's lives for the better. They provide a range of support to children and young people in need who have a parent either serving or who has served within the Royal Navy, Royal Marines, the RFA and their Reserves. The Charity's funding will be used to help support around 1,800 children with direct grants for assistance. These can vary from emergency grants in time of crisis to those for equipment or services linked to the child's disability or illness which can greatly enhance their quality of life.

In an average week, the Fund's caseworkers will receive five calls from new beneficiaries in need of help and 100% of every grant or donation to the Fund goes directly to the children and young people that they support.

Clare Scherer, the Director of the Fund, said: *"We are extremely grateful for the grant from Trinity House towards our work. Their funding helps us to change children's lives."*



Lacey May enjoying horse riding



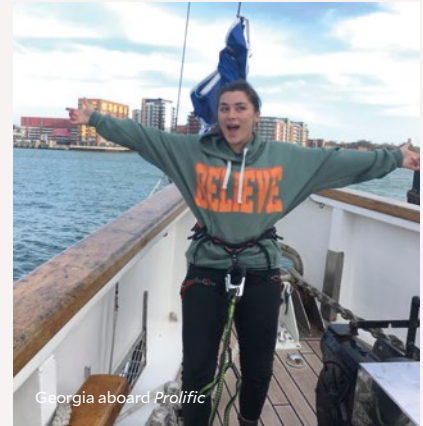
Regional Grant Committees

In Devon, a £3,000 grant to **Torbay Youth Sailing Trust** helped them purchase RS Quest dinghies to improve youth training and extend the training opportunities to young adults and families. The benefit of the RS Quest dinghy is it provides a boat that will allow the Trust to teach sailing to three children with one instructor in the boat before the children move on to the Trust's existing fleet of single-handed dinghies.

In Hampshire, a £3,000 grant helped **Ocean Youth Trust South (OYT)** support a new full-time post for a young person on board the sail training vessel *Prolific*, someone who has the potential to excel in a sail training career but who does not yet have the skills and experience required

for other jobs in the industry, and who would not be able to gain the qualifications without support. Over two years, OYT would aim to help this person acquire the skills and qualifications needed to be able to apply for work as a mate. Georgia (pictured) was initially referred for a voyage with them owing to difficulties she has faced in her life, but has since excelled as a volunteer and decided this really is something she would like to pursue as a career.

The Eastern Region Grants Committee welcomed the following letter of thanks from Commodore JWR Harris: "As Chairman of **Newmarket Sea Cadets** I am writing to thank you, on behalf of all our Cadets, for your very kind donation of the funds to allow



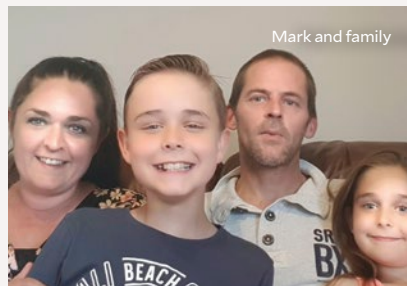
us to buy an RS Zest dinghy and equipment. Water borne activities, and especially sailing, is a key element in the training we provide and this dinghy will substantially contribute to our ability to give the Cadets a wonderful experience at our sailing centre. At this stage, we do not know when the next Zest will be available, but our intention is to have her on the water for the start of our sailing season next spring. We are enormously grateful for such a kind and useful donation which will allow us to continue to give the Cadets such an invaluable experience in their lives."

CHARITIES WE SUPPORT: THE FISHERMEN'S MISSION

A helping hand for the UK's fishing communities

The **Fishermen's Mission** fights poverty and despair in UK fishing communities by providing emergency and welfare support to fishermen and their families 24 hours a day, seven days a week, 365 days a year. More than 13,000 men and women work in the UK's toughest and most dangerous peacetime occupation: deep sea fishing. At sea, they face death and injury on a daily basis. On land, many face insecurity and debt. And life for the 50,000 retired fishermen and their dependants is no better, with debt, inadequate pensions and scant savings meaning no respite from hardship once the fishing is over.

Mark is 31 and lives in Portsmouth with his partner Laura and two children. He has been a fisherman for eight years, working for a local company on a self-employed basis. Mark does not own his own boat, and like many self-employed people, sometimes struggles with an erratic income. His first contact with the Fishermen's Mission came about when he started looking for help for a young deckhand he worked with who was experiencing mental health issues and



was on the verge of being evicted from his home. Not long afterwards, Mark and his partner Laura started to experience financial hardship. Increased regulation of local fishing grounds and restrictions on catch species left Mark struggling to generate an income. Each time he started to make progress there would be a problem with the boat or an accident at work that would send him backwards again. For 18 months Mark would regularly work long hours for next to nothing, and feeling they had nowhere to turn, they contacted the Fishermen's Mission for help.

Nick, their Superintendent for their South Coast Outreach Programme, supported Mark and his family for three months in person and via telephone calls, helping them address their rent and bill arrears by facilitating a grant which would prevent the family from having to face the devastating crisis of homelessness. He also provided emotional and pastoral support to Mark and Laura as they struggled to cope with the stress of their situation.

Today Mark is working for a new company. He is fishing all around the UK coastline, developing his fishing career through training and enjoying life again spending time with his family. He told us: "The Fishermen's Mission picked us up at the lowest point of our lives and relationship, and we are now a happy, stable family, moving on with our lives. We no longer see the charity as an organisation any more, but thanks to Nick's help and support, we now see it as a friend that helped us through one of the darkest times of our lives."

www.fishermensmission.org.uk

Looking to the future

The **Trinity House Maritime Charity** has been supporting seafarers not only through grant awards but also through pushing forward the conversation about how to inspire future mariners

CHARITABLE GRANTS



Merchant Navy Welfare Board (MNWB)

In September 2017, Trinity House awarded a grant of £40,000 to the MNWB for its Joint Welfare Vehicle Replacement project. This project continues to provide support for bonafide seafarers' welfare organisations by helping them to purchase port-based welfare vehicles for the provision of front-line welfare services. Such a requirement has increased over the past decade and is set to continue rising. During 2018 this grant helped the project to replace eleven port vehicles, including four cars, four MPVs and three minibuses; if each vehicle transports around 15 beneficiaries per day, then the project will benefit around 350,000 seafarers and their dependants per annum.

This was a joint grant with MWNB, Seafarers UK and ITF Seafarers Trust.

Sailors Childrens Society (SCS)

In April 2018, we awarded £15,000 to the SCS as joint funding for employing two Family Support Officers. Family Support Officers provide emotional and practical support to ex-Royal Navy and Royal Marines families around the Portsmouth and Plymouth regions, with a programme that empowers parents to tackle their issues and move forwards for the benefit of their children.

This was a joint grant with RNRMC and Greenwich Hospital. The Trinity House Maritime Charity also makes an annual grant of £48,000 towards the SCS's general works in support of mariners' children.



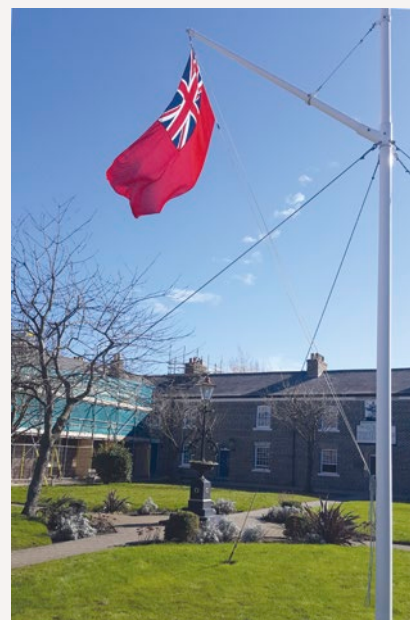
IALA World Wide Academy

In February 2018, we awarded £20,000 (across two years) to the IALA World Wide Academy, the training and capacity building of the International Association of Marine Aids to Navigation and Lighthouse Authorities. The grant will go towards the running of the Academy and the delivery of its Master Plan 2018-20, the focus of which is that "all coastal states have contributed to an efficient global network of marine aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise".

UTC Portsmouth

In April 2018, we awarded almost £10,000 to University Technical College (UTC) Portsmouth to send 60 students and four leaders on a four-day residential camp with youth sailing training charity UKSA. The camp teaches sailing, engineering and leadership through activities such as

windsurfing, keel boating, dinghy sailing, raft building, diesel engine maintenance, kayaking and more. Students range from ages 12 to 15 and develop new skills in teamwork, leadership, communication and increased confidence.

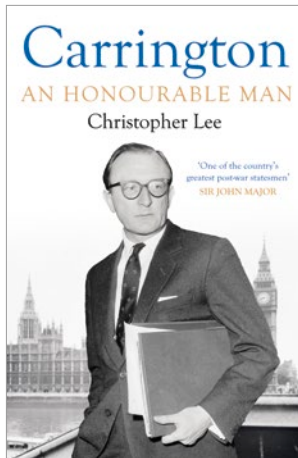


Sunderland Homes

In June 2018, we awarded £50,000 to the Sunderland Aged Merchant Seaman's Homes, which went towards the costs of repairing damp in the flats. The homes were established in 1840 to provide housing for seafarers and their dependants, and are today comprised of 32 one and two-bedroom flats. This grant is actually the third part of four, as the Trinity House trustees originally granted a sum of £50,000 per year for four years, to tackle the substantial and long-running damp repair issue faced by Sunderland Homes.

BOOK REVIEWS

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



CARRINGTON: AN HONOURABLE MAN

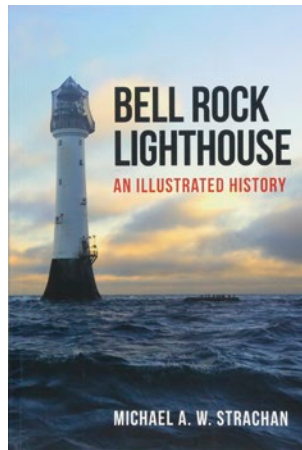
By Christopher Lee
Viking, Penguin, 559 pages, £25.00
ISBN 978 0 670 91646 7

It is not often that one comes across a book about an Elder Brother written by a Younger Brother; it is apt therefore that I quote Sir John Major, Elder Brother, who said of Carrington: 'He was one of the country's greatest post-war statesmen'.

Lord Carrington was Margaret Thatcher's Foreign Secretary when the Argentinians invaded the Falklands in 1982. He is seen by many today as the last of his breed in politics, an honourable man committed to public service.

He could be viewed as a typical Tory grandee, yet he disliked the Party, claiming late in his life that he was no longer a member, and could be fiercely independent.

Carrington was a minister in every Conservative government from Churchill's to Thatcher's. In this full biography, authorised but not read by the subject, author of *This Sceptred Isle* Christopher Lee offers a fascinating portrait of a Tory icon whose career is a window into post-war British politics and life as a politician and diplomat.



BELL ROCK LIGHTHOUSE: AN ILLUSTRATED HISTORY

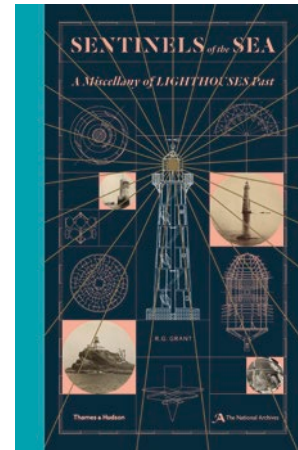
By Michael A W Strachan
Amberley Publishing, 96 pages, £14.99
ISBN 978 1 4456 7060 7

Since its completion in 1811, Bell Rock Lighthouse, as well known as Eddystone, has been regarded as an engineering achievement. The iconic tower was built on the Inchcape Rock, a submerged reef twelve miles off Arbroath, and is the oldest sea-washed tower in the world.

Construction made the name of the Stevenson family, a dynasty of lighthouse engineers who dominated Scottish lighthouse engineering for 150 years. Robert Stevenson oversaw the project with Chief Engineer, John Rennie.

This story is told over ten chapters supported by an introduction, a conclusion with a valuable, short, bibliography for further reading. This is a well-illustrated paperback with research drawn upon Scottish resources including former keepers. Electrification and modernisation came in 1963/64 and automation in 1988.

Without doubt, construction of Bell Rock Lighthouse was impressive. Its keepers did duty here for 177 years. They are now all gone but Bell Rock continues to show its familiar character for the safety of all: IN SALUTEM OMNIUM, to quote the NLB's motto.



SENTINELS OF THE SEA: A MISCELLANY OF LIGHTHOUSES PAST

By R G Grant
Thames & Hudson with The National Archives, 160 pages, £19.95
ISBN 978 0 500 51976 9

A finely produced volume demonstrating genius that allowed construction on difficult sites and provided innovations that made lights powerful and reliable. Grant's authoritative text tells of advances in optics and light sources that created effective stations. He also describes the keepers' lot.

Here are intricate architectural and engineering drawings with archive photographs to demonstrate design and capabilities behind a representative selection of historic lighthouses built around the world.

Packed with stories of human endeavour, shipwreck and constructors defying the elements, the book provides an insight to the work of the lighthouse engineers and the lives of the dedicated lighthouse keepers. This is achieved over four chapters with a prologue, an epilogue and listed sources and references.

The definitive lighthouse book has yet to be written but Grant's depth of research is impressive and it is refreshing to see that he has called upon many of the old favourites on the bookshelf: Hart-Davis, Nicholson, Naish, Hague & Christie, Stevenson, Davenport Adams and Talbot.

Setting sail for a career on the ocean

Recently graduated Merchant Navy Scholarship Scheme cadet **Adam Willmott** describes his three-year rollercoaster of education and sea-going experiences

Sailing through the Strait of Magellan on *Ardmore Defender*

Before I start, I want to say a massive thank you to Trinity House for sponsoring my education and training while undergoing my Deck Officer cadetship. Without the funding and continuous support, I wouldn't be what I am today: a fully qualified Deck Officer.

A massive thank you also to Chiltern Maritime, which has managed and organised all my training and ship appointments, as well as given me continuous feedback and advice in preparation for going to sea and my return to college.

Before enrolling into the Merchant Navy Scholarship Scheme with Trinity House, I attended the London Nautical School, based in Waterloo by the River Thames. The school was like many ordinary

secondary schools in Lambeth, although it followed old maritime traditions such as a Naval school uniform and watersports activities, as well as a number of maritime courses. One of many amazing teachers was James Bullar MBE, Head of Nautical Studies. Part of his role in the school was to teach and inform students about maritime careers.

As his student for six years, he taught me a lot about the watersports industry as well as careers at sea, and without him mentoring me and leading me in the right direction I wouldn't have known about the maritime industry—let alone Trinity House—and what opportunities there are outside of the classroom.

I started my cadetship in September 2015 at Fleetwood Nautical College, enrolling into the HNC/HND route course. At first I was a little bit anxious about

leaving home and moving across to the other side of the country, but that didn't last long. I soon settled in and made some amazing friends who I'm still close to. We started with a Level 3 BTEC in Maritime Studies, which was a really good introduction into the maritime industry and preparation for going to sea for the first time. As well as taking the Basic STCW (Standards for Training, Certification, and Watchkeeping) courses which included Basic Firefighting, Sea Survival and First Aid at Sea, we also did an introductory course for EDH (Efficient Deck Hand) and PSCRB (Proficiency in Survival Craft & Rescue Boats) where we learned basic seamanship and boat handling skills.

My first ship was *Ardmore Defender*, a chemical tanker. As it was my first ship, I was very nervous especially as I had to fly out all the way to Panama to join. To

“AS WE WERE OPERATING IN SOME OF THE BUSIEST WATERWAYS IN THE WORLD I GAINED AMAZING BRIDGE WATCH SKILLS”

make it worse, we had to join the ship late at night while it was still underway to the Pacific anchorage, which meant we had to climb on board the crew transfer boat and board via the pilot ladder. I really didn't like this at all, but then realised that I had no choice but to just face my fear of heights and just get on with it. Fortunately, I was lucky enough to be joining with one of my best mates Jack, who really helped me get over this as well as supporting me through the whole sea trip.

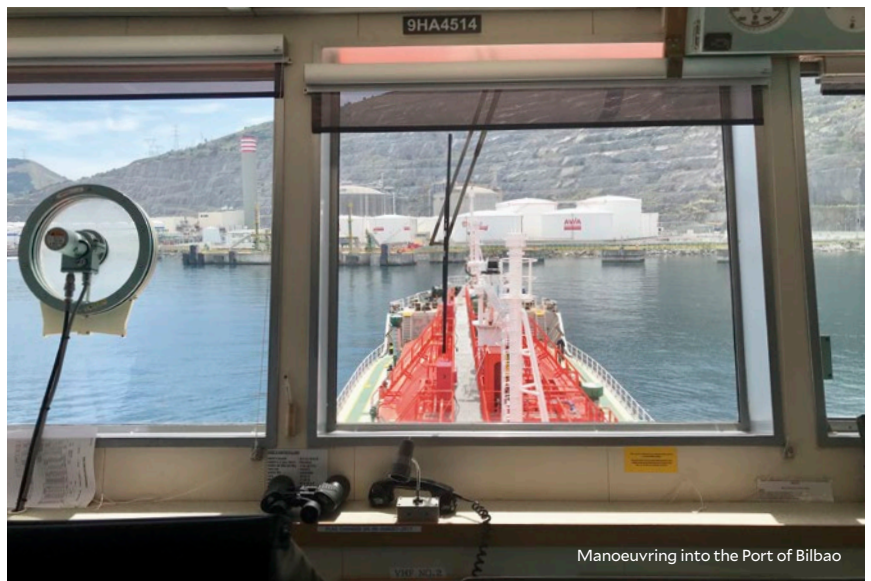
What an amazing trip: we sailed through the Panama Canal to the States then back to South America where we did a round trip of the continent, passing through the Magellan Straits of Chile. I had learned a lot about cargo operations and watchkeeping on the bridge. But the thing I learned the most on this trip was how to deal with having many different nationalities working in a confined space, where we all have our own opinions and ideas, as well as different ways of thinking. Most importantly, I learned what life at sea was like and how I dealt with it.

My second sea trip was on board the HMC *Valiant*, a UK Border Force vessel which operated in the English Channel and Dover Strait. What a change this was, it being much smaller than the chemical tanker I was just on, being only 44 metres. I was shocked when I saw it at Ramsgate. I was fortunate to be on with some amazing crew who really helped gain my confidence with shipboard operations and bridge watchkeeping. As we were operating in some of the busiest waterways in the world—the English Channel and the Dover Straits—and the Thames, I gained some amazing bridge watch skills and obtained my steering certificate. The purpose of the vessel was to protect the UK border from foreign-going vessels and to deal with the possibility of migrants crossing from mainland Europe.

We were involved in an incident where we had to rescue a boat full of migrants crossing the Channel, which had got into



Adam was awarded best Graduating Cadet for the HNC Deck class at Fleetwood Nautical College in the summer of 2018



Manoeuvring into the Port of Bilbao





difficulties as some of the people were in the water. I was asked to help secure the boat and prepare lifesaving appliances on board so that they were on standby when we rescued the migrants. I was also asked by the Captain to take the helm while the crew launched the RIB and assisted the migrants with getting on board. I helped take the ship back to Dover where they were taken ashore by the Border Agency.

Because of this, the Captain wrote a letter to Chiltern commending me on my assistance with the operation which led me to receive a Certificate of Commendation from Trinity House. This was an amazing opportunity to speak to many other members of the maritime community as well as members of Trinity House in their London headquarters.

Back to college for Phase 3 of my training. This was where I studied for my HNC in Nautical Science, which had a mixture of subjects, which included Ship Stability, Cargo Operations, Bridge Watchkeeping, Chartwork and many other subjects. I also had taken additional short courses such as Advanced Firefighting, Medical First Aid and GMDSS (Global Maritime Distress and Safety System).

When I finished Phase 3, I went back to sea, and my third ship was SV *Tenacious* which is a tall ship operated by the charity Jubilee Sailing Trust. This was by far the best trip I have been on as part of my cadetship, and I would recommend anyone to have a look and try to get onboard. Before I joined the ship, I luckily already knew about it as I sailed onboard in 2014 as part of a Leadership at Sea programme the Jubilee Sailing Trust offers and they also gave me a full bursary to join the vessel, which was amazing. Already knowing the ship, I fitted in really well and got involved with all aspects of the ship's daily routine.

The highlight of the trip was the voyage from Melbourne to Wellington in New Zealand. This trip took a couple of weeks, but it was so much fun. We encountered some very rough seas and storms while heading to New Zealand. With the vessel being manned by both able-bodied and voyage crew with disabilities we all had to chip in and make sure everyone was involved.

As part of this trip we had to visit a dry dock in Littleton in New Zealand, which I thought was a great opportunity to see the ship out of the water and get involved with the dry docking operations.

My fourth ship was *B-Gas Maud*, which was a gas tanker. They only operated in Europe, trading propane. As I knew this was my penultimate trip, I informed

“I INFORMED THE CAPTAIN THAT THIS WAS MY FINAL TRIP BEFORE MY ORALS AND I REALLY WANTED TO PRACTISE THE ROLE OF DECK OFFICER AS MUCH AS POSSIBLE”

the Captain and the other officers who gave me more pressure and more responsibilities and I was able to get more involved with operations such as leading an anchoring team, mooring station and being team leader for fire and emergency drills in preparation for my oral exams in the future. This was a great way to practise before I had to do it by myself in the near future and I'm so happy the Captain gave me these opportunities.

My last trip at sea was onboard the Windstar vessel *Star Legend*, a cruise ship. We visited some absolutely amazing places in Asia, such as the Philippines, Thailand, Vietnam, China and many other amazing countries. Like my previous trip, I informed the Captain and my officers that this was my final trip before my orals and I really wanted to practise the role of Deck Officer as much as possible and get involved with as many shipboard operations as I could.

All the officers really helped me out and challenged me every day. I also got the opportunity to get involved with the tendering operations and watersports team. Tendering was the favourite operation I was involved with. The best thing about this trip were the places we visited, and when I got an opportunity to go ashore I went to some amazing places.

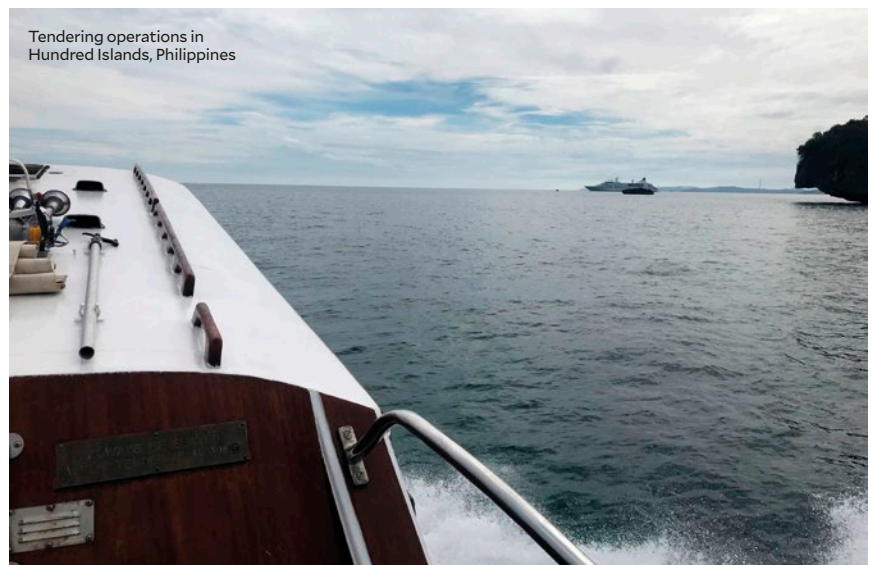
When I returned home and got back to College I knew I would have to work extra hard for the next couple of months in preparation for the written SQA OOW (Officer of the watch) exams and oral exam in Liverpool.

Before I took my final exams, we had our Graduation Ceremony in Fleetwood and—by surprise—I was awarded best Graduating Cadet for the HNC Deck class. I was awarded this by Captain Ian McNaught, Deputy Master of Trinity House. This was the best day of my cadetship, and I'm never going to forget how special the day was.

I was happy to also find out that I had passed my SQA written exams and then went on to pass my MCA Oral exam a couple of weeks later.

I am now back enrolled at Fleetwood Nautical College, where I'm studying an HND in Nautical which takes my education up to Mates and Masters level. I am finding it a bit more tricky than before, however it pushes me to focus more and aim for the best possible grades.

All in all, I have been on a massive rollercoaster over the last three years and I have grown so much as a person. I can't wait to go back to sea and be in charge of my own Bridge watch and to help other cadets through their journey.



Tendering operations in Hundred Islands, Philippines

As part of the Leadership at Sea programme, Adam had the opportunity to visit a dry dock in Littleton in New Zealand



Leading mooring operations in Hong Kong







Partner profile:

Institute of Marine Engineering, Science & Technology (IMarEST)

A look at how this membership body is supporting marine professionals globally and its work in informing intergovernmental policies and regulations as a learned society

Founded in 1889, the Institute of Marine Engineering, Science & Technology (IMarEST) is staying true to its mission 130 years on and continues to work with the global marine community to promote scientific development, provide opportunities for the exchange of ideas and practices and uphold the status, standards and expertise of marine professionals worldwide.

The Institute has long supported seafarers, setting up what is now the Guild of Benevolence in 1912 as a charity to help the bereaved families of the engineers of the RMS *Titanic*. All 35 marine engineers on board lost their lives in the tragedy, but their heroism remains unforgettable. They courageously stayed at

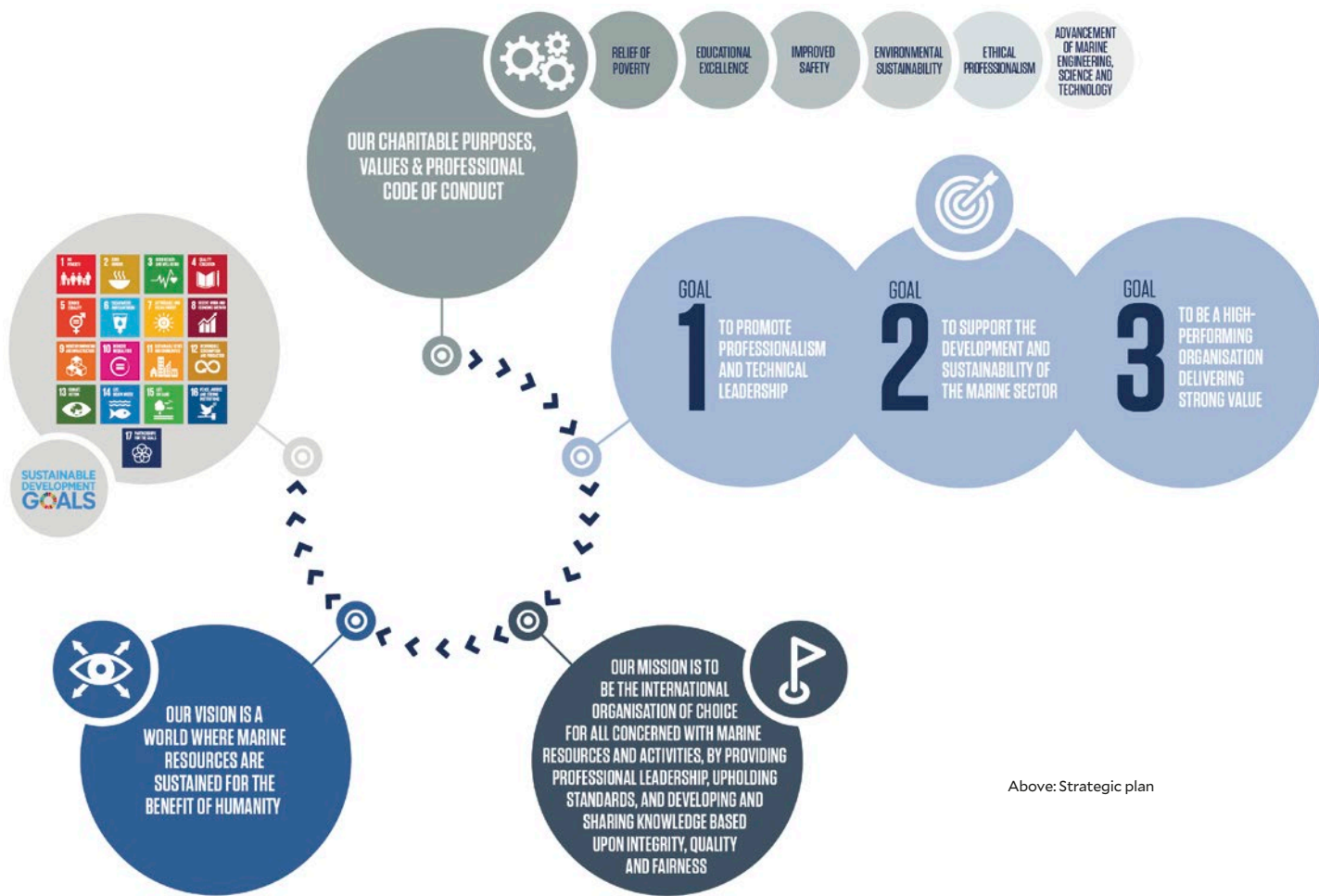
their posts until the end, maintaining electrical power to keep the lights on throughout the ship, reducing the danger of panic among the passengers. Power to the radio office was also sustained, enabling the transmission of distress signals until minutes before the ship sank beneath the waves.

In 1999, the Institute of Marine Engineers, as it was then called, widened its scope to support professionals working within marine science and technology, as well as engineering. We renamed ourselves to reflect this—becoming the IMarEST—and now have 49 branches across the globe, guiding marine professionals in 128 different countries through every stage of their careers.

But the remit of the world's marine professionals has changed dramatically in the last 130 years. We are seeing a growing need for their skills in all manner of applications as we ride the waves of technological innovation and the effects of a changing climate.



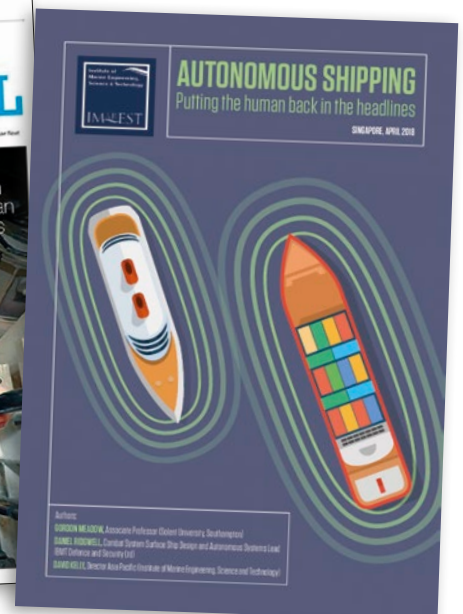
“THE IMarEST CONTINUES TO WORK WITH THE MARINE COMMUNITY TO PROMOTE SCIENTIFIC DEVELOPMENT AND UPHOLD THE STATUS, STANDARDS AND EXPERTISE OF MARINE PROFESSIONALS WORLDWIDE”



Above: Strategic plan

→ The challenges prompted by climate change are increasingly claiming the specialist knowledge of the Institute's membership, which covers the full spectrum of marine expertise. Our members are finding ways to alleviate the effects of all sorts of adverse phenomena, including sea-level rise, ocean acidification and related harm to marine life, changing ocean ecosystems and unpredictable weather patterns, to name a few. Alongside this, they are pushing advances in technologies such as artificial intelligence, robotics, autonomy and connected devices and applying them in unique ways within the marine sector.

In the context of such rapid progress, there is an even greater need for the Institute's role in benchmarking competence, upholding standards and ensuring ongoing professional development so that we can be confident that those at the forefront of such momentous work are supported with the most current knowledge and a network of esteemed professionals with whom to collaborate.



“THE CHALLENGES PROMPTED BY CLIMATE CHANGE ARE INCREASINGLY CLAIMING THE SPECIALIST KNOWLEDGE OF THE INSTITUTE’S MEMBERSHIP, WHICH COVERS THE FULL SPECTRUM OF MARINE EXPERTISE”

Competence and experience is ultimately demonstrated through professional registration with the Institute (i.e. Chartered, Incorporated/Registered or Technician status) in either engineering, science or technology. This year we recognise the breadth of specialist knowledge within our membership in more details with the launch of some new designations. We have introduced a designation for our Chartered Marine Scientist (CMarSci) register to allow hydrographers to use the letters ‘CMarSci(Hydrography)’ after their name to demonstrate their particular discipline. Further, post-nominals for this register will be launched to recognise oceanography and metocean specialisms. Similarly, our Chartered Marine Technologist register will see diversification with CMarTech(Navigation) and CMarTech(Cartography) options for those working in these essential fields.

As an Institute, we are also trying to ensure that this network of esteemed professionals is as diverse as it possibly can be and that it is constantly being reinvigorated with new blood. Our Sea Your Future campaign, to encourage more young people into the marine sector, is one way in which we are doing this, which includes free membership to the Institute for all undergraduate and postgraduate students, cadets and apprentices. Another is our STEM Returners programme, a joint initiative with the Women’s Engineering Society, to redress the gender imbalance in technology, engineering and science professions by structuring return-to-work schemes for those that have taken a career break.

In addition to supporting marine professionals, our other vital role is moving the sector forward through informing policy and regulation at an intergovernmental level and we have a voice in a variety of forums.

We have seen great success in the past few years with efforts to reduce the transfer of harmful invasive species through ships’ ballast water (more is to be done with similar issues of transfer on ships’ hulls) and reducing emissions from shipping. Our special interest groups, which cover a broad range of subjects, work tirelessly to push development in a variety of areas from offshore renewable energy and marine autonomous surface ships to operational oceanography and ocean governance. Most recently, through these groups we have hosted roundtable discussions on marine plastic pollution and autonomous shipping, as well as conferences on naval engineering and ship control systems.

Looking ahead, the IMarEST is following a strategic plan that will take us to 2022 and identifies three key priority areas: 1) promoting professionalism and technical leadership; 2) supporting the development and sustainability of the marine sector and 3) establishing the Institute as a high-performing organisation delivering strong value.

These objectives build upon our past achievements and go to the very heart of our mission as an Institute. We will continue to facilitate knowledge sharing, foster innovation, promote environmental sustainability and drive professionalism to ensure we are well equipped to overcome the challenges we face as a global ocean community.

It is clear that the only way to achieve these goals is through institutions working together with business, industry and government and it is wonderful to be a part of projects such as the Clean Maritime Council, where experts on clean shipping are plotting the UK’s route to zero emissions, and the Maritime 2050 panel which is looking strategically at issues of critical importance to the maritime sector between now and 2050.

Ultimately we will stand to help support marine professionals in making good decisions, ones that are right for the world and that champion a safe and sustainable future for the marine environment and the sector as a whole.

IMarEST is a keen campaigner for environmental awareness



True Grit

Our Health and Safety Manager **Stephen Durham** and Risk Manager **Anthony Porter** describe major incident exercise 'True Grit' in collaboration with Essex County Fire and Rescue Service



Firefighters in the Buoy Yard at Harwich

In the last twelve months you may have heard or read reports of serious industrial accidents and fatalities around the country. Add to this the news of floods, fires, explosions and terrorist attacks, it comes as no surprise that—like many other organisations—we at Trinity House have to ensure we are as ready as we can be to deal with such emergencies.

Should disaster strike we have to be confident we can deal with the initial response prior to arrival of the expertise of the emergency services and, likewise, the aftermath. To this end, Trinity House undertakes regular major incident exercises. This is not merely to test and review our plans but to train relevant staff in how to confidently deal with them. In the main, these are often 'table-top' exercises, sometimes planned and occasionally initiated unannounced.

Earlier in 2018, a thorough review of our Business Continuity Plan was conducted by Directors, Senior Managers, key staff and business continuity consultants. This resulted in the introduction of the new 'Z Packs', which are a condensed and easy-to-use version of the full plan. This exercise allowed us to put the updated plan to the test and simultaneously introduce new staff to the experience of dealing with a major incident.

As the result of discussions with Essex County Fire and Rescue Service—who were equally keen to practice their response—a tripartite exercise was devised and 'True Grit' was born. No, nothing to do with the films, but as the incident involved a dust explosion in the grit blast bay 'True Grit' was an apt (albeit borrowed) title and all John Wayne fans were happy.

Our emergency services also need to undertake regular training and do not often get the opportunity to train in an industrial environment, so the offer of our venue was eagerly accepted. The plan was to have an exercise that tested our initial response to a serious accident and fire situation, the Essex County Fire and Rescue Service's response to a large incident in our Buoy Yard, and the Emergency Response, Crisis Management and Business Recovery phases of the Business Continuity Plan. Although this was set up to test our response and skills, it was also of equal importance that all participants involved gained valuable experience in dealing with an incident of this nature.

It takes considerable planning to arrange

a large incident on this scale, particularly one that may draw attention if large billows of smoke appeared over Harwich Town. Essex Constabulary, East Anglian Ambulance Service, Harwich Haven, Harbour and Port Masters and several other agencies had to be informed. Risk assessments were drawn up by all agencies concerned, and in the event of a real life incident on the day, exercise abort and contingencies procedures were also put in place. We were also fortunate that St John Ambulance volunteered to participate in the exercise and to provide real medical support. Several 'volunteers' from the Buoy Yard and London office were enlisted to play out certain roles and they all did an excellent job in acting as 'concerned relatives' or press journalists, albeit Equity cards may not be forthcoming. The Buoy Yard Team rose to the challenge to set up the scenario by making the building a little more difficult to access and several areas much darker by covering lighting.

In setting up a storyline that initiates a suitable response from all agencies, the scenario had to be fictitious, with some inputs that required the suspension of disbelief at times but these were solely used as an expedient to facilitate the exercise.

The Scenario

Working on the buoy lift platform, utilising the overhead gantry and while lifting a superstructure into place on top of a buoy, the load fails and tumbles over on top of

“WHEN IT BECAME APPARENT THIS INCIDENT WAS SERIOUS THE CMT ASSEMBLED”

an employee who is then trapped by his legs. He is breathing and unresponsive with injuries that would later prove to be fatal. A colleague, in leaping clear, has fallen and broken her arm with an open fracture and a wound to her forehead. The oxy-acetylene set nearby has been knocked over, fracturing the valve on the oxygen cylinder, which has shot projectile-like through the walls of the grit blast and paint spray bays. This causes sparks and with the additional oxygen present, a dust explosion occurs followed by numerous small pockets of fire.

There is a grit blast operative lying unconscious on the floor of the now smoke filled and blacked out grit blast booth. His lone worker alarm has activated initiating a first aid response but on their arrival the first aid alarm also activates. Two first aiders ignore the alarm and the need to evacuate, and remain with their casualties, even though smoke is developing in the roof above.

The Response

The initial response was led by our on-site first aid team and after activation of the first aid pagers by the Planning Centre, further support was provided by two additional first aiders from the main office. Planning Centre also informed Director of Operations Commodore Rob Dorey shortly after the incident had occurred; he took responsibility as Emergency Controller and formed the Emergency Response Team in one of the meeting rooms in the office building with other key senior managers in order to assess the situation as it developed. This was followed by the steady arrival of the Essex Fire and Rescue Service with four appliances and St John

Ambulance with three ambulances.

When it became apparent that this incident was serious and would impact on normal operations, the Crisis Management Team (CMT)—which is formed of senior managers and other co-opted staff— assembled to coordinate the response. This command hub included a live CCTV feed from the Buoy Yard and a video conference link to London, where the Deputy Master, the Director of Navigational Requirements, the Director of Business Services and the Public Relations Manager were situated

Human Resources and Public Relations staff were included in the CMT as they had to respond appropriately to requests for information from worried relatives of members of staff and press enquiries, which were injected into the exercise to provide a further element of realism. Dealing with such enquiries correctly is an important aspect of Business Continuity, which was successfully tested during this exercise. It was also important that Trinity House dealt with all forms of media interest correctly and in an efficient manner. One such inject included a fictitious ‘reported missing’ employee who seemed to have both a wife and a girlfriend (both with children), though neither knew the existence of each other and both were demanding information. In addition, liaison with the Police, the Fire Service and a Health and Safety Executive (HSE) investigator had to be addressed, and press releases made, to name just a few of the issues covered.

The Aftermath

As the exercise progressed we reached the point where the situation was brought

under control: the fires were out, all the casualties were being treated, and the Fire Brigade was having a well-deserved cuppa. But how do we get operations back to normal and carry on with our day job?

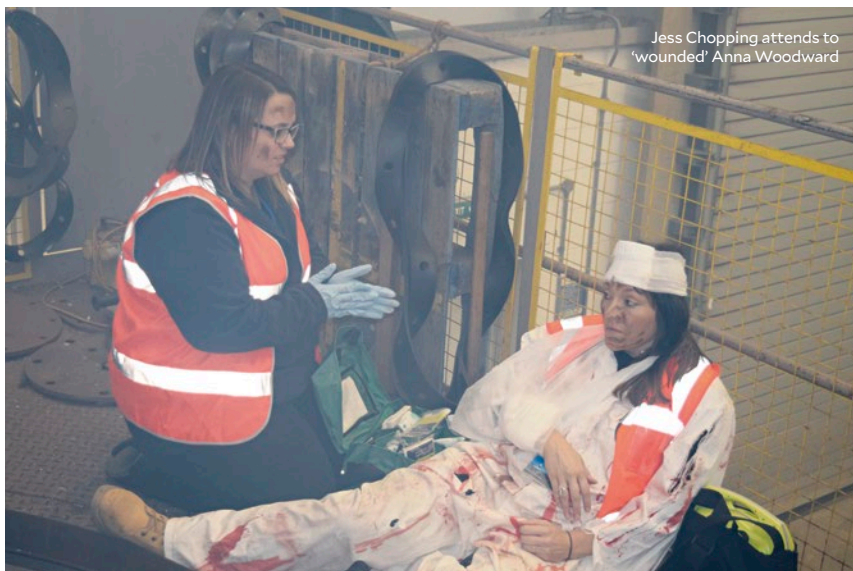
The CMT looked ahead to how Trinity House would start to return to business-as-normal in the Business Recovery phase of the plan. This covered how the buoy refurbishment work programme and the Harwich Supplies function would be affected by the incident. In order to continue the service that they provided, it was agreed that it would be necessary to increase the operational capabilities of Swansea Depot in order to meet the increased workload. This would include the temporary relocation of staff and resources.

The full extent of the damage sustained to the Buoy Yard had to be established in order to form the starting point for the next important topic for discussion: how we go about rebuilding the Buoy Yard. Obviously, in real life, this task would take up to two years to complete and it was unrealistic to consider and address all the potential issues that this would involve in several hours, so only the most important implications were considered. During this discussion it was noted that a flip-side to such an incident was that it would provide several benefits to Trinity House, as newer technology, more modern building techniques and general design improvements could be implemented into the design and build of the new Buoy Yard building.

In all, it was a very successful exercise. With regard to the initial emergency response, yes, mistakes were made, some equipment was not suitable or in the wrong place, communication and coordination could be improved, some roles could be better defined, and the responses might have been faster in many areas. The Business Continuity Plan and Z Cards were used effectively by those involved in the CMT, with only a few improvements identified, which have already be implemented.

But this is exactly why we run such exercises. From each exercise we conduct, we learn, develop, and revise our plans, so in the event of a real incident we will have a little more experience, are better prepared and are more efficient in our response.

With thanks to all those who participated so admirably when called upon to participate, sometimes with little notice; to the Buoy Yard Team who helped set the scene; our budding thespians from Harwich and London; Offrisk Consulting Ltd; the St John Ambulance and all the planning and input by Essex County Fire and Rescue.



Jess Chopping attends to 'wounded' Anna Woodward



Longstone Lighthouse
© Steve Sole

Showcase your *Flash* photography

Enter our annual lighthouse
photography competition

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 a winner we post the winning images online and ask the public to vote for their favourite.

Photographs must be of one of the following Trinity House lighthouses: Alderney, Anvil Point, Bamburgh, Bardsey, Beachy Head, Berry Head, Bishop Rock, Bull Point, Caldey Island, Casquets, Coquet, Cromer, Crow Point, Dungeness, Eddystone, Europa Point, Farne, Flamborough Head, Flatholm, Godrevy, Guile Point East, Les Hanois, Heugh Hill, Hilbre Island, Hurst Point, Lizard, Longships, Longstone, Lowestoft, Lundy North & South, Lynmouth Foreland, Mumbles, Nab Tower, Nash Point, Needles, North Foreland,



Southwold Lighthouse
© Helen Reece

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, Trevose Head, Trwyn Du, Whitby and Wolf Rock.

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

Hard labour

PR and Records Manager **Neil Jones** picks out highlights from a recent acquisition of historical photos of the construction of Beachy Head Lighthouse

The Trinity House Corporate Charity was instrumental in helping Eastbourne heritage organisation The Keep to acquire at auction a unique collection of 71 magic lantern slides depicting the construction of Beachy Head Lighthouse during 1900-02.

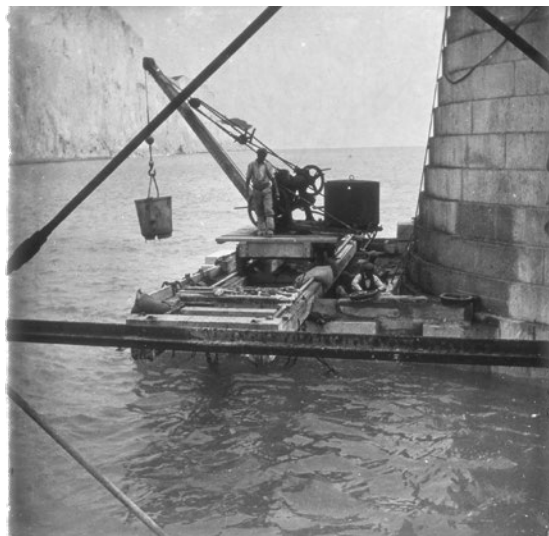
Here are just a few of them, having been conserved, scanned and shared by The Keep, with excerpts from the *Herald Chronicle* of 31 May 1952 to help illustrate some of what went into the construction of this much-loved station.

Making a start

The first Trinity House-built lighthouse at Beachy Head was erected on top of the cliff in 1828. Trinity House's engineering consultant James Walker erected Belle Toute Lighthouse, a 14-metre high circular tower on the headland. This remained in operation until 1899 when it was abandoned due to being frequently shrouded in mist and threatened with collapse because of recurrent falls of chalk from the cliff.

From the *Herald Chronicle*: "In 1901 the Trinity House Brethren decided on a lighthouse at the base of Beachy Head, and geological inspection showed that there was a suitable hard chalk foundation just off the foot of the sheer precipice. The new building was designed by Sir Thomas Matthews, engineer-in-chief to Trinity House, on the lines of the well-known Eddystone lighthouse. Cornish granite was to be used."

A circular coffer dam was built to keep the sea back and extend the time which could be spent on foundation work. Alexander Mockett worked on the construction when he was 22, and recounted the story 50 years later: "We worked with pick and shovel and such were the circumstances that often the work of over five hours produced no more than a barrowful of excavation. We could not use explosives because of the danger of splitting the cliff and subsoil."



Up and down the cliff

From the *Herald Chronicle*: "In order to make a start, some staging had to be erected, like a pier, in the sea. After this a cableway to the top of the cliff was designed by Mr W T H Carrington, consulting engineer for the Bullivant Company."

When they were putting in the staging of the 'pier' there was no cableway, so the workmen had to climb up and down the cliff by means of paths and long iron ladders.

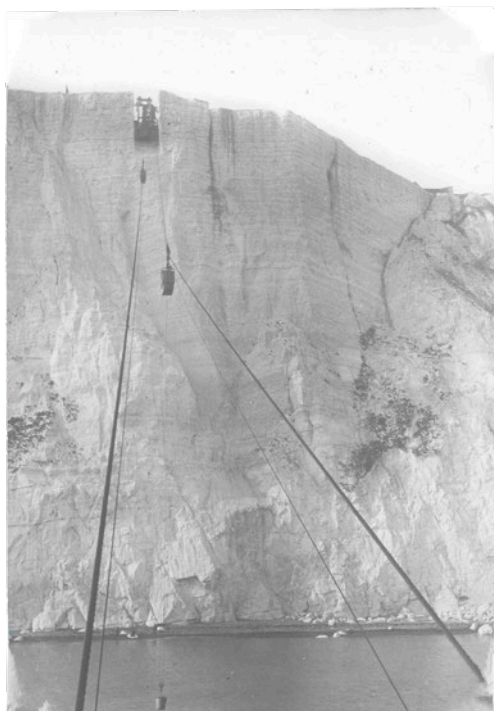
To help build the lighthouse, in July 1899 we set up an aerial cable from the top of the headland down to a platform where the lighthouse is today.

This cable was used to lower down people and building supplies.

"The span was 600 feet and one rope for the pulley was six inches thick and capable of sustaining a load of just under 120 tons, the other rope being five and a half inches thick and with a breaking point at 100 tons. The cables were sunk into the chalk at sea level."

Mr Mockett recounted his time with the cable cage when it suddenly stopped in a blizzard: "You couldn't see a yard in front of you. What happened was that the man at the top, and he was aged 70, couldn't see us because our warning light had gone out. He held on to the brake and we were just swinging there, sometimes hitting the cliff... Eventually they got us up by manpower."

Mr Mockett and a few other workers decided to no longer use the aerial cage.



Working and living on site

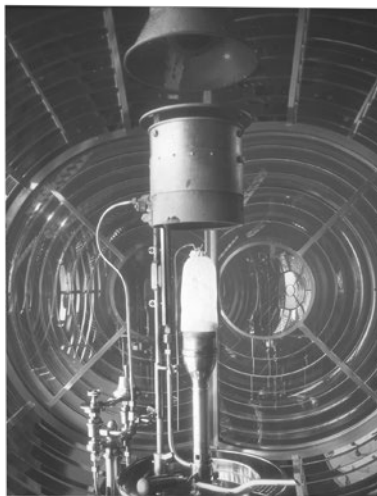
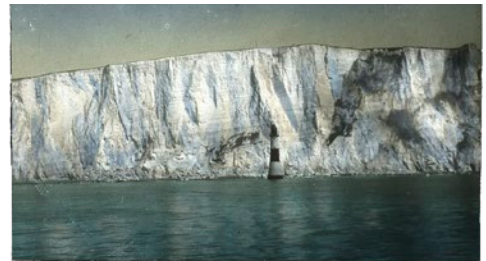
Mr Mockett recalled life on site: *"I would walk to the top of Beachy Head and remain there for three or four days, sleeping in a hut at the top and working down below."*



The finished lighthouse

3,660 tons of Cornish granite were used in the construction of the present tower.

The new light came into operation on Thursday 2 October 1902, with some finishing touches being completed in January 1903. The well-known red band around the tower first appeared in 1951; before then the stripe was black.



The Keep is a world-class centre for archives that opens up access to all the collections of the East Sussex Record Office, the Royal Pavilion & Museums Local History Collections and the internationally significant University of Sussex Special Collections.
www.thekeep.info

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

The Corporation of Trinity House

Master

Her Royal Highness The Princess Royal KG KT GCVO

Corporate Board as at 31 March 2019

Deputy Master: Captain Ian McNaught CVO MNM FNI

Captain Nigel Palmer OBE MNM

Rear Admiral David Snelson CB FNI

Captain Roger Barker MNM FNI

Captain Nigel Hope RD* RNR

Captain Stephen Gobbi MNI JP MA LLB

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Lighthouse Board as at 31 March 2019

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Captain Roger Barker MNM FNI

Commodore Rob Dorey RFA

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Captain Nigel Palmer OBE MNM (Non-Executive Director)

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Thomas Arculus Esq (Secretary)



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Cover image

The distinctive Beachy Head Lighthouse, the construction of which features inside this issue.