Trinity House: What’s Next?
TH500 Story Writing Competition for Schools

“As a 10 year old boy living in Harwich, I have not been around for most of the 500 years of Trinity House. But I do know how important it is and how much it has changed during the first 500 years.

I’ve been thinking what will change in the next 500 years of Trinity House. There will always be a Trinity House, for every 500 years, all around. Maybe there will be no lights or lighthouses, computer systems will project lights underwater for the ships to see. This would be amazing and you never know it might even happen! They might not even have captains and crews on the ships one day! Maybe robots or even computers will run the ships.

What would happen without Trinity House to navigate the ships and keep them safe on their travels? All the sailors would crash into other ships, oil will leak into the ocean and all the fish and wildlife will die. This would be awful and very sad and it will never be cleaned up because there will be too much oil and ships will no longer be able to transport food for us to live and the world will come to an end.

As I’m a little boy, I dream that when I’m older I would like to work for Trinity House but not in the office. No, I want to be an inventor and create projector lights underwater. I think it will be very fun and it might even make me famous.”

Winner — written by Leyton Howlett.

“Trinity House is a great company. They work really hard but they need cheering on. I think the lighting will change because it’s a bit boring. I also think there should be colours and rainbows in the light. Also the lighthouse will be lit from outside so it guides the mariner and is beautiful to look at. The lighthouse will have high technology like pressing a button to open the doors. You will be able to visit all the lighthouses and camp on site. There will be food there so you need to bring food or go back. For some, there will be so many wind farms to create renewable energy that we will need to have a lighthouse for each farm so that ships and sailing boats won’t crash into them.”

Runner up — written by Emma Nicholson.
This is my first issue of Riah in my new role as Public Relations and Records Manager, having previously been responsible for marshalling our five centuries of history as the Records Manager. My first job as Editor must of course be to thank the excellent Vikki Gibson for her nine years as Riah Editor and PR Manager. My second job is to thank all of our readers and contributors as well as all Trinity House staff and partners, without whom there would be no Riah at all. I have a great many of you and I look forward to hearing from even more of you and telling the world about the vital works you all do.

We want your articles (and your feedback), please send any submissions for the next edition of Riah to me by 16 March 2015.

Wishing you all the very best,
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For updates between issues please visit our website www.trinityhouse.co.uk or

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or

www.facebook.com/trinityhouseuk

Our cover image displays the artwork of Lacey, winner of the Trinity House 500 Schools Drawing competition. The cover shows Jesse Wickes, 1st runner up, and Elizabeth Stalter, 2nd runner up—all of whom are students in class 2, St Joseph’s Catholic Primary School, Harwich.

INTRODUCTION BY THE EXECUTIVE CHAIRMAN

Captain lan McNaught

There is no doubt that the Visiting Committee audits play an important role in corporate governance for they provide an assurance to the Lighthouse Board that the aids to navigation we provide satisfy the statutory undertakings of the Corporation as a General Lighthouse Authority. In turn the Lighthouse Board is able to claim that our finances are well spent with regard to effective husbandry of our assets and that such assets are operated to accredit with safe and environmental compliance. Furthermore, we were able to appreciate the excellence of our Support Vessel fleet and its personnel who are ably complemented by staff on shore.

Wherever the team travelled there were definite signs that reflect upon the professionalism of our dedicated maintenance teams; for without them we would fail the manner who has come to accept our very high standards created and moulded over five centuries in what have been at times extreme conditions.

Once again it was privilege to escort HRH The Master aboved in the Service when we showed her something of the work carried out at St. Just Forward Operating Base, at Longships lighthouse serviced from there; then back to Harwich, where she inaugurated the Planning Centre. We were able to show her some more of what we do and staff took the opportunity to meet the Master. We know that she is a keen photographer always eager to learn by extending her list of visits stationed.

In recent months we bade farewell to Commodore David Square who served the Corporation well not only as a Warden but as a member of the Examining Committee and as the director responsible for the smooth running of the Trinity House Merchant Navy Scholarship Scheme and its parallel bursary for professional yachtmen. He has been succeeded on the Corporate Board by Commodore Bill Walworth who was until recently Commodore of the Royal Fleet Auxiliary and to whom we extend a warm welcome; his training role will be taken on by Captain Nigel Hope.

With regard to our charitable activities it is a pleasure to report that we continue to make grants for the benefit of sailors and their welfare, to those who have come ashore as well as with the provision for youth, training, public safety and education. In the financial year to March 2014 we spent over £4 million in furtherance of these objectives with more than £1.6 million by way of grants to other maritime charities.

Finally, may I take this opportunity of wishing you and your families all the best for the forthcoming festive season and to thank you once again for your unstinting support since I last wrote to you.

The rear cover shows HRH The Princess Royal paid a visit to the Corporation’s Harwich offices and buoy maintenance facility on 25 June 2014.
HRH The Master at Harwich
In her capacity as Master of the Corporation of Trinity House, HRH The Princess Royal paid a visit to the Corporation’s Harwich offices and busy maintenance facility on 25 June. Her Royal Highness arrived by helicopter at the port of Harwich and proceeded to St. Nicholas’ Church where a service was held to mark the 500th anniversary (quincentenary) of the Corporation’s first Royal Charter, granted by Henry VII on 20 May 1514. Trinity House staff from the various aspects of the Corporation’s activities attended, travelling from the depots at St. Just and Swansea, the Tower Hill headquarters and two of the three Trinity House vessels, Patricia and Alert.

At the end of the service, at the presence of which was the Rt Rev. Stephen Cottrell, Bishop of Chelmsford, Her Royal Highness, accompanied by Captain Ian McNaught, led a procession to the Trinity House offices for a guided tour and presentation of the new Planning Centre. The Planning Centre is the hub of Trinity House’s planning and monitoring activities in its capacity as the General Lighthouse Authority for England, Wales, the Channel Islands and Colalker The Royal party then went over to the busy maintenance yard for a group photograph with some 200 staff present, many of which were then presented to the Master The Master then signed the Visiting Book and departed for the waiting helicopter.

Of the day itself, Captain Ian McNaught said that when speaking to HRH The Princess Royal, the latter remarked that as wonderful as it had been to celebrate our 500 anniversary – a very rare thing indeed – it was also remarkable to see all the arms of Trinity House come together in one place. Captain McNaught went on to say that it was a great honour to have HRH The Princess Royal as Master of the Corporation and to see her so perfectly engaged with the staff and the functions of Trinity House.

Lighthouse abseiling
Fundraising abseiling, in aid of the maritime charities, took place on 5 July at Southwold lighthouse, on 7 July at Nash Point lighthouse (above), and on 19 July at Portland Bill. Each event ran from 1000 to 1600 and £3 000 was raised by over 100 enthusiastic participants across the three events. Conditions started wet in Southwold then dried up, were fantastic at Nash Point, meanwhile Portland Bill saw passing showers and thunder but it was mostly sunny, according to Philip Cudowie who coordinated the events. Relative heights are: Southwold, 31m; Nash Point, 37m and Portland Bill 41m.

ST Just flying visit
HRH The Master visited the Trinity House ST Just depot airport on 7 July and was met by Executive Chairman Captain Ian McNaught then introduced to depot staff who talked about their various roles at the forward operating base for the Trinity House lighthouse maintenance programme. She boarded the Trinity House helicopter Satellite for a flight to Longships Lighthouse, accompanied by Captain McNaught and Lighthouse Manager Warren Clarke, for a tour of the tower built by Sir James Douglas in 1875. On her return she met the families of staff at ST Just. Her Royal Highness, a keen lighthouse visitor, has been heavily involved with events surrounding the Corporation’s quincentenary this year. She was elected Master of Trinity House in 2011 when her father HRH The Duke of Edinburgh stepped down from the same position after 42 years.

IMO Secretary General visits Harwich
On 9 July we welcomed His Koj Sekimizu, (centre) Secretary-General of the International Maritime Organization (IMO) to Trinity House Harwich. He travelled there with Captain Roger Barker (left), Director of Navigational Requirements, and was welcomed by Martin Brandtys (right), R&HNAV Manager. Captain Barker gave a briefing on Navigational Risk. This was followed by an introduction to Navigation by Martin Brandtys. Alan Curn introduced CHS Vulnerability and the need for Resilient PNT and Alyn Williams provided an overview of ACCSEAS. Mr Sekimizu was given an extra demonstration by Paul Williams and Chris Gargan in the Rapid Intervention/Vessel TRV Alert alongside at Trinity Pier. In a further briefing Malcolm Nicholson spoke on Lights Developments and before our guest departed he was shown the Busy Yard and had the ads to navigation maintenance processes that take place there explained before he departed for London in the afternoon.

DRAGON BOAT RACING IN THE DOCKLANDS

The next nearest cutter was almost eight minutes behind us and our main rivals, Port Health & NPL, were nine and ten minutes behind us. All this is thanks to our new TrinityTide and a solid crew working as one unit.

Flash: Winter 2014
e-Navigation is well on its way

IT IS A CONCEPT THAT IS WIDELY KNOWN and has become a term that can be interpreted to offer a range of solutions. It is designed to make maritime navigation safer and easier, which many see as a revolution in the way of working at sea. ACCSEAS (Accessibility for Shipping, Efficiency Advantages and Sustainability), is a project led by the General Lighthouse Authorities of the UK and Ireland with ten further partners from Denmark, Germany, The Netherlands, Norway and Sweden. This three-year project concludes with a final conference at the World Trade Centre in Rotterdam in February 2015.

IMO are expected to agree on an implementation plan for e-Navigation during this autumn, and e-Navigation itself is expected to be implemented globally during 2018 or 2019. While the International Maritime Organization (IMO), the International Hydrographic Organization (IHO) and the International Association of Maritime Aids to Navigation and Lighthouse Authorities (IALA) provide a framework for e-Navigation, it is up to national maritime administrations to develop software, test systems and technical standards that have to play together.

Helping the mariner...

ACCSEAS, the partner of the Danish Maritime Authority (DMA), has been busy working with e-Navigation for several years. It is anticipated that e-Navigation will become a reality on ship bridges in a few years. Its aim is to bring together all the important navigation information in a harmonised, integrated system. Navigators can receive relevant forecasts for current, wind, waves and water levels, ports, navigation information and more, directly in the Electronic Chart Display and Information System (ECDIS) or a dedicated display. As well as supporting the mariner at sea, e-Navigation will also assist the shore-based organisations, such as national authorities, shipping companies and ports, by allowing access to the harmonised set of information about the vessels.

The solutions below are just a couple of examples of those that have been developed within the ACCSEAS test-bed. Demonstrations of these can be seen at the forthcoming final ACCSEAS conference, the 2015 event, to be held in Rotterdam and chaired by international maritime expert, Kees Polledran.

Maritime Safety Information (MSI) / Notices to Mariners

Today, navigation warnings are promulgated using VHF, Navtex and SafetyNet. There are many warnings issued and a large part of them are not relevant to the ship’s position or route. It is noted that position information is given to one decimal place, which can be inaccurate when viewing on, for example, electronic charts. It is expected that navigation warnings in the future can be output via various e-Navigation channels. This means that reception can be customised with a filter so that the warnings are current for each ship on its planned route. Positions can be given with greater resolution that is more applicable for display on an ECDIS. The process excludes human errors in the transfer of the position information from existing services to the paper chart.

Mariners can therefore start to benefit from the advantages of e-Navigation as it becomes widespread. It is anticipated that the prototype communications infrastructure for the e-Navigation system, the so-called Maritime Cloud, will be completed by 2018.

“The most important thing is that the solutions will actually work on the ships,” particularly that it suit to the needs of the navigator whilst recognising the need to support other stakeholders in the maritime and logistics world,” said Mads Bentzen Billesø, himself a trained Master Mariner and who has been associated with the development of e-Navigation for over six years. Readers may wish to visit the ACCSEAS website to view all of the solutions, watch the ACCSEAS films and download the leaflet. These are available at www.accseas.eu. or contact Georgina Button, Communications Officer, georgina.button@glas-nav.org.
by Trinity House technicians in August. Two temporary buoys put in place to mark the Nab during the construction phase were due to be finally removed from station before it was commissioned in October, as this edition of FLASH went to press.

Aids to navigation

The new LED lantern is manufactured by Vega in New Zealand and delivers a 12 nautical mile all round white light. This is supported by an identical standby lantern of the same range which is powered by an independent solar array and battery bank. This style of design and installation is common in Trinity House stations and provides a high level of integrity for the systems which in turn translates to a very high aid to navigation availability overall.

The station also has a racon (radar beacon) and an Automatic Identification System (AIS) unit to transmit and display on a ship’s radar and the Electronic Chart Display & Information System (ECDIS) unit. To complement the main aids to navigation Nab Tower also has an audible warning (fog signal) with a two mile range.

Following the extensive study to decide what to do with the ageing and corroding structure, it was decided to reduce the height and diameter and then to spray it with a reinforced concrete outer coating and provide a new concrete deck. The original aid to navigation, affectionately referred to as the pepper pot, has been refurbished without the lantern glazing and the new 12 mile light with fog signal, radar beacon (racon) and AIS built on and in it. The station is designed for minimal maintenance with a design life of a further 50 years though some battery and aids to navigation upgrades will be required during this period.

As has been mentioned elsewhere the works took longer than expected due to the presence of peregrine falcons and many days lost due to bad weather.

The new aid to navigation was craned back onto the new Nab deck by the skilful manœuvring of THV Galatea alongside the lighthouse structure in July 2014. This required Galatea to position to within five metres of the tower and hold there in dynamic positioning mode. In order to do this safely it was necessary to position the ship to one side of the lighthouse on the tide line and very slightly across the tide so that in the unlikely event of total propulsion failure the tide would carry the ship clear. Position was maintained with the necessary precision to safely transfer the aid to navigation from the ship to the lighthouse by supplementing the Differential GPS-based POS-MV position fixing system with a short range fanbeam dynamic positioning capability.

The aid to navigation was commissioned by Trinity House
Development of Virtual Aids to Navigation

T

HE GENERAL LIGHTHOUSE AUTHORITIES of the United Kingdom and Ireland (GLA) are comprised of Trinity House, the Commissioners of Irish Lights and the Northern Lighthouse Board and have a requirement for Virtual Aids to Navigation. Between them they have the statutory responsibility to provide marine aids to navigation (AtoN) around the coast of England and Wales, all of Ireland and Scotland respectively.

When a shipwreck or new danger is reported, the GLA will assess the location of the incident, vessel traffic in the area and surrounding depth of water to determine if further action is required. If deemed necessary a GLA vessel will be tasked to proceed to the location to assess the situation and to determine the exact position of the incident, assess the clearance depth and physically mark the danger if required. Marking of the danger may entail the use of one or more buoys or the use of the vessel itself as a guard ship, or even a combination of both.

There will always be a finite time between incident occurring and the vessel arriving at the location and marking the danger with a physical AtoN and, as such the use of a virtual AtoN (VAtoN) is an appealing concept as it could provide a preliminary near-instantaneous warning.

The International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) defines a VAtoN as “a digital information object promulgated by an authorised service provider that may be presented on navigational systems.” This warning of a change to the navigable conditions should be provided in a form that can be received, interpreted and displayed by any class of suitably-equipped vessel in the operational area.

AtoNs are, of course, for the use of all mariners and as such a careful determination of which mariners need to see the aids in a particular location must be undertaken. Mandatory carriage requirements are such that not all vessels will see an AtoN on an appropriate graphic display and this must be borne in mind when considering their use.

One of the key benefits of this technology is the ability to precisely target where this information is delivered, as it can be limited to the affected area and can be presented directly on navigational displays with low deployment and maintenance costs.

Origins and Development
VAtoN development has become possible through the deployment of networks of AIS base stations and the installation of onboard equipment with the capability of delivering the Virtual AtoN symbol. These networks are generally provided and operated by coast guard services and they may or may not be the same authorities that provide AtoNs.

The GLA have considered several methods of providing VAtoN information; one possible means of delivery is the installation of suitable AtoNs on GLA vessels, so that they can transmit VAtoN while in the vicinity of an incident or while deploying physical AtoNs. Another option is to install units suitably equipped to use the service. Captain Roger Barker, Director of Navigational Requirements at Trinity House, added a note of caution: “AtoNs are, of course, for the use of all mariners and as such a careful determination of which mariners need to see the aids in a particular location must be undertaken.”

The Automatic Identification System (AIS) is used to convey VAtoN information; resulting in the presentation of a new VAtoN, or several VAtoNs, on the mariners’ electronic chart. In order to receive and observe VAtoNs, the mariner must have an AIS transceiver capable of decoding AIS Message 21 and a suitable means of displaying it. It is important to note that some AtoN units, and some electronic charts, are not capable of processing AIS Message 21 and therefore it may take many years before all users are suitably equipped to use the service.

Deployment: Lighthouse Installation

An AIS AtoN unit was installed on Dungeness Lighthouse, Kent. In this test, the unit was configured and controlled from the Trinity House depot in Harwich, Essex. The result is shown in Figure 5, taken from a display in the Trinity House control and monitoring centre in Harwich. It should be noted that a diamond is shown on the display, rather than the correct symbol of a diamond with a superimposed V inside of it, this is not the correct symbol but is a function of the display software, and not the VAtoN information. In order to provide VAtoNs across a wide area it will be necessary to locate these units at regular intervals along the coast or area of coverage. A separate project will consider the potential locations for a full deployment; however, Figure 6 shows the estimated coverage area for an AIS AtoN when transmitted from a lighthouse. This is defined as the geographical area within which the received power exceeds -107 dBm (assuming cable losses of 3 dB). It can be seen from Figure 6 that the maximum range is predicted to be approximately 58 km (31 NM), which is in line with empirical observations. It should, however, be noted that this prediction assumes perfect sea conditions and in reality the true usable range may be less. Further work is required to understand the full operational range and this image should be used as an indication only.

It has been successfully demonstrated that the appropriate hardware can be installed to enable VAtoNs to be transmitted from chosen locations, whether that is from a vessel or a shore-based location, such as a lighthouse. These options provide the GLA, and potentially other lighthouse authorities, with an effective way of marking new hazards rapidly and this method could now be implemented operationally.

Figure 1: GHVA Sea Area 1

Figure 5: Close-up of the AIS AtoN Installation on THV Alert.

Figure 2: Close-up of the VAtoN Installation on Trinity House’s Rapid Intervention Vessel THV Alert (see figures 2 and 3).

Figure 4: Screenshot showing Virtual AtoN transmitted by THV Alert on to Stream Mooring No. 1.
Requirements for Communications Interface

AIS AtoN units are normally configured locally using a physical (i.e. wired) connection to a PC. However, one of the main reasons for using VAtoNs is speed of deployment and in many situations this can best be achieved by remote configuration of a unit already in an, often unmanned, location. In order to enable remote configuration and control over a telecommunication network, an additional interface needed to be developed as part of the proof of concept project. Such an interface needed to be compatible with a wide range of communication technologies, such as PSTN (Public Switched Telephone Network), mobile networks, satellite modem links and so on, as it was recognised that remote locations could be outside the coverage area of traditional communication networks.

Data Integrity

A critical element of any AtoN is data integrity; it is imperative that the information provided to the mariner is correct to ensure trust in the system and to make sure the mariner is not inadvertently guided into danger, rather than away from it. Integrity of the data has been considered by the GLA and a rigorous approach has been taken to ensure that VAtoN data provided to the mariner will be correct. At each point in the data processing chain it is cross checked and it is checked again before the VAtoN unit is activated. Once active, the VAtoN is monitored using a number of monitoring mechanisms to ensure the VAtoN appears in the correct place and conveys the correct information. This process is then repeated on cessation of the VAtoN to ensure it does disappear.

Leisure craft users

It is recognised that small vessels, including leisure craft users, are likely to use Class B AIS onboard their vessels. Depending on the equipment fitted, Class B AIS units may not have a display and therefore may need to be connected to an electronic chart to enable Viatron information to be observed. Assuming the appropriate equipment is in place, the mariner would expect to see a similar mark to those provided in Figures B & 9; however this will depend on the equipment used.

Ongoing Development

Collaboration is ongoing with the manufacturer of the VAtoN unit with a view to commercialising the prototype interface unit; at the time of writing, the unit is being integrated with PSTN and Global System for Mobile communication (GSM) modems. The goal is to develop a generic interface to enable communication using any Hayes-compatible modem. This would facilitate integration of the AtoN unit into the GLA outstation monitoring and control systems and make the solution applicable to a wider market.
The FOUR-YEARLY CONFERENCE of the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) was held from 25 to 31 May in A Coruña, Spain. As the site of the oldest working lighthouse in the world, the Tower of Hercules, this busy port in Galicia made an ideal venue for the conference and attracted a good attendance from all over the world.

The conference was honoured by an address from the Master of Trinity House, HRH The Princess Royal, on the occasion of the 500th anniversary of the founding charter of Trinity House. The theme of the conference, “From Torre de Hercules to e-Navigation and beyond” set the scene for a wide range of presentations, including many at the leading edge of innovation in navigation, as well as a session on the heritage aspects of lighthouses.

Opening session

The keynote address was given by Koji Sekimizu, Secretary General of the International Maritime Organization. He noted that the IMO e-Navigation Strategy Implementation Plan had been finalised and would be considered at the Sub-Committee on Navigation, Communications and Search & Rescue in July and should be approved by Maritime Safety Committee later in the year. The next step would be to make e-Navigation a reality and IALA would have set the scene for a wide range of presentations, including many at the leading edge of innovation in navigation, as well as a session on the heritage aspects of lighthouses.

Aids to navigation provision

The first day started with a presentation entitled “Effective intensity – it is effective!” by Malcolm Nicholson of the General Lighthouse Authorities’ Research and Radiolocation Directorate. This was possibly the most challenging and significant paper in the conference, questioning the basis on which the effectiveness of a light is calculated. Reporting fundamental research on the perception of lights, it was proposed that the length of rectangular profile flashes, such as those from LEDs could be halved, without significantly affecting the impact on the eye. The consequent reduction in energy use could be very important, particular for solar-powered installations. Alternatively, light output could be increased without raising the costs of the supporting infrastructure.

Another important paper described the conversion of light buoys to LED and solar technology by the German Waterways Administration, following a systematic approach that yielded large efficiencies and cost savings.

Malcolm Nicholson followed up his earlier presentation with I 2.0 Explained, which described how the current documentation on the definition and measurement of light had been developed and explaining the purpose and use of each recommendation. A revolutionary design for a new lighthouse on the breakwater of Valencia Harbour was reported. The use of fibre-optic and modular construction was graphically illustrated in an animated video of the building process. A presentation on advances in radar aids to navigation by Paul Mueller of Teekay Signal Corporation, an IALA Industrial Member, reported the results of successful trials on absolute radar positioning carried out by R&RNAY General Lighthouse Authorities in 2013 using THV Alert.

e-Navigation & beyond

The second day began with a report on the ACCSEAS Project by Dr Alwyn Williams, the Project Manager from the CLA. Several novel e-Navigation solutions were described to deal with the challenges facing shipping in the North Sea Region, which include increasing size of vessels, density of traffic and restrictions caused by windfarm. Innovative methods for exchanging information between ships and providing maritime safety information to ships were described, as well as advances in the provision of Resilient Positioning, Navigation and Timing, that underpins the whole of e-Navigation.

A related presentation by Dr Nick Ward of R&RNAY General Lighthouse Authorities and Thomas Christiansen of the Danish Maritime Authority, explained the need for a common Maritime Data Structure to support e-Navigation and described the Maritime Cloud as a promising way to manage and deliver the information. The importance of standardised data product specifications and the use of the IHO S-100 Registry as a data structure framework was emphasised in several other presentations.

Dr Alan Grant of R&RNAY General Lighthouse Authorities reported the results of tests carried out in the Republic of Korea in 2018 the following Trinity House and Trinity House Director of Navigational Requirements, on quantitative risk assessment using the IALA Wayways Risk Analysis Program (IWRAP).

A very topical paper from Link Powell of R&RNAY General Lighthouse Authorities described a Light Measurement of Tower of Hercules Lighthouse, which had been carried out earlier to assess the comparative effectiveness of R&RNAY designed LED array, as potential replacements for the existing light source. A demonstration of the measurement technique had been performed at the lighthouse the previous evening.

Heritage

The final day of the conference saw several presentations on methods of preservation of lighthouse structures and equipment, as well as approaches to the analysis and documentation of their significance in heritage terms.

Council & Assembly

There was a lively debate in the General Assembly on the proposal to transform IALA into an Inter-Governmental Organization. There were strong arguments on both sides, but there was a majority in favour of proceeding with consideration of the plan. Trinity House was re-elected to the Council, as UK National Member, and the Commissioners of Trinity Lights were returned for Ireland. The Deputy Master was re-appointed as IALA Treasurer.

Conclusions

This was a very successful conference, which clearly demonstrated IALA’s important role in producing new solutions as well as optimising use of resources and protecting the heritage and environment for which it has responsibility. This report has highlighted IALA contributions, but the overall standard of work reported was very high and the full report of the conference will be well worth studying.

Postscript

For the period to the next IALA Conference to be held in the Republic of Korea in 2018 the following Trinity House representatives have been nominated to the Committees:

• Aids to Navigation Engineering and Sustainability Committee (ENG), Chairman: Simon Milbey
• ENG Light and Vision Working Group, Chairman: Malcolm Nicholson
• AIFM (Aids to Navigation Requirements and Management (formerly ANM)), Aids to Navigation Requirements Working Group, Chairman: Captain Roger Barker
• e-NAV Positioning, Navigation and Timing (MTT) Working Group, Chairman: Dr Alan Grant
• Legal Advisory Panel (LAP), Vice Chairman: Jon Price

Below: Captain Ian McNaught, Executive Chairman, Trinity House, was elected as Treasurer of IALA. As an innovation this was the first paperless AUA Conference with all documents submitted online.

Above: Gary Price, who has lately renamed IALA as Secretary General, used the Cape Town Conference in 2011 to speak on the achievements of the organisation over ten years. AUA Cordia, 95 years, were presented to a total of 3150 and navigators won over from 42 countries. The gathering viewed the first Conference of Seminar delegates in aspects of planning an aids to navigation and E-Navigation, presented by the IALA World Academy.

Above: The Roses. Telegraphs to the ‘railing’ barge’s THV Alert with non-approved PNT devices (smartphones and tablets). In spite of impressive accuracy, there were dangers involved, in particular lack of integrity and uncertainty provenance of chart data. There were also presentations on the planned Korean Alert. There were also presentations on the planned Korean Alert.

Above: Captain Ian McNaught, Executive Chairman, Trinity House, was elected as Treasurer of IALA. As an innovation this was the first paperless AUA Conference with all documents submitted online.
Much of the media and public interest in Trinity House tends to centre on our lighthouses. This is to be accepted considering their iconic status on the British landscape and their history. However, not publicised so much is the sterling work undertaken by our maritime operations, still affectionately known within Trinity House by the abbreviation SVS (Support Vessel Service). Although in the past this consisted of a large fleet of vessels of various sizes and manned light vessels, today it consists of three vessels with some support from contract vessels and local boats. Between these vessels over 400 navigation buoys (plus in the region of 200 contract buoys) and 12 light vessels are maintained, often in the harshest of weathers and all year round. Work on deck in servicing these buoys is still a form of hard labour rarely seen in modern ships today. For example, a Type 1 plus buoy weighs some 12 tonnes and stands 15 metres from end to end. Lifting them from the water and moving them around requires good seamanship, excellent crane driving and skilful tactical manoeuvring by all on deck. Add a heaving vessel and cross winds into the equation and it is soon realised such heavy lifts requires precise teamwork, particularly as it involves crew members being in close proximity to the buoy, hauling straps and chain. With chain and rope often under high tension, to ensure safety each crew member must know their role and where to be positioned exactly at any point in the operation. Failure can have dire consequences but the procedures are well rehearsed and if you ever get the chance to watch it, these guys make it look easy. Believe me, it isn’t.

Despite such stringent and practiced operational procedures, on 11 January 2013, THV Patricia attended the Bridge buoy in the Solent. The task was to lift it for its annual inspection and effect repairs to its failing communications system, but all did not go to plan. Due to a freak occurrence of a leading line fouling the safety gate on a lifting hook and combined with adverse movement, one lifting strop released, topping this massive buoy onto the deck. Fortunately, only minor cuts and grazes were suffered in effecting evacuation of the area and damage to the deck and buoy was only superficial, but it serves to remind how hazardous this work can be. Such incidents are very rare with health and safety on board Trinity House vessels at a high standard and this can be evidenced by the very low incidence rate.

This high standard is achieved by each vessel regularly reviewing safety systems of work in the form of standard operating procedures (SCPs) and its risk assessments. Where incidents or near misses do occur, these are investigated, SCPs reviewed and adjusted accordingly. Near miss and hazard reporting is encouraged and all employees may either submit reports on paper into letterboxes, or report on line using the new SHE Assure H&S system. Reports may be submitted anonymously, but his rarely occurs as most employees are happy to discuss their observations or findings.

Each watch in each vessel has its own safety officer and a safety committee and meetings are held regularly to discuss health, safety and welfare issues. The minutes are recorded and circulated to shoreside management on every occasion, with a feedback loop for comments and recommendations. All this supported by a small marine operations department and marine superintendents who ensure that all equipment on board is maintained to schedule and to the correct standard. SVS have a proactive approach to health and safety and this has paid dividends over the years in achieving a high standard for the safe and efficient service they provide in maintaining navigational buoys and supporting the lighthouse service.

Since the invention of flashing signal lights, the question of how a flash of light compares with a continuous (‘fixed’ or ‘steady’) light has been pondered. The increase in intensity or efficiency, as a result of focussing or switching the light source, is offset by the fact that a flash of light is not seen so effectively by the observer due to the inertia of human visual perception.

The currently recommended method of quantifying the effects of a flashing light on human visual perception is a photometric quantity called effective intensity which is the fixed light equivalent of a flash of light. The definition of effective intensity intends the flash to be viewed at the threshold of visual perception, but that it is not long enough to fatigue the retina so that it could be used at supra-threshold levels by linking the value of luminance at the observer to a time-constant for visual inertia (often known as a) in the equation for the Blondel-Rey model. Since the term effective intensity has only been used at the threshold of visual perception, it is suggested that the term assigned to perception of a flash above threshold be ‘apparent intensity’. In 2012, the Research and Radar Navigation Directorate of the General Lighthouse Authorities implemented a project aimed at repeating the 1930s experiment of Toulmin-Smith and Green (T-SG) and also the 1960s suggested modifying the Blondel-Rey model for effective intensity so that it could be used at supra-threshold levels by linking the value of luminance at the observer to a time-constant for visual inertia (often known as a) in the equation for the Blondel-Rey model. Since the term effective intensity is only valid at the threshold of visual perception, it is suggested that the term assigned to perception of a flash above threshold be ‘apparent intensity’.

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By studying Figure 5 it can be seen that the Hanworth observers fall into two similarly performing groups, C, L & M in one group and J, I & N in the other. A comparison of an average of the group with the lowest performance, GINP observers, with an average of T-SG observers is shown in Figure 7.

Conclusions
It is clear from results and from observer comments that brightness matching point sources is a difficult visual task. Furthermore, with successive brightness matching the observer has to match the brightness of a point source with his memory of the previously viewed point source. Toulmin-Smith and Green’s results were plausible, but they were achieved with few observers, probably only one observer in some cases. For successive brightness matching of point light sources to be made viable, it seems necessary to select appropriate observers. Observers chosen need to be consistent performers and, with marine aid to navigation safety in mind, they need to have a comparatively slow reaction time to flash perception. There is a distinct difference between results obtained from the lowest performing observers for 0.2 microlux in Hanworth and the currently recommended effective intensity model, Blondel-Rey. The use of the Blondel-Rey model with a +0.2 second seems unduly pessimistic for an observer luminance of 0.2 microlux. Results suggest that for white flashing lights with a rectangular flash profile, a Blondel-Rey formula with a visual time-constant value of a = +0.1 seconds would be a more suitable model for determining the range of a marine aid to navigation light. The impact of using such a model would be to enable the flash duration of lights to be reduced, without reducing the published nominal range. Savings could therefore be made in energy consumption resulting in reduced costs, or longer maintenance or redundancy periods. A reduction in flash duration for solar powered aids to navigation in higher latitudes, such as cardinal buoys that use white LED lights, would substantially improve the winter minimum range. As a general rule of thumb, for flashes up to 0.5 s, the flash durations can be halved to achieve the same nominal range.

Acknowledgements
Dr Peter Rhodes of Leeds University for his valuable insight into the preliminary design of the equipment and conducting the first experiment. Mr Ian Tutt (Retired) for his continued interest in this subject. And for conducting the Hanworth experiment.
It was apparent that by the end of July 1914 diplomacy had failed and once it was clear that Germany would attack France and not respect the neutrality of Belgium, Britain would have to declare war on Germany as she was bound by treaties. We had become party to a world war, the like of which had not been seen before and so ended a period of relative peace that had prevailed since the Crimean War which ended more than half a century before.

Sir Edward Grey, Foreign Secretary on the eve of the First World War may have said: “The lamps are going out all over Europe; we shall not see them lit again in our lifetime” but our lights would frequently be lit for the benefit of Allied seafarers. Let us not forget the huge losses of life in the waters of Sierra Leone, of Malta and the Persian Gulf.

On the outbreak of war Captain (afterwards Vice-Admiral) C R (later Sir George) Mansell, Elder Brother, was appointed by the Admiralty to command and organise Keyham College for the training of special entry naval cadets; he held this appointment until the end of hostilities and from 1916 to 1919 was Deputy Master. For the duration of the war at least one of the Elder Brothers was always on duty at Trinity House, including overnight and on Sundays, in order to deal with emergencies and to carry out any Admiralty requirements.

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Thames Estuary. On removal they were replaced by
buoys marking the channel that had been swept of
vessels, and this was extended from time to time,
at the end of the war this new area was marked
from Dунbar to North Foreland with 206 buoys
being placed up to two miles apart. More than 500
buoys, both lighted and unlighted, with 25,000
fathoms of mooring chain and the necessary sinkers
had to be provided for Admiralty purposes; not only
in use for home waters, but also on the Belgian coast
and in the Baltic mentioned above.

The Steam Vessel Service
Withdrawal of navigation buoys, charging and replacing
buoys in the War Channel, the changing of and
fathom of mooring chain and the necessary sinkers
buoys, both lighted and unlighted, with 25,000
from Dunbar to North Foreland with 205 buoys

GIBBS, William Edward                     Fireman, TH V
GIBBS, Ernest                                    Seaman, TH V
EADES, George Augustus                  Fireman, TH V
Cook, William George                     Fireman, TH V
PRICE-EDDARDS, Owen                  Captain, Royal Fusiliers                            22.06.1916

NAME                                                          RANK                                                                   DATE                  REMARKS
CALVER, Percy R.C.                          Seaman, RN R                                          23.05.1918
ANCELL, Frederick Gordon                Serjeant, Royal Fusiliers                          21.10.1915
MURRAY, James Anderson, RN CVR  Lieutenant-Com mander                          06.12.1917
WILLSON, George Percy                   Lamplighter, Corton LV                            21.06.1916
TUCCER, William George
STEAM VESSEL SERVICE
HEADQUARTERS STAFF

TRIST, Thomas Edward                     Fireman, TH V
Cox, William A                            Senior Fireman, TH V
COCKTON, John                                                                                               15.12.1917
DUDDING, Alfred W.                      Driver                                                        26.09.1915
DUUN, William
BRUHN, Charles Allan                                                                                       09.01.1919
REEDEE, Charles                                Senior Fireman, TH V
REECE, John Basil                              Seaman, TH V
WILLIAM S, Griffith                                                                                             25.02.1916
FLEETCHER, William                                                                                             25.02.1916
EALES, William Charles                                                                                             21.10.1917
WESTHORPE, James                         Fireman, TH V
TRICKER, William James                    Steward, TH V
COCKTON, John                                                                                               15.12.1917

CORPORATION OF TRINITY HOUSE – Roll of Honour 1914 - 1918

NAME                                                          RANK                                                                   DATE                  REMARKS
HALL, Fredrick William                     Steward, TH V
REED, Herbert                                 Steward, TH V
LEWIS, Charles                                  Steward, TH V
HARRIS, William Thomas                      Steward, TH V
NICHOLSON, George Samuel Henry                  Seaman, TH V
YENDERS, William                              Seaman, TH V
DAVIS, William James
BURGESS, William Gerald
BELL, Robert James                            Steward, TH V
WINTON, William James
MADDEN, John                                    12.07.1917
REED, John........................................................................... 12.07.1917

Top right: No-68 lightvessel at the South Goolands station
Of composite construction the hull was 7000 hp deep overall
and the light was 45 feet above the waterline.
Above left: No 68 lightvessel at the Seven Stones station, built
in 1901 to an example of a class that served Trinity House well in
the first half of the 20th century and notably, through
both world wars.
Above right: Lady Patricia, built in 1908 by Thornycroft of
Sheffield for Lord Leuchars of Findhorn. The
1907 cruiser still stands as a reminder of the
Compass House’s role at the First World War.
Main Picture: TH V Patricia is a reminders
Ideal and rare here at the Jubilee
Here is a brief selection of photos of the staff, family and friends of Trinity House taking part in the many activities that celebrated our 500th anniversary year.
The Trinity House Charities

For regular readers of Flash it will come as no surprise to learn that the charitable activities of the Corporation of Trinity House were enshrined in its original charter of 1514; and in various guises the Corporation has been seeking to support needy and "derelict" mariners and their dependants ever since. What may not be so well known is that at the time the charter was granted by Henry VIII the Fraternity of Shipmen, that became the Corporation, already had a Hall and a number of Almshouses adjacent to the church of St Nicholas in Deptford. Thus it could be said that the Corporation is the oldest maritime charity to be in continuous existence in the country.

So five hundred plus years later what has happened? Well it is fair to say the charity has grown, originally it seems to have operated very locally providing almshouse accommodation, but its work spread geographically, to cover mariners in the Thames and it seems to have operated very locally providing for those in need; so the charity began to pay pensions, or annuities, to those needing help but who could not be given a house. Indeed, during the Napoleonic Wars this extended to the provision of a widow's pension to the wives of seamen who volunteered from London for the Royal Navy but had the misfortune to be killed whilst on active service. In the Corporation's archives there is a letter from Nelson asking the Elder Brethren to provide just such a pension for the wife of one of the ship's company of HMS Agamemnon, Edward Lord. (See opposite page column 1).

Today the Corporation comprises two charities. The Corporation of Trinity House itself and a subsidiary charity the Trinity House Maritime Charity (THMC). The dry core details of these charities may be found on the Charity Commission's website at www.charitycommission.gov.uk.

However, to put flesh on these bones the original charity (the Corporation itself) is governed by its many Royal Charters and has a broad maritime remit. This includes the custody and maintenance of the Trinity House building on Tower Hill as part of our heritage. To help fund this the public rooms of Trinity House are let out commercially and this goes a good way to meet the building’s costs. In addition this charity can make small grants in support of maritime charitable need. It also runs the examination and licensing of Deep Sea Pilots and provides Accession to the English Admiralty Court, the pre-eminent maritime court in the world.

The THMC is a combination of many smaller maritime charities that were previously administered individually by the Corporation’s Corporate Department. The details of these charities are contained in the book of bequests; currently on display at the Trinity House exhibition at the National Maritime Museum.

The THMC is dedicated to the provision of the Corporation’s Almshouse accommodation in Kent, annuities and support of charities and organisations that provide for: Maritime training and education Safety and welfare of mariners Safety of fishing Receiving the need of mariners, former mariners, their families and dependants

To fulfil these objectives it supports a number of key front line maritime charities, such as the Shipwrecked Mariners’ Society, with regular annual grants to the extent of a £1 million pounds each year. It also runs an own scholarship scheme to train officers for the Merchant Navy, around thirty cadets a year, and the large yacht industry, six cadets annually. It then also provides ad hoc grants to those maritime charities that have a need to fund a one off project or have to meet unexpected demand for their services.

A recent example of the latter is the support given to the Fishermen’s Mission in the wake of last winter’s storms, which caused much hardship to the UK’s fishermen and their families. To help the Mission cope with this sudden influx of need the THMC made grants to the Mission totalling £100,000.

All in all, the combination of these charitable actions means that the charity has a charitable spend of between £4M and £5M annually. This spend is financed through investments and the income from three farms. Of these income streams the former farm, situated in Borough (then Wapping Butts), in London is the most productive. No longer producing crops it provides the charity with the rents from some 400 residences (one bedroom flats to five bedroom houses) and around twenty commercial properties, to the tune of £5M per annum.

In addition, to these regular activities the THMC has also been involved in some significant charitable projects to mark the quincentenary. The first of these was to provide the bulk of the funding towards the construction of an accommodation and facilities hub at Mariners’ Park on the Mersey. The Park provides housing and care for needy mariners and their dependants and is managed by the Nautilus Welfare Fund and has been running for over 155 years. The new building known as the Trinity House Hub was opened by HRH The Princess Royal, Master of Trinity House, in April this year.

The second project has been a joint one with the Trinity House Fraternity to redevelop the RNLI Boat-house at Ramsgate so that it can accommodate the larger Atlantic 80 boats. This project was opened by the Master on 10 October.

Finally, the THMC is working with the Sailors’ Children’s Society to help reach out to the children and families of seafarers in need, who might otherwise be unaware of the support that is available to them. It is therefore with some sense of achievement that the Corporation can look forward to the second half millennium of its work as a charity.
Over 100,000 trainees have sailed 1.9 million miles making of me – I wouldn’t be a naval architect if it hadn’t been for my voyage in a few comments we hear regularly said Chris Law, Chief Executive of the Tall Ships Youth Trust (formerly the Sail Training Association). Formed in 1956, the Trust is one of the world’s oldest and largest sail training charities dedicated to the personal development of young people aged 12 to 25.

Each year, over 3,000 sail with the Trust with 70% of the young people disadvantaged and disabled. For most, it is an unforgettably experience. Vikki, Youth Work Manager said: “The voyage was a life-learning opportunity for the young people. It stretched and challenged them like no other residential

outdoor experience I have used before. It was a unique experience which had a significant impact on them. The young people said they had learnt about respect and responsibility, how to listen and to understand other people’s points of view, how to work in a team and how to deal with conflict. These lessons will stay with them for the rest of their lives.”

Emma, mother of Stewart (12) reflected: “Stewart has special needs and was very nervous about the voyage but from the second he stepped on board I knew it was going to be a very positive experience for him. The crew were on top of their way to make him feel welcome. I’ve seen a real change in him. He has grown in confidence, is more willing to take on new challenges and has not stopped talking about it.”

Typically, a voyage is a week long though there are also short, taster voyages. The maximum complement of the Brig is 68, 18 in the Challengers and 10 in the Cat and the Ketch. Within these, there are 48 voyage crew berths in the Brig, 12 in the Challengers, 8 in the Cat and the Ketch.

In addition to the young people, there is a small complement of permanent crew supported by a team of experienced volunteers. These come from a pool of some 1,500 regular volunteers, all of whom have sailed and been recommended by the permanent crew. Around 20% of trainees return as volunteers.

Volunteers donated over 108,000 hours to the Trust in 2013/2014.

“ar to keep the ships operating and filled all volunteer positions are available to the ‘young at heart’ up to the age of 80. As David (63) says: “I was a lifework to sail on a square rigged ship. Both the permanent and volunteer crew were so organised and professional. Every task was explained in a friendly way.”

Waypoints in life

For most young people, a Trust voyage is a turning point. Living, working and eating together in such an environment young people don’t just learn about life at sea. They learn about life itself. From the minute they step on board, young people work in watches, taking responsibility for themselves and others. Tasks include setting and striking sails, helming, rope work, anchoring, navigation, meteorology, cleaning and maintenance, food preparation and galley work.

As a result, while on board young people develop a wide range of skills relevant to all aspects of their everyday lives including self-reliance, communication, problem solving, decision making, team working, leadership, teamwork and social skills, awareness of health and safety. Their self-esteem soars and they learn that the more they put into a task, the more they get out of it.

Nikki (20): “At the age of 13 I was an alcoholic – by 16 I was homeless. I caused so many problems that my local youth group banned me from their premises. Today – at 20 – I’m a youth worker at the very same group. The key turning point was my voyage – it took me away from my home environment - a light just went on in my head and I though that’s it. I’m more drink for me.”

Today the Trust remains a world leader in developing young people to their potential. Based on the philosophy that every young person is of benefit to all, they come from a total cross section of society with the Trust providing bursaries to those who otherwise wouldn’t be able to afford a voyage. This generates a group of young people who would never have met on land and who have a unique opportunity to learn about and from each other.

Trust voyages have a significant impact on young people’s lives. Externally validated statistics show that after a voyage, 95% have increased self-esteem, 90% are better team players, 80% better communicators and 70% have improved problem solving skills. These are all skills which raise young people’s expectations and increase their employability.

Mike (20): commented: “I’m shy and find it hard to make friends but I gained so much confidence from the voyage – it gave me the push to go after the job that really wanted. I’m also going to sail with the Trust as a volunteer.”

Recent initiatives have included voyages for young people with Special Needs, Tall Ships Academy (training route from first experience to MCA Yacht Rating), Sail for Heroes® and multi-cultural, multi-faith diversity voyages.

Earlier this year the Trust launched a new UK-wide initiative for NEETs (young people not in employment, education or training). The Trust’s voyages were seen as a key catalyst for changes in young people’s attitudes and skills during the six month intervention with an exceptional 97% going into employment, education or training.

Help needed

“The Trust changes young people’s lives for the better,” said Chief Executive Chris Law. “But it is not easy. We are very proud of the high quality sail training experience we offer young people but it costs money to maintain the vessels to the highest safety standards and we are totally dependent on donations to continue our work.”

If you would like to help by making a donation or booking a voyage – go to www.tallships.org or phone their Head Office on 02792 832055 – and if you’ve sailed with them in the past but since lost touch, please make contact again. They’d love to hear from you.”
Who we are and what do we do?

Though the Danish Maritime Authority (DMA) is a rather new institution, with a mere 26 years of exercising public authority under its belt, the Danish maritime sector, including aids to navigation, has been regulated by the state as far back as 1567 when King Frederik II introduced maritime law. Back then, in maritime law’s fledgling youth, keelhauling was among the selection of punishments the unfortunate seafarer could be subject to. Many things – including the regulatory instruments – have changed since then. However, the importance of shipping and the maritime sector as a whole in the Danish economy, history and culture has not. Today, Danish shipowners and shipping companies are among the world’s largest operators of foreign gross tonnage in the world and Danish maritime companies account for almost a quarter of Danish exports with a total production of approximately DKK 260 billion (£27 billion), corresponding to almost 9% of overall production in Denmark.

The maritime sector is a great source of prosperity. But it also presents a number of great challenges in terms of aids to navigation. Amongst these are Greenland’s vast and inhospitable coastline and the straits that are heavily trafficked or navigable only with difficulty: the Sound and the Great Belt. It is among the DMA’s main tasks to take active and effective measures against these challenges. However, we have other obligations besides those associated with aids to navigation.

The DMA is a government agency under the Ministry of Business and Growth. It consists of the central authority, eight survey offices, including the office in Nuuk, Greenland, the Centre of Maritime Health and Safety on the island of Fanø and two maintenance and service centres.

Maritime tasks are mainly distributed between the Ministry of Defence and the DMA. Our field of responsibility covers the shipping industry and its framework conditions, the ship and its crew and the waterways. Our responsibility as a government agency applies both to the merchant fleet and the fishing industry. The surveillance of Danish waters and of civilian shipping, sovereignty enforcement, the police authority, pollution prevention, environmental surveillance, ice-breaking, etc., are the responsibility of the Ministry of Defence.

Aids to navigation are the largest item on the overall budget. Around 50% is spent on buoys, lighthouses, radio transmitters, maintenance and servicing. The DMA operates a total of 1124 floating aids to navigation, 284 lighthouses, 4 DGPS stations, 50 racors, a Loran-C station, 2 buoy tenders and 2 maintenance and service centres. Due to the geographic scope of the Danish realm, many lighthouses and buoys are situated in remote and difficult-to-reach locations. Two examples are the lighthouses on Mykines Holm and Fuglø, respectively, in the Faroe Islands. Bispen Lighthouse at Fuglø is so difficult to reach that inspections can be carried out for only a few days each year.

Heavy, trafficked straits, and a vast coast

The tasks related to aids to navigation are extensive.
and diverse. However, two tasks stand out. Firstly, the Kingdom of Denmark has one of the longest straits characterised by dense traffic. A good example of the use of AIS in Danish waters is at Harter Rev, situated on the route "Tango" that passes through the Great Belt.

For a number of years, there was a series of groundings on the north side of Harter Rev. The route crosses a sharp bend of approximately 60 degrees. As a consequence, some ships relatively often ran aground.

The establishment of the land-based AIS system revealed the ships' sailing patterns and as a preventive measure, five yellow special buoys were placed on the north side of the fairway in 2005. Not a single ship has run aground since then.

Greenland's vast and inhospitable coastline is a second challenge. The future of the waters surrounding Greenland and the Arctic in general is characterized by both great opportunities and great challenges, which all have a knock-on effect on the way we think and regulate aids to navigation.

Climate changes have changed the opportunities available in the Arctic. Possibilities within primarily mining and transit, but also within the cruise industry, are emerging between the cracks in the thawing ice. However, the Arctic is a region where traditional aids to navigation are not significantly greater here than elsewhere, but due to the remoteness of the region and the hostile environment it is difficult to reach for rescuers, making the consequence of accidents high. The lack of international regulation does not mean there is an institutional vacuum in Greenland's waterways in terms of aids to navigation. The number of cruise liners sailing in Greenlandian waters has been increasing for a long period, and the DMA is ready for this scenario with heaver traffic. The International Maritime Organization's Polar Code and new national regulation are underway in collaboration with Greenland. Furthermore, the DMA has launched the information system known as ArcticWeb in order to enhance safety of navigation in the region. ArcticWeb was launched on 1 January this year. It gathers information about navigation in the waters around Greenland from different authorities. From the ships' own recording of planned routes, ArcticWeb can provide an overview of the position and expected response to other ships and show current ice charts, weather, navigational warnings, etc. Ships are thus better able to carry out risk assessments as well as plan and coordinate their voyages. Furthermore, the DMA and the Ministry of Defence continue to strengthen the monitoring of the ship traffic in the Arctic.

New ways of thinking aids to navigation

On 25 February 2017, a satellite was launched in collaboration between the DMA and the University of Aalborg. The satellite receives AIS signals, thus extending the land-based system and thereby strengthening safety of navigation in outer waters. Not only do we collaborate with academia, the private sector is also an important partner. In a globalized world, the competition among the major shipping companies toughens. As a result, aids to navigation have become a competitive factor.

The collaboration between the DMA on the one hand and the University of Aalborg and the private sector on the other represents a new way of aiding to navigation thinking. However, we still have an eye for traditional regulatory tools. This spring past has been characterized by a liberalization of the pilotage service. The liberalization aims to drive the prices of piloting in Danish waters down, thereby further encouraging the use of pilots.

The future within aids to navigation is characterised by integration of traditional tools of regulation as well as new ones, such as collaboration with academia and the private sector. These collaborations force us to take on new perspectives. New perspectives which are critical for solving the difficulties faced by safety of navigation.

AIS is a revolution within aids to navigation, but the system will not be replacing buoys and lighthouses entirely. However, the buoys and lighthouses themselves have – partly driven by a desire to minimize cost, partly due to environmental concerns – gone through a tremendous development in recent years. Nonetheless, traditional means of aids to navigation – especially lighthouses – have become a part of local communities' culture and history. One example is lighthouses with revolving optics with mercury bath systems. The lighthouses could be replaced with modern, non-revolving, alternatives, but the revolving optics have a significant cultural value. In collaboration with the Technical University of Denmark, the DMA has re-designed the system, thereby maintaining the revolving optics, avoiding environmental issues related to mercury and minimizing energy consumption.

Navigation is another example of the measures belonging to the future of aids to navigation. e-Navigation gathers information relevant to the individual ship's current route, is designed to make navigation safer and easier and is seen by many as somewhat of a revolution. The DMA has been working with e-Navigation for some years now. The strength of the system lies in its ability to coordinate and sort relevant information to the ship, thereby minimizing sources of error – especially human ones. e-Navigation not only minimizes error, the system makes it far easier for ships to report to local and international authorities as well.

The DMA in IALA

Shipping and the maritime sector in general have always been – and continues to be – international in nature. Now, regulation of the sector is also becoming more and more international, including aids to navigation. Hence, the importance of international fora, such as the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA), is increasing.

IALA is currently undergoing radical institutional changes. At the IALA Assembly in A Coruña in May this year the Assembly agreed on a milestone Resolution on the future organisational change for IALA. Denmark believes that this is a very important step for the organisation. The adoption of an international convention allows for IALA to be established as an intergovernmental organisation in line with, for example, the International Hydrographic Organization (IHO). The convention will determine IALA's framework conditions, its purpose, members, general assembly and so forth. Thus, the convention will replace today's rather informal agreement on IALA's work.

The adoption of the convention would enable IALA to lay down internationally binding standards, thereby enhancing harmonisation of standards and safety and protection of the marine environment and increasing the efficiency of the work on international legislation in the area.

Although the changes within aids to navigation – in Danish as well as an international context – are somewhat constant, the measures taken to meet them are not. IALA's institutional changes and the prospects of digital intelligent systems, such as AIS and e-Navigation, make the DMA see a bright future for safety of navigation.
An introduction to IHMA

The International Harbour Masters’ Association was established in 1996 and evolved from a number of European associations. By virtue of their role, harbour masters have often found themselves geographically isolated and have looked to neighbouring harbour masters for advice and support. The Finnish Harbour Masters’ Association established in 1936 is probably the oldest European national association and perhaps the world, followed by the Dutch in 1949, the Belgians in 1971, the French in 1992, the United Kingdom in 1993, and the German and Polish Associations in 1994.

Harbour masters of the major ports of North-West Europe began to meet from the 1950s and in the latter half of the twentieth century, influenced by the development of international legislation, harbour masters recognised that while their ports might vary greatly in size, operation and structure, there was no commonly accepted definition of the harbour master’s role and that a wide-ranging review of the functions performed by harbour masters and port captains around the world led to the IHMA’s definition of eligibility for membership, based on meeting one or more of four criteria: jurisdiction is exercised over the water frontage or water area of a port or port approach; a legal and/or operational responsibility for the movement of shipping may be involved, in undertaking their role they possess an authority conferred on them by law, regulations or rules; there is significant involvement in ensuring that port or marine operations within the area of their jurisdiction are carried out safely, securely, efficiently and in an environmentally sound manner.

The question of suitable qualifications for harbour masters is often discussed. The answer used to be a Master’s Foreign Going Certificate of Competency and this qualification is still at the forefront of most port authorities’ minds when who produce the person specification for the recruitment process. However, in the UK and elsewhere the traditional recruitment port of Merchant Marine and Navy has contracted and at the same time, the harbour master has found him or herself taking on responsibilities beyond the marine technical and statutory role. IHMA has responded to this change through its endorsement of the International Diploma for Harbour Masters, a course which covers marine operations underpinned by a safety management system, finance, environment, pilotage, vessel traffic services (VTS), port security, emergency management, marketing, indeed every aspect of the modern manager’s portfolio and is a recognised route to MBA (Harbour Master) delivered by Middlesex University, London. IHMA has also worked closely with the Nautical Institute on its recently updated third edition of The Work of the Harbour Master.

As a relatively small association with just over 230 members from around the world, and with particular concentrations in Europe, South Africa, Canada and Australia, the Association is keen to continue to welcome new members who can benefit from a strong and supportive network of professionals who want to share their experiences and good practice, not least at the ever popular biennial Congress.

This year’s congress held in Bruges at the invitation of the ports of Ghent and Zeebrugge reflected current harbour master interests on the theme of safe port entry.

It included updates on the latest information technology assisting assessment and promulgation of port information, harbour master perspectives on liquefied natural gas (LNG) bunkering, safe anchorage and mooring developments, emerging trends in VTS, risk and crisis management including consideration of places of refuge.

The European Harbour Masters’ Committee, a regional sub-committee of IHMA, is active in a number of European projects and the IHMA’s governing council responds to members’ interests with its support for work on nautical port information, which currently includes co-operation with the UK Hydrographic Office on the development of web-based port information systems validated by harbour masters, and resources to help assist harbour masters manage requests for a place of refuge.

IHMA works closely with its sister organisation IALA where it is represented on the VTS Committee, and is participating on work led by PANIC, the International Navigation Association, related to sustainability and environmental risk management of port infrastructure projects. IHMA values its Consultative status as a Non-Governmental organisation at IMO participating on issues related to the ship-shore interface.

Members of IHMA occupy positions in the largest and busiest ports in the world and they place high value on the support of their fellow harbour masters. They enjoy each other’s company, openly share their successes and difficulties and are keen to work with sister organisations (including the pilots). As IHMA’s most recently elected President, Captain Kevin Richardson, retired Chief Harbour Master of Dover said, his personal maxim while working at the world’s busiest ro-ro port was “Keep it moving...but keep it safe.” IHMA continues to support harbour masters keep their ports safe as they perform a role that is vital for the world’s international trading patterns and economic dynamism.

Acknowledgements

Captain Rinze K. Maat, Port Technology International, 2014

Lyn John, Rebecca and the Harbour Master, Llanelli Community Heritage, 2014.
WE TAKE A LOOK at some of the museums and galleries up and down the country and report how they are commemorating this important centenary.

The National Portrait Gallery

An impressive, recently conserved portrait of First World War naval officers is now on display in Room 32 at the National Portrait Gallery for the first time since the 1960s. Through a successful public appeal in 2013, £250,000 was raised for essential conservation work on the large-scale painting, allowing it to go on rare public display as part of the gallery’s programme commemorating the First World War centenary.

Measuring over five metres in length, Sir Arthur Stockdale Cope’s grand group portrait Naval Officers of World War I (1921) is set in the Admiralty Boardroom, Whitehall, and comprises twenty-two portraits of the navy’s most senior figures. It has been in storage for over fifty years due to its delicate condition which had made it unfit for public display.

Following the success of the public fundraising appeal to restore the portrait, conservation work has taken place on the painting, and its huge original frame, over a five-month period. Such is its size, a narrow entrance had to be created in the wall of the National Portrait Gallery’s framing studio to allow the enormous frame to be passed into the studio in four separate parts. The vast canvas was carefully rolled into a cylinder so that it could be transported into the gallery before being stretched and assembled onsite.

The careful removal of discoloured varnish and surface dirt that had built up on the canvas over many years has transformed the painting’s appearance, revealing once more the tones in colour and subtle details that were previously masked from view. After being painstakingly cleaned, parts of the frame were re-built in-areas, and its gilded surface has been restored using historically faithful techniques and materials.

Shortly after the First World War, the leading financiers and public servant Sir Abraham Bailey decided to commission three group portraits to commemorate the role of the army, the navy and the financiers. Sir Henry Cope was one of the financiers represented.

A superb model of a 55-foot coastal motor boat (CMB) of 1917, built by a variety of companies throughout the First World War. This model shows an early version of the CMB, which was developed to provide rapid replacement of the losses caused by German submarines in the First World War. A large number of merchantmen were built on a standard design. These workhorses of the world’s oceans were heavily armed, protecting individually the merchant ships against U-boat attack. The boat is fitted with a 1.8-inch gun, which was the characteristic gun of the early CMBs. The model represents a crew of four, the crew consists of two gunners and two oarsmen. The boat is fitted with a V-shaped keel for protection against U-boat attack. The model is shown on top of a special stand, which enables the model to be viewed from all sides. The model is part of the ‘Forgotten Fighters: The First World War at Sea’ exhibition at the National Maritime Museum, Greenwich.

National Maritime Museum, Greenwich

Forgotten Fighters: The First World War at Sea Currenty running to November 2018

This explores the naval and maritime dimensions of the conflict. Whereas the horrors of the Western Front dominated the nation’s understanding of those years, and yet the war at sea was fought on an epic scale and with terrible human loss. Here are the personal stories of those who participated through a wide range of objects including weaponry, photographs, films, ships and model vessels and the visitor is introduced to the heritage of merchantmen to the shattering realities of naval battle, and from the

Falkland Islands and the Mediterranean to the Atlantic and the North Sea.

The Royal Navy and the Merchant Navy were responsible for the protection of the nation’s trade and communications network that was vital for its survival. Without the efforts of those brave sailors, supplies and reinforcements could not have reached the soldiers in the trenches, and Britain would not have received the food and raw materials on which the nation depended. The Royal Navy was at the forefront of new technologies in the form of submarines and aircraft during the First World War, neither of which had played a major part in conflicts. The number of Royal Navy ships personnel grew to 55,000 from its humble beginnings of fewer than 1000, involved in the spotting and attacking of German targets on land and at sea. Beneath the waves, German U-boats posed an increasing threat throughout the war, and yet for both British and German submarines, accidents and mechanical failures were often as hazardous as enemy attack. Fighting for the Royal Navy also spilled onto the land, with thousands of reservists and volunteers serving, as part of the Royal Naval Division. From 1916 through to the end of the war, the Royal Naval Division fought alongside its comrades in arms on the Western Front, where their casualties made up a large proportion of the navy’s losses.

A square model of a 55-foot coastal motor boat (CMB) of 1917, built by a variety companies throughout the First World War. These ships were developed to provide rapid replacement of the losses caused by German U-boats. The Royal Navy used them in large numbers, primarily against German U-boats. The model is shown on a special stand, which enables the model to be viewed from all sides. The model is part of the ‘Forgotten Fighters: The First World War at Sea’ exhibition at the National Maritime Museum, Greenwich.
Chatham Historic Dockyard
Loss & Sacrifice: Chatham, The Royal Navy and the War at Sea

A thought provoking and emotive exhibition, revealing the role played by Chatham Dockyard, its workers and the Chatham Division of the Royal Navy commemorates the centenary of the outbreak of the First World War. This runs until 30 November and introduces the long years of valour, loss and sacrifice depicted using first-hand accounts, personal effects and poignant items including paintings, pictures and poetry. All are drawn from the national collections of Imperial War Museums and the National Maritime Museum, complemented with previously unseen items from The Historic Dockyard Chatham’s own collection.

Particular attention has been given to the loss of three Royal Navy cruisers: HMS Abukir, Hogue and Cressy were sunk by enemy submarine action on 22 September 1914 with a loss of life of 1,459. The exhibition shows brilliantly how technologies were quickly developed to fight against this new type of warfare; challenging a navy that had not been seriously threatened in Home Waters since the end of the Napoleonic Wars. The First World War is often thought of in terms of mainly trench warfare. However, this was not the case. Britain’s war was fought on a number of fronts – the war at sea being one of them.

Merseyside Maritime Museum, Liverpool
Lying in Canning Ditch Dock, opposite the Museum of Liverpool is the port’s former pilot cutter Edmund Gardner which has been treated by artist Carlos Cruz-Diez to demonstrate dazzle camouflage so common on ships in both world wars and introduced in the Great War. Work was carried out by painters from Cammell Laird and the cutter now bears the title Induction Chromatique A Double Fréquence pour l’Edmund Gardner Ship / Liverpool, Paris, 2014.

Dazzle camouflage used a painting technique introduced during the First World War. Contracting stripes and curves create an optical illusion that break up a ship’s shape and obscure its movement in the water, making it difficult for enemy submarines to identify and destroy.

Painted in bright colours and a sharp patchwork design of interlocking shapes, the spectacular dazzle style was heavily indebted to Cubist art. The inventor of dazzle painting, Norman Wilkinson, was influenced by avant-garde British painters such as Wyndham Lewis and David Bomberg. Edmund Gardner will be returned to her original livery in late 2015.

National Maritime Museum of the Royal Navy, Portsmouth
in Portsmouth’s Historic Dockyard, where lie Nelson’s Victory and the preserved Victorian warship Warrner to be found the monitor MJ3 which served in the Dardanelles campaign. Racing to War
The Royal Navy and 1914 is the Museum’s new major temporary exhibition devoted to the outbreak of the First World War and charts Britain’s naval history from its triumph in the Anglo-German naval arms race – one of the several intertwined causes of the outbreak of the war. It continues by illustrating how the Royal Navy was instrumental in the building of the Grand Fleet and looks at influential personalities such as Sir John Fisher (First Sea Lord and considered one of the most important figures in British naval history).

In the Museum’s permanent galleries is displayed HMS He or My Story revealing one hundred years, one thousand stories, one Royal Navy in telling the many unknown and undiscovered stories from the ordinary men, women and ships that have shaped the Navy’s astonishing history over the last century in an effort to bringing visitors closer than ever before to the real Royal Navy. Here there is the 4-inch gun from HMS Lance, which fired the first British shot of the war on 5 August 1914. This is shown with unpublished love letters from a serving Chief Stoker of the period, the first public display of Admiral Crutchley’s Victoria Cross, oral testimonies and more.

Imperial War Museum, London
New First World War galleries were unveiled here in August as part of IWM’s plans to transform its flagship branch during the national commemoration and thereby enabling much more of the museum’s world renowned First World War collections, including art, film, sound recordings and photographs as well as larger exhibits to be seen. These galleries play a major part in our national commemorations of a war that claimed the lives of 16 million people across the globe and had an impact on the lives of millions more.

Visitors can appreciate the story of the war through the eyes of people in Britain and its empire, both on the home front and the fighting fronts. They will see how the war started, why it continued, how the Allies won and its global impact. This £40 million transformation has been made possible with the support of a number of funders, sponsors, trusts, foundations and individuals, including a grant of £6.5 million from the Heritage Lottery Fund and £5 million from the Department of Culture, Media and Sport.

Stepping into the Galleries visitors are introduced to Britain at the turn of the 20th century, a maritime power dependent upon its empire, seaborne trade and the mighty Royal Navy to protect that trade. In addition the tensions and rivalries that were developing in Europe are introduced, and crucially, as the crisis of summer 1914 led to war, this exhibition shows why Britain felt it had to fight. Visitors can explore the war at sea and campaigns in the Middle East, Africa and Gallipoli, is dominated by the naval gun from HMS Chester at which young Jack Cornwell VC was mortally wounded in the Battle of Jutland.

Sea City Southampton
Hamphire’s contribution to the First World War is revealed in a new major exhibition at SeaCity Museum, Southampton, highlighting the port’s crucial role in the conflict and running to next January. Southampton was the main port of military embarkation with over eight million troops embarking over the four years of the war. Hampshire became the muster point for these soldiers and huge camps were formed in and around Southampton, Winchester and Basingstoke. In addition to the departing troops the county also saw a steady flow of refugees, prisoners-of-war and over one million wounded coming back to England.

The exhibition explores the impact on the lives of local people and businesses during this extraordinary time and follows soldiers’ journeys through the county before embarking through the port to go overseas.

Exhibits include a recreated dock scene which attempts to bring the wartime what to life. The bell from Mauretania, a fine ocean liner of her day, which went on to serve as a troopship and hospital ship during the War is also shown.

National Maritime Museum Cornwall, Falmouth
Here a new commemorative case has been installed and which over the next five years will show items in the museum’s collections from the First World War. Among the first items to go on display are a beaded snake which was made by a Turkish prisoner of war in 1918 and souvenirs belonging to a crew member on board the four-masted barque Andromeda, which was wrecked on the rocks off Killigerran Head near Falmouth in 1915.

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FLASH Winter 2014 Page 37
This year the Royal Marines celebrated 350 years since their founding in 1664 and together with our own celebrations of 500 years of sportsmen of the two services met on the field of play on two occasions. The away match was held at Winchcombe and the home game took place at Frinton on 7 August.

Joe Robinson writes:
For the second time this year the Trinity Taverners took to the cricket field against the Royal Marines, hoping to gain revenge for their narrow defeat earlier in the year. At the pleasant surroundings of Frinton, given the superb-looking wicket and the warm weather, the Taverners were delighted to win the toss and bat first. Will Cole and Jerry Wedge were our openers, and steadily gained runs against some decent but not overwhelming bowling, before Cole was well caught for 16. This bought Lieutenant-Colonel Cliff Dare for four on the first innings. After a superb lunch, Greaves returned to bat and took the final wicket, that of Colonel Dare, to complete victory for the Trinity House team. It was a superb day, aided by good weather and good hospitality, and a fitting tribute to the respective anniversaries of both organisations. A big thank you to those who helped organise, both before and on the day itself.

He retired after reaching his century, followed an over later by Wedge, who suffered an ankle injury and retired for 39. Mike Jones and Martin Bransby continued adding runs, and when Bransby was out, Malcolm Nicholson joined Jones in a partnership that lasted for the rest of the innings. Jones was sedate until near the end of the innings, where he blasted three consecutive sixes. Jones was on 46 and Nicholson 27 when the Taverners called a close to the game, having made 283.

The Royal Marines’ reply began slowly, with their opener caught down the leg side by a tumbling Bransby, before Richard Nunn clean bowled the number three. However, either side of tea the Marines launched a counter offensive through the technically correct play of Wiseman and the outright force of Oram. Catches were dropped, swes hit and the Taverners were suddenly in a spot of bother.

Any hopes of a Marine victory were then extinguished by Lewis Cattow, whose left arm spin dismissed both. Another brief rally was again ended by Cattow, and, with the Taverners now folding, much catches were now beginning to stick and stops were being made, including a tumbling one by Sir Jeremy. The Marines could still hope for a draw, but Cattow continued to spin his web, taking seven wickets in all. His sixth, saw John, a local favourite with the Frinton fans after the Marines arrived early a day at the ground and spent the rest of it getting to know the locals, blasted a near certain six, only for Jones to run backwards and catch the ball magnificently over his head – a piece of skill worth seeing in any cricket match. With one wicket needed for victory, Taverners captain Pat Patel returned to bowl and took the final wicket, that of Colonel Dare, to complete victory for the Trinity House team. It was a superb day, aided by good weather and good hospitality, and a fitting tribute to the respective anniversaries of both organisations. A big thank you to those who helped organise, both before and on the day itself.

Commodore Bill Walworth was sworn in as an Elder Brother on 3 September. He served as a Cadet and Junior officer with the RFA Tanker Company before joining the Royal Fleet Auxiliary in 1979. He served in a number of sea appointments, on training courses and in RFA HQ posts before taking his first command in 1994. Further command and Headquarters Management Roles followed until in 2002 he attended the Higher Command Staff Course and subsequently became Director of Operations for the RFA. In 2004 he was loaned to the UK Maritime Battlestaff to develop the UK policy for Joint Logistic Support to the NATO Response Force, before command of Fort Victoria. In 2008 he was appointed Head of the RFA Service in the rank of Commodore (known as COsRFA) and Assistant Chief of Staff (Air) Support to Commander-in-Chief Fleet, responsible for the manpower and ships of the RFA and the associated budgets. He retired from the RFA in January 2014 after five years as COsRFA.

During his time in post, management of procurement and capability was devolved to the Front Line Commands and he became responsible for capital expenditure as well as in year resources for the RFA. He was a director of the Chamber of Shipping of the UK during this period, taking a leading role in the Shipping Defence Advisory Council: His appointment as Commodore included a Treasury-driven review into the RFA and the Security and Defence Review of 2010, with the associated financial challenges. He led reduction of the RFA costs by 10% during a period of high operational activity worldwide and counter piracy in the Indian Ocean.

In 2011 he chaired a review of MOD civilian personnel with naval qualifications, which led to a Departmental change in the introduction of the Maritime Specialist Service (MMSS), a departmental skills alliance. He became head of service and skills champion. The new service included naval base port authorisations, personnel, police, operators, pilots, salvage and mooring personnel and boating. He was a member of the Dockyard Board.

He is a serving mariner (still current), has served with a number of MOD and government courses and is a qualified programme manager. A trustee of the Marine Society & Sae Cadets, he chairs the Merchant Navy Liaison Committee, the Royal Navy Association, the Commodity-Merchant-Holiday-School, a charitable residential school for children with special needs in Somerset. He is chair of the Maritime Skills Alliance and shortly takes up an appointment as Clerk to the Worshipful Company of Fuellers. He was for some years the Nautical Institute representative on the two Trinity House user consultative groups. He is a member of Langstone Sailing Club and Bath Rugby Old Players’ Association and retains a keen interest in Rugby Union and the performing arts. He is president of Langstone Yacht Club.

Commodore David Squire CBE MM RFA retired as Rental Warden of the Corporation at Trinity House this year. At the same time he stepped down from the Trinity House Corporate Board. In May 2005 he was sworn in as an Elder Brother and Assistant and member of the Corporate Board following the retirement of Captain Ian Caby in May 2005. He had been admitted as a Younger Brother in 2001 following a distinguished 35-year career with the Royal Fleet Auxiliary Service from which he retired in 1999, the last five years of which were as Commodore of the RFA.

He joined the RFA on a four-year apprenticeship in 1963 and made his way to become Chief Officer by 1976. A year later he became the first civilian manner to pass the Royal Navy Staff Course at Greenwich. After a succession of command posts he was appointed, in 1987, to the Ministry of Defence as the first RWA Staff Officer in the Directorate of Naval Warfare responsible for operational logistics and aflast support.

After 21 years at the MoD he returned to sea in command of RFA Argus and later RFA Fort George before being promoted to Commodore and Type Commander for the RFA Fleet. In this appointment he was responsible to the Commander-in-Chief Fleet for 22 operationally capable ships, and an annual budget of £380 million and of 19,000 personnel.

Between service with the RFA and Trinity House he remained active in the maritime world. Amongst many appointments, he was Secretary to the Marine Accident Investigators’ International Forum (MAIF) which is an international governmental organisation with observer status at the IMO.

Furthermore, he is a director of Alert!, the International Maritime Human Element Bulletin, published by the Nautical Institute. He is Chairman of the Merchant Navy Training Board, a member of the Council of the RNLI and Deputy Chairman of the RNLI’s Operations Committee. He is a well-known authority on human element and safety of navigation issues, and has written and lectured widely on these subjects.

During his time as an Elder Brother David Squire has managed both the Trinity House Merchant Navy Scholarship Scheme and the Professional Nautical Science Scheme, each of which has enabled young people to take up seafaring careers. These two schemes have seen over 400 train at nautical colleges before going aflast to commence successful careers in the Merchant Navy, as civil service or commissions, or in the world’s fleet of large yachts.

David Squire remains a member of the Examiners’ Committee until the end of the year and away from Trinity House he continues as editor of the journal of the Honourable Company of Master Mariners in HQS Wellington.
**NEW BOOKS**

**Cross Channel & Short Sea Ferries: An Illustrated History**

By Ambrose Greenway (Hardback) Published by Seaford Publishing, 192 pages, ISBN: 9781848832170 Price £24.00

The author, an Elder Brother, is an accomplished scribe and photographer with many shipping titles to his name. This beautifully illustrated hardback is a magnificent collection of over 300 photographs covering the development of the classic cross channel or short sea passenger ferry, often described as a liner in miniature.

From the mid-19th century paddle ferries slowly evolved into screw-driven steamers but it was the advent of the steam turbine and the construction of the railway steamers The Queen and Britannia in 1903 that caught the attention of the shipping industry. Similarly-propelled ships multiplied and their use soon spread to the Antipodes, Japan, the Mediterranean and North America. In 1912 Rudolf Diesel’s new oil engine went onto sea in a cargo ship but it was not until 1925 that it was first employed, to widespread acclaim, in the Danish North Sea packet Paavlenk. In 1934 it made its debut on the English Channel with the Belgian Government’s handsome 2½-knot motor ferry Prins Baudouin.

Increase in car travel from the 1930s led to the development of a car ferry accessed through bow stern doors and the proliferation of these after the Second World War led to the eventual demise of the classic passenger ferry in the 1960s. With its informative introductory texts and abundant photographs and, detailed captions for which the author is renowned, this book will appeal to ship enthusiasts around the world and to all those who mourn the passing of the golden age of the passenger ship.

**A History of Floating Aids to Navigation**

By Adrian H. Willoby (Paperback) Published by IALA-AISM, 82 pages, ISBN: 978-2-910312-01-5 Price €18.00

This handsome 82 page A4 publication is the fruit of 40 years’ work by a professional engineer in the field of marine aids to navigation and fills a space where there is a lack of written history of buoys and early lightvessel engineering. His researches have delivered the year 1295 where the first buoys were mentioned in sailing directions for the Guadalquivir estuary leading to Seville. Others were to be found at Kampern in northern Holland in 1300. Later that century others were recorded in the waters of Texel. More were listed in the 16th century and the necessary buoy tender, of Bremen, was depicted in 1770. The first lightvessels are introduced with that established in 1751 at the Nore station where the Medway joins the Thames Esbury Construction and development of buoys gathered momentum from simple coperage of barrel making to the rolled and riveted steel of later years with which we are all familiar.

The first lighted buoys are described along with experiments of light sources, the development of fog signals, use of electricity, the carriage of radio aids to navigation (even the sparse appearance of the buoy in popular literature receives mention) and the author is encouraged to continue on this course where there is sure to be a ready readership.

Copies are obtainable on application to IALA and may be ordered on the website at: www.iala-asis.org

**IMPA on Pilotage**

By The International Maritime Pilots’ Association (Hardback), Published by The International Maritime Pilots’ Association, 234 pages, ISBN: 978 1 85609 635 5 Price £75.00

For long there have been few books on the subject of maritime pilotage and only one example comes to mind, that published by the Nautical Institute on pilotage and ship handling in 1990 and there are references in other publications such as the IALA Aids to Navigation Manual.

Here we have a valuable work outlining the legal and statutory elements of pilotage, how it is conducted and methods of ship handling along with requirements, training and certification of pilots and even an introduction to fatigue management. In addition, the important matter of pilot ladder safety is addressed. Also considered are pilot cutter evolution and the types of pilot vessels available today. Furthermore, the use of helicopters to ship and land pilots is well described. This volume provides useful background for those who need to know about one of the many maritime safety facets of the vast shipping business.

There is a valuable series of appendices. In one IMPA’s position on competition in pilotage is outlined. Guidance is given to its members on the use of ECDIS and there is a reflection on IMO’s e-Navigation strategy. Expertise of over 30 pilots is well described. This volume provides useful background for those who need to know about one of the many maritime safety facets of the vast shipping business.

For more information contact: IMPA, Prince Philip House, 62-63 Victoria Street, London SW1E 6HR, UK Tel: +44 (0)20 7839 2100 Fax: +44 (0)20 7839 2121 Email: info@impa.org.uk

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To request an order form or to order direct please contact: Michelle Tindall, The Corporation of Trinity House, Tower Hill, London EC3N 4HH. Michelle.Tindall@thls.org or 020 7481 6362. Payment can be made by cash, cheque, debit or credit card. All cheques are to be made payable to “Trinity House Events Ltd”. Prices for orders from overseas, Europe or Rest of the World, can be obtained on request. Please note that we do not accept American Express cards.

- **The Trinity House 500th fleec**
  To further commemorate our quincentenary a handsome fleecie is now available. This bears the coat of arms granted in the reign of Queen Elizabeth I in the year 1573 on the left breast and the TH 500 logo on the right sleeve. Sizes are available Medium, Large, XLarge and XXLarge. The fleecie retail at £30 plus £4.25 postage and packaging for UK purchasers. Orders should be sent to Michelle Tindall at above.

Quincentenary Coin Cover

Issued in a limited edition of 10,000 by the Royal Mint, the coin cover pays tribute to the Corporation of Trinity House in our 500th anniversary year and at the same time Southwold Lighthouse is featured as part of a seaside architecture stamp set.

This coin cover contains the £2 coin and bears the Southwold Lighthouse stamp. The front of the coin carries a photograph of Beachy Head Lighthouse while the reverse features a map of England and Wales pinpointing our 64 lighthouses. Maritime history writer and photographer Richard Johnstone-Bryden has contributed a brief summary of the origins of the Corporation, as well providing a timeline of our history and current responsibilities; this contains a quote from HRH The Prince Philip, Immediate Past Master of the Corporation. The postal location of Lowestoft on the postmark refers to our first lighthouse construction, in 1669.

To obtain the coin cover visit: www.royalmint.com price £15.95 (Royal Mint product code UKTNPNC)

**Half-pint Mug**

Special edition half-pint mug commissioned from the Emma Bridgewater pottery company. £16.00 each

**Cashmere Scarf**

Scarf with Trinity House arms and dates embroidered, available in dark blue or cream. £52.00 each

**Trinity House-themed £2 coin.**

On 19 May the Royal Mint announced that to mark the 500th anniversary of the granting of the Charter by Henry VIII in 1514 it had produced a limited edition commemorative Trinity House-themed £2 coin in three versions; sterling silver, 22 carat gold and silver Piedfort. These coins carry a striking lighthouse design by Bob Whittuck Blundell and David Eccles. The design also appears on the circulating version of the £2 coin which you will doubtless find in your loose change soon. Each coin is edged with the words SERVING THE MARINER.

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BIRTHS
To Wayne Beckham, CAD Technician, and Katie Vodden, a daughter, Bea Lily-D, on 16 September 2014. She weighed 6lbs 1oz.

To Sophie Harvey, IT Help Desk Administrator, and husband Jay, a daughter, Eva, on 26 June 2014. She weighed 7lbs 2oz.

To Sarah Harman, Assistant Accountant and husband Terry, a son, Jesse James Edward Harman, on 15 August 2014. He weighed 8lbs 6oz.

To Louise Harper, Performance Administrator and Mike Yaxley, Senior Project Engineer, a daughter, Holly Louise was born 16 July 2014 at 05:23am at Colchester General Hospital. She was born early at 28 weeks and 4 days, weighing 2lb 1oz. Holly spent over 8 weeks in Special Care at Colchester Neonatal Unit before coming home on 15 September.

On 19 September at Colchester Registry Office Natalie Todd, Finance Administrator, married Jonathan Foley. Their event included a Beatles themed blessing at The Waterfront, Dovercourt the following day for all family and friends.

LIGHT THROUGH A LENS
An illustrated celebration of 500 years of Trinity House.
This is a hardback book by Neil Jones and Paul Ridgway, published by Bloomsbury and was launched on 11 September. Neil Jones has been Records Manager for Trinity House since 2005 and Paul Ridgway’s association with Trinity House goes back four decades beginning as a PR assistant at Headquarters on Tower Hill in 1972. This is an annotated collection of illustrations of the 500 year history of Trinity House and contains rarely-seen archive photographs of Lighthouse Service operations in our waters.

ISBN 978 1 408 1 7 595 8 Price £20.00

To order please contact Michelle Tindall. 
email: michelle.tindall@thls.org or 
www.trinityhouse.co.uk/photo_competition

This competition closes on 28 February 2015. The first correct answer drawn by the Editor on 1 September was that of James (later Sir James) Douglas who held the post from 1863 to 1892. The first correct answer drawn by the Editor on 1 September was that of Charles Gilbert of Belper, Derbyshire. We send our congratulations and a handsome print of a work by Peter Kent the Greenwich-based artist.

LITTLE HOUSE PHOTOGRAPHIC COMPETITION
As in years past we are running a competition to find the best photographs of our lighthouses. Entrants are invited to submit pictures of any of our lighthouses. The twelve winning photographs will be published in the 2016 Lighthouse Calendar produced in association with leading calendar producer J Salmon Ltd. The photograph deemed the overall best entry will win a short break in one of the lighthouse holiday cottages.

This competition closes on 28 February 2015. Further details about the competition, including rules and an entry form can be obtained from the website: www.trinityhouse.co.uk/photo_competition

CONTESTANT WINNER
We announce here the result of the competition draw from FLASH 21 in the Summer.

Q Name the first Engineer-in-Chief of Trinity House?
A James (later Sir James) Douglas who held the post from 1863 to 1892.

COMMENTS

WEDDINGS
At the church of All Hallows-by-the-Tower, London EC3 on 5 July between Stuart Turner son of Mr and Mrs Bruce Turner of Johannesburg, South Africa, and Zoe Richards, Deputy Events Manager Trinity House, daughter of Captain and Mrs Derek Richards of Canterbury Kent. The reception was held in the west gallery of Tower Bridge, with a splendid view up the Thames as a backdrop. The honeymoon was spent in the Dominican Republic.
NEW STAFF, LEAVERS AND OBITUARIES

Starters

Harwich
Elwood Marshall, BuoYard Team Member, Full-time employee on 2 June
Allan Mathieson, BuoYard Team Member, Full-time employee on 2 June
Zoe Barnard, Assistant Accountant, Fixed term on 16 June
Stephen Nunn, Finance Administrator, Fixed term on 1 July
James Rowe, Apprentice IT, Fixed term on 14 July
Lewis Dale, Apprentice Stores, Fixed term on 14 July
Matthew Summers, Summer Temp, Fixed term on 1 August
Gareth Wimpenny, Development Engineer, Full-time employee on 11 August
Katia Poullouin, Commercial Administrator, Part-time employee on 28 August
Andrea Rodger, Purchasing Administrator, Fixed term on 8 September

Swansea
Andrew Christopher, Swansea, Full-time employee on 17 September.
Charles Darwall, Second Officer, Full-time employee after 3 years of service.
John Gough, Swansea, Full-time employee after 6 years of service.
Luke Brett, Swansea, Full-time employee after 8 years of service.
Andrew Cage, Swansea, Full-time employee after less than one year of service.
David Pascoe, Engine Room Assistant, Full-time employee after less than one year of service.
David Welton, Swansea, Full-time employee after 1 year of service.

Harwich
Joshua Eldridge, BuoYard Team Member, Full-time employee after less than one year of service.
Sandra Debeer, Full-time employee after less than one year of service.
Laura Gadsby, Full-time employee after less than one year of service.
Colin MacDougall, Swansea - Auxiliary, Full-time employee on 17 September.

Tower Hill
Rosemary Walsh, Navigation Department Administrator, Full-time employee on 15 September.

Swansea
Andrew Christopher, BuoYard Team Member, (Craif), Full-time employee on 12 June.
Jack Lawson, Apprentice Lighthouse Technician, Fixed term on 26 August.

Leavers

SVS
Paul Griffin, Swansea, Full-time employee after 10 years of service.
Samantha Mason, Second Officer, Fixed term after less than one year of service.
Ian Mills, Swansea - Auxiliary, Fixed term after less than one year of service.

OBITUARIES

It is with great sadness we report the deaths of

Arthur Hodgkinson, former HEQ, London on 18 October 2012, aged 69. He served 5 years.
Ronald Thomas Hayden, Blackwall Watchkeeper and Telephonist on 6 May 2014, aged 85. He served 9 years.
David Small, Plasw, Swansea on 16 May 2014, aged 83. He served 30 years.
William Leonard Brooker, Welder, Blackwall on 23 June 2014, aged 92. He served 26 years.
John George Kent, Painter, Blackwall, on 9 July 2014, aged 85. He served 20 years.
Edward William Faulkner, Electrical & Mechanical Engineer, London, on 6 August 2014 aged 82. He served 6 years.

Harry Holmes. On 16 January 2014 the age of 63 former Senior Electrical Engineer, Trinity House Lighthouse Service. He joined Trinity House in May 1961 and retired from the East Cowes Engineering Base in October 1992 after 31 years service. As a member of a team he was responsible for the electrical engineering of the total lighthouse estate which at its height numbered some 90 manned and unmanned stations. To this was added electrical installation in connection with the aids to navigation in the manned and unmanned lighthouse fleet and, furthermore, the stock of six LANBIRS (Large Automatic Navigation Buys). The latter had been manufactured as part of a lighthouse replacement programme, and were, not it should be added, without huge attendant problems with maintenance. During his time at Trinity House he saw the service undertake the early stages of electrification with conversion from PVB to on-site generated power. His career also saw the beginnings of light- house automation and the introduction of remote control and monitoring of stations. One station of particular interest was Eddystone which had been inaugurated in its manned state in '802 by the then Master of Trinity House, HRH The Duke of Edinburgh. A century later to the day the present duke carried out the switched on of the fully automated station.

Adrian Wilkinson, former Principal Mechanical Engineer writes: “It is difficult to do justice to Harry’s importance to the progress of engineering in Trinity House. As a deputy head of department he certainly kept things well under control and gave every assistance to his team. It is often overlooked that he was involved in the first designs for lightvessel automation and these, with the introduction of Automated Lighthouses, presented new problem for our engineers.”

William Leonard Brooker, Welder, Blackwall on 23 June 2014, aged 92. He served 26 years.

James Kenneth Rankin, on 24 May 2014 of James Kenneth Rankin, former Surveyor of Shipping and Marine Engineer of the Trinity House Lighthouse Service at the age of 77. He served 29 years.

Below: Eddystone Lighthouse as observed by a passenger in the Trinity House helicopter. The present tower by Sir James Douglas was completed in 1962 with a new helipad for the Director of Trinity House's tower of 1759. Photo: © Captain Roger Barker.