



Commissioners of
IRISH LIGHTS

Navigation
and Maritime
Services

A YEAR IN REVIEW

2019



2019 – Chief Executive Review

Yvonne Shields O'Connor

I am delighted to acknowledge the continued progress and achievements of the Irish Lights team in the second year of our Strategy, Safe Seas – Connected Coasts 2018-2023. Through the year, significant progress was achieved in each of our five Focus Areas, enabling the provision of a modern aids to navigation service while supporting the safe and sustainable development of the wider marine economy.

Throughout the year there was a strong team focus on the organisational values of **Professionalism, Quality, Trust, Respect, Innovation and Collaboration**. Health and Safety is a critical aspect of our work and I want to thank all employees for their continued focus on and prioritisation of safe working. Looking back over the past twelve months, I want to share some of the successes of the team and the impacts achieved.

During 2019, we welcomed **new Commissioners and new employees** to Irish Lights and acknowledged the significant contribution of a number of retiring and long serving colleagues. From the 1st of April 2019 a new organisational structure was implemented which incorporated the establishment of the new eNavigation and Maritime Services Department to align our structure better to the delivery of our new strategy. We are continuing to recruit to fill vacancies arising from retirements where this is required to meet our strategic objectives and targets.

I am pleased to report that the final phase of the **Capital Programme** for this year is on target for completion and within budget. Some of the highlights this year were:

- At Corlis Point, the leading lights (7 nautical mile daytime range) were replaced with modern low powered Sabik LED lanterns enabling the replacement of diesel generators with a more sustainable duplicated battery/charger back-up solution in the event of mains power failure. This has delivered a significant improvement for traffic in the Shannon Estuary.
- The capital works continued at Fastnet lighthouse and involved the installation of new electrical, electronic and battery systems to reduce the requirement for generator operation on site. Essential repairs were also carried out to the helipad.



- The completion of consolidation works at Wicklow Head involved the installation of a GISMAN bearing solution and LED light source, which retains the third order heritage lens in operation while removing mercury from the lighthouse.
- Ultimately, by the end of 2019 we will have achieved 75% of our targeted 'consolidation' programme. Consolidation delivers better quality, reliability, environmental outcomes and lower costs. In the years to 2023, the capital programme will be a mix of consolidation and re-equip projects on the following sites: Straw Island, Rathlin West, Rathlin East, Rue Point, Muglins, Tuskar, St. John's Point Down, St. John's Point Donegal, Kish, Loop Head, Blackhead Clare and Slyne Head.

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Innovation has always been part of our service and in October 2019, Irish Lights announced the successful completion of the bearing trial at Tory Island Lighthouse along with the re-establishment of the existing hyper-radial Fresnel lens using an LED light source. The primary objective of the trial was to determine if a bearing solution could be adapted to rotate a large Fresnel lens system. This project was a significant success for Irish Lights bringing technology and innovative design together to enable a viable solution for rotating a large lighthouse heritage lens and thereby the continuation of a reliable aid to navigation via an environmental friendly solution.

While our work is progressive and forward-focused, we are also immeasurably proud of our rich heritage and we are delighted that this project paves the way for the deployment of this technology over the coming years at other lighthouses with rotating heritage lenses where mains electricity is available.

It was a busy year with the **buoy programme** with eleven buoys deployed so far this year of which 4 are polyethylene buoys positioned in the Rusk Channel off the Wexford coast. Seven buoys were fitted with self-contained lanterns simplifying their construction and maintenance. By the end of the year larger polyethylene buoys will be deployed at Strangford and Tail of Beal (mouth of Shannon) to complete our polyethylene buoy test fleet. In addition, a new type of AIS unit that meets our requirements is being determined through a Tri-GLA tender process. Several buoys are now under construction and await the selection of this unit in order to complete their refurbishment.

In 2019 a total of 72 new local AtoN applications were processed. Engagement between Irish Lights and local authorities and local developers is of the upmost importance and we continue to encourage early consultation on projects.

Throughout 2019 ILV **Granuaile** been working her way around the coast through the Zones A to E carrying out buoy maintenance, offshore project support activities, beacons checks, sector and leading light checks and surveys. In April Granuaile went into Dry Dock for her five year special survey to determine the condition of structures and equipment and where necessary to repair, refurbish or replace items that contribute to the safety or operational efficiency of the ship. This year we also had a big extra project which was the replacement of a large amount of fresh water pipe work. The dry dock was a major project which involved a significant team effort from Coastal Operations, eNavigation & Maritime Services and was completed successfully within budget.

This year a lot of work went into the **5 Year Aids to Navigation Review**. This involved consultation with stakeholder around the coast at the following locations: Howth, Dunmore East, Silgo, Belfast, Castletownbere and Dun Laoghaire. The consultations were well attended and we appreciate the very valuable feedback we received about our services.

In 2019 a total of 72 new **Local AtoN applications** were processed and approved. Our inspection and audit programme continues to expand as a reflection of the number and type of developments that are emerging along the coast. Engagement between Irish Lights and local authorities and local developers is of the upmost importance and we continue to encourage early consultation on projects.

Throughout this year we have been actively inputting into the development of the recently published **National Marine Planning Framework (NMPF)** in conjunction with our colleagues in the Department of Transport, Tourism and Sport. The NMPF is an important milestone towards Ireland adopting our National Marine Spatial Plan in 2020 and Irish Lights has an important role in providing advice and support services in safety and navigation.

A range of policy, operational and stakeholder meetings dealing with Safety at Sea, Search and Rescue, Enabling Technologies, Offshore Renewables, Aquaculture, Vessel Traffic and Data Management, e Navigation etc. were attended and Irish Lights employees contributed their expertise and experience. During the year we also participated in Seafest, London Shipping Week, IALA and EU Meetings and collaborated on World Maritime Day to host a Women in Marine Conference and Networking Event for 150 delegates. Additionally Irish Lights

held an annual open day in October 2019 welcoming over 450 visitors to our Dun Laoghaire Headquarters. Local community consultations were also conducted regarding proposed works on Mew Island, St John Point Down, Rathlin Island and Carlingford.

This year has seen the introduction of a range of new systems including finance, monitoring, works management and HR systems to enable us to enhance efficiency and deliver better services. This has involved significant effort and co-operation across the whole organization.

It's been a challenging year for commercial services, with a drop off in charter activity and very competitive conditions in the broader marine sector. We have maintained our buoy and property contracts in line with last year and proactively engaged with some of the leading offshore wind energy operators, facilitating 3rd party equipment hosting at a number of our sites.

In March this year, an independent economic assessment of Great Lighthouses of Ireland initiative by KHSK Economic Consultants found that 420,000 visitors attended the 13 Great Lighthouse sites in 2018 with a combined revenue of €1.92M (65% of which is injected back into the local economy). Average occupancy at the sites was 49.5% and 80 people have been employed. This represents a tremendous impact in coastal areas and Irish Lights is delighted with this success and congratulates all the local partners on their efforts. In terms of new Great Lighthouses of Ireland opportunities, there are a number of active projects looking at alternative site development potential including a boat/bus tour offering from Killybegs calling to both Rotten Island and St. John's Donegal, the development of a new visitor experience at Blacksod with tower tours and navigation focussed interpretation of Blackrock & Eagle Islands and the use of the dwellings on Rockabill to support the management and monitoring of the bird sanctuary.

Our history and heritage are an important part of the organisation and in 2019 we commenced a major project to begin the cataloguing of our archive to international standards along with conservation and digitisation works.

In April 2019 Irish Lights hosted a successful three-day visit of HRH The Princess Royal to its Dun Laoghaire headquarters, the ILV Granuaile as well as the Baily, Rockabill and Kish Lighthouse. The visit by **HRH Princess Anne** in her role as Master of Trinity House and patron of Northern Lighthouse Board marked the important, historic and ongoing relationships between the Lighthouse Authorities of Great Britain and Ireland. For over 150 years the Commissioners of Irish Lights has worked in an integrated partnership with Trinity House and the Northern Lighthouse Board to deliver a range of services to ensure safe navigation. During the visit, The Princess Royal met employees to learn more about Irish Lights' operations and it was an honour to have this opportunity to showcase the vital work we do.

One of the wonderful visits we made was to meet Frank Pelly out in the Baily Lighthouse. He gave the usual tour de force bringing us through the history of Irish Lights over three centuries. Our history and heritage are an important part of the organisation and in 2019 we commenced a major project to begin the **cataloguing of our archive to international standards** along with conservation and digitisation works.

As an island nation, the importance of safe navigation is vital to the development of our marine economy and coastal communities. In the context of constantly evolving legal and technological requirements our stakeholders continue to be at the heart of our strategy as we play our part to meet the challenges and opportunities that present. I want to take this opportunity to thank all employees, the Board of Irish Lights, Trinity House and Northern Lighthouse Board, our collaborators, stakeholders and customers. We look forward to continuing to progress our activities in 2020 with your support.

Yvonne Shields O'Connor
Chief Executive





Focus Area 1

Provision of General Aids to Navigation around the Island of Ireland

Irish Lights continues to maintain 65 lighthouses around the coast of Ireland, North and South.

These aids to navigation require maintenance and reequips which form part of the capital project work within the organisation. All our projects aim to deliver better quality service and reduce environmental impact. Some of the major projects around the coast are highlighted below.

At Blacksod, Co. Mayo, a cluster of four halogen lamps were replaced with a modern LED light source, inside the original 1931 glass lens.

At Corlis Point, Co. Clare, two original 7nmile daytime range leading lights were replaced with modern low power LED equivalents. This allowed for standby diesel generators to be removed and replaced with a simple battery and charger solution. The project will provide reliable operation for another 20 years and has delivered a significant improvement for users of AtoNs in the Shannon Estuary.

At Donaghadee in Co. Down, an old diesel generator was replaced with batteries and chargers and a new low power light is being tested in Dun Laoghaire.

Mercury was removed from the optic at Wicklow Head and replaced with a new GISMAN bearing system to support the rotating lens. In advance of this replacement, an 18nmile LED light was fitted on the balcony to serve as the main navigation light during the work until the new LED light source in the old lens is fully installed and commissioned.

From April onwards, the capital program for 2019-20 began, with onsite work at Fastnet, Blackrock Sligo and Broadhaven, as well as the completion of the work at Wicklow.

At Fastnet, the work included the installation of large batteries and chargers, which hugely reduces the requirement to keep a generator running. There was also major repairs to the helipad and fuel lines, in addition to other electrical work.

New solar panels and batteries were installed at Blackrock in Co. Sligo. A new light is currently being tested and is intended to be installed early in 2020.

At Broadhaven in Co. Mayo, a new LED light, along with batteries and charges will be installed in 2020.

A number of 18 nautical mile standby lanterns were installed at key stations. These lanterns provide a full 18nmile navigation light to the mariner, which means that an issue with the main light will not cause an outage or require emergency out of hours response.

Designs and procurement for next year's capital projects are already underway which will include a re-equip at Straw Island near Inishmor as well as at Muglins Lighthouse off Dalkey. Both stations will be fitted with new low power LED lanterns, as well as new batteries and AIS monitoring.



New Bearing Solution Commissioned on Tory Lighthouse

In October 2019, Irish Lights announced the successful completion of a five year bearing trial at Tory Island Lighthouse along with the re-establishment of the existing hyper-radial Fresnel lens using an LED light source. The primary objective of the trial was to determine if a bearing solution could be adapted to rotate a large Fresnel lens system. This project was a significant success for Irish Lights bringing technology and innovative design together to enable a viable solution for rotating a large lighthouse heritage lens. This allows for the continuation of this station as a reliable aid to navigation in an environmentally superior manner. Importantly this trial paves the way for the retention of other First Order Fresnel lenses at lighthouse stations where main electricity is available such as Rathlin East, Rathlin West, St John's Point, Down, Blackhead, Antrim, Old Head of Kinsale and Galley Head.

A GRAD LED light, RLS 15-36 with a range of 18nM was installed in the lower lens. The optic control cabinet was installed. A pair of SL-300 18NM standby lights were installed on the balcony handrail. All lights at Tory (RLS 15-36 and SL-300) are now capable of delivering the required range of 18nM. During the installation GRAD visited the site to take a measurement of the range of the DRAD RLS 15-36 LED light.

New Monitoring System

Irish Lights is currently implementing a new Monitoring system that was developed by a Danish company called Gatehouse Maritime. The system uses automatic identification system (AIS) as its primary means of communication. The system will allow Irish Lights to get up to date status information on its Aids to Navigation (AtoN) to ensure the network is operating to the correct standards and meeting end user expectations.

The new solution will enable the decommissioning of legacy monitoring systems, provide improved decision support relating to AtoN monitoring and traffic analysis, enable more proactive maintenance, improved alerting and more timely communications to key personnel.

Polyethylene buoys

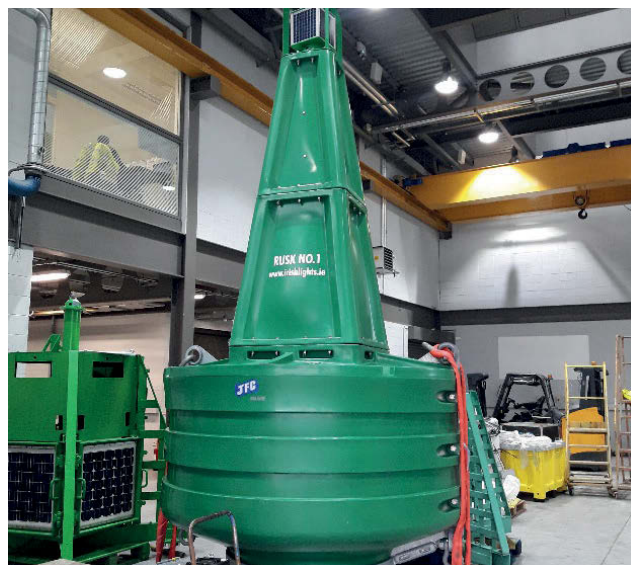
Irish Lights has a significant fleet of buoys, the majority of which are steel buoys. In recent years, prompted by review of the fleet to see where cost reductions and environmental improvements can be made, Irish Lights is trialling plastic or polyethylene buoys for a period to see they can provide a viable alternative to steel buoys.

Polyethylene is a specific type of plastic which is commonly used in everyday items such as children's toys and shampoo bottles.

Last February, four polyethylene buoys, manufactured by JFC based in Tuam, were deployed marking the Rusk Channel which is off the Wexford coast. These buoys are each fitted with a self-contained lantern. A self-contained lantern is a single compact unit which comprises a battery, solar panels and a marine lantern and greatly simplifies installation and maintenance.

The picture on the right shows one of the Rusk buoys being prepared in our buoy shed prior to deployment. The self-contained lantern unit may be seen atop the buoy just below the green conical topmark which denotes a starboard lateral buoy.

The self-contained lantern on this particular buoy also contains an AIS (Automatic Identification System) transmitter which both monitors the buoy and transmits information to the mariner regarding the name of the buoy, its position and if it is lighting.



If the navigation requirement for the buoy can be achieved by a self-contained lantern it makes the use of a plastic buoy a lot more feasible as it does not require the fitting of batteries, external solar panels and interconnection wiring.

Irish Lights already has plastic buoys at Greystones, South Rock (near Tuskar Rock) and two marking a danger zone off Co. Down.

Two larger plastic buoys will be deployed at Strangford (Co. Down) and Tail of Beal (Mouth of the Shannon) and are currently being assembled in Dun Laoghaire.

Strangford Safe Water Mark Buoy

Strangford is a Safe Water Mark Buoy, which comes from Sealite, an Australian manufacturer of aids to navigation.

The colour scheme of a Safe Water Mark buoy is vertical red and white stripes. For the bowl section this is achieved by constructing it from eight alternately coloured curved sections which are bolted together around a galvanized centre core section.

This image shows the main section of the daymark which contains the batteries while that on the right is the upper section which includes 2 solar panels, a marine lantern, an AIS unit and a topmark which for a safe water mark is a single red ball.



Tail of Beal

Tail of Beal is a starboard lateral buoy, from Tideland Signal based in the U.S.A.

This image shows the upper daymark section of the buoy. Similar to the Strangford buoy it is fitted with solar panels, marine lantern and AIS unit.

Strangford and Tail of Beal were chosen as 2 trial stations due to the strong tidal flow at each location, they are both observable from land and there is much traffic passing each buoy. The Tail of Beal is in a particularly exposed location. Both buoys are monitored by AIS and failures are reported as is the norm for all Irish Lights' Aids to Navigation.

It is anticipated that the trial period will be two years.



STORMLAMP Research Project – Assessing the Survivability of Rock Lighthouses

Many lighthouses around the world are situated in hostile wave environments, warning mariners of the perilous presence of rocky outcrops. Whilst these iconic lighthouse towers have stood the test of time, there are some concerns about their longevity, particularly with predictions of increased sea levels and frequency of storms associated with climate change. It is against this backdrop that UK academics have been investigating wave loading on rock lighthouses around the UK and Ireland, following a successful pilot study on the Eddystone lighthouse.

STORMLAMP (STructural behaviour Of Rock Mounted Lighthouses At the Mercy of impulsive waves) is a research project that is characterising wave loading and structural performance of rock lighthouses in assessing their survivability under wave loading. It uses combined field measurements, laboratory studies, analytical and numerical investigations, and will support management of lighthouse structural conditions. To tackle such a problem requires a unique combination of skills available from three UK universities: University of Plymouth, University of Exeter and University College London. The 3.5 year project commenced in May 2016 and is funded by the UK Engineering and Physical Sciences Research Council with support from Trinity House, Northern Lighthouse Board and Irish Lights by providing helicopter access to a number of rock lighthouses, in order to understand the structural behaviour of their towers in response to wave loading. Other industry partners include HR Wallingford and the Environment Agency (UK). The project requires the combined expertise of structural monitoring and modelling, in addition to an understanding of



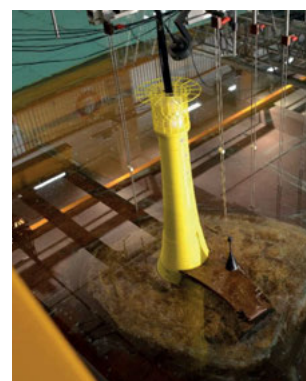
Drone image of Fastnet lighthouse collected during field modal test by Mr. James Bassett (University of Exeter)

the offshore wave transformations due to the dramatically varying seabeds.

The first task has been to undertake modal testing of towers to elicit the structural characteristics: modal masses, frequencies and shapes. To date, the field campaign team at Exeter and Plymouth universities has tested the lighthouses of Les Hanois, Wolf Rock, Longships, Bishop Rock and Eddystone with Trinity House, Fastnet with Irish Lights and Dubh Artach with Northern Lighthouse Board. The nature of the tests is to produce controlled vibrations of the tower, which are detected at vertical elevations of the tower using carefully placed accelerometers. The structural parameters are being used to calibrate complex numerical models of the structures.

The structural numerical models are being developed at University College London and are using two approaches to simulate the towers: Finite Element Modelling (FEM), which considers the tower as having homogeneous material properties, or Discrete Element Modelling (DEM), which simulates rigid blocks. Using Limit Analysis and DEM, the sliding failure mechanisms of all the field-tested towers has been evaluated. This analysis shows the importance of the vertical keys between masonry courses that prevent sliding failure, which would otherwise occur before overturning failure.

The waves used to investigate failure mechanisms on the structural model are acquired using statistical techniques based on extreme value theories, with data from IFREMER (National Institute for Ocean Science, France). Offshore wave conditions are used as an input for small-scale physical models in the University of Plymouth COAST Laboratory and Computational Fluid



Hydrodynamic modelling at University of Plymouth COAST Laboratory

Dynamics (CFD) numerical models, also at Plymouth. Initial findings from the wave hydrodynamics are that: most of the rock towers will not be affected by direct breaking wave loadings but by broken wave impact which will have slightly reduced intensity but increased duration; Fastnet's extreme wave climate does not seem to show any statistically significant effects due to the climate change; and a proper survivability assessment of these types of structures cannot overlook the bathymetry of the rock around the lighthouse, mainly because the type, intensity and duration of the wave load is strongly affected by seabed geometry.

As a result of the various investigations, the STORMLAMP team has focused activities around the Wolf Rock and Fastnet lighthouses. Wolf Rock lighthouse has been selected because it is situated on an individual pinnacle of rock, which may lead to direct plunging wave impacts onto the tower. This would not happen for most rock lighthouses, as they are generally surrounded by rocky outcrops, which cause the waves to break, and hence lose some energy before encountering the lighthouse. Fastnet lighthouse is interesting because it faces the full force of the Atlantic Ocean.

Fastnet is of particular interest from an Irish Lights' perspective. Two elements were identified as key aspects contributing to the structural stability of the Fastnet lighthouse. First is the massive nature of the construction as well as the meticulous construction of the interconnecting masonry blocks. Secondly, the height of the structure above the sea level that guarantees impact wave loadings are acting only on the lower courses, characterised by the absence of internal voids as well as by a solid contact with the basement rocks, thus generating an extremely stiff lower area and consequently modest dynamic response of the whole lighthouse structure.



Neilly O'Reilly, Rory Keogh and Martin McHale at Fastnet lighthouse.

The overall assessment is that the stability of the Fastnet lighthouse, in its current condition, gives no cause for concern with the sheer mass of the lighthouse and its interconnected masonry construction capable of withstanding the worst of the Atlantic storms.

Further information on the STORMLAMP research project can be found at www.stormlamp.org.uk

Sigfox/ Remote Control of Devices

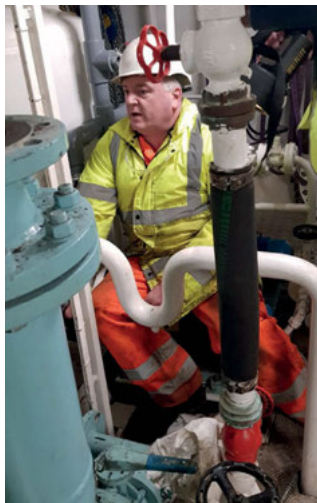
Sigfox is an exciting new technology that is being implemented by Irish Lights to enable control and monitoring of equipment at remote locations. Sigfox is a type of low power, low cost communication technology known as Low-Power Wide-Area Networks (LPWAN). Like a mobile phone network, Sigfox has a network of base stations covering the whole country. The Sigfox devices connect into this network and send data through it back to the Irish Lights headquarters in Dun Laoghaire. Currently, there are four Sigfox devices installed on Irish Lights equipment – Dublin Bay, Finnis and Ballybunion buoys, and Tory Island lighthouse. These devices are used to reset equipment at the sites remotely. Plans are in place to continue testing this technology by installing Sigfox devices at several other MetOcean sites around the coast. A Sigfox device has also been installed on the Granuaile to monitor the signal strength offshore as it travels around Ireland. As well as resetting equipment at remote stations, future uses of Sigfox in Irish Lights could be in sending back information such as weather data, station status and other monitoring data from sites around the coast.

ILV Granuaile Dry Dock

From 28th April to 6th June Granuaile was in Greenock in Scotland for her 20 Year Special Survey / Drydock. Special surveys are a statutory requirement for ships and take place every 5 years. They involve rigorous inspection of the ship including the hull, tanks, thrusters, drives and motors. All equipment and areas of the ship are opened up and examined for wear or damage to ensure that the ship is fit for service for another 5 years. At the same time normal drydock activity such as painting, equipment overhaul, repairs, etc. On this occasion there was an additional major project to replace all of the ships domestic fresh water pipes which had become corroded due to age. Both of these major projects were completed under budget and to an excellent standard.

Planning for this project commenced in January 2018. Meticulous planning and preparation including pre tender visits to yards and detailed specification of all work were critical to the success of the project. The completion of major projects such as these requires collaboration across a number of departments. In particular the technical leadership from the ships team and the purchasing know how of the procurement section were critical to delivering the value for money achieved.

The completion report for the project identified a number of key 'lessons learned' which will be applied to future projects. While Granuaile was out of service Irish Lights Risk Response requirements were covered by our GLA partners through the Coordinated Fleet Management process.



Rory O'Rourke in the engine room of ILV Granuaile during Drydock



Sean and Zach from the procurement team on-site at Drydock.

Work Management System

A new Work Management System, GeoPal, is being implemented which will store the work and implementation plan for all Irish Lights' stations and buoys. This will include annual maintenance visits, adhoc maintenance jobs and buoy work. This advanced system will allow for optimal planning and management of jobs on the coast and in the future will include Dun Laoghaire in its scope. The system has two interfaces. Irish Lights' Lighthouse Team Leads and operational managers access a web based interface to allow new jobs to be added, triaged, assigned and monitored through easy to use screens and reports. A second interface/App is available on mobile phones and allows employees to view upcoming jobs, as well as to complete and create new jobs when appropriate.

International Association of Lighthouse Authorities (IALA)

eNavigation Committee

ENAV is one of four IALA committees which together advance the work of the organisation; the others are ARM, ENG and VTS dealing with Aids to Navigation Requirements, Engineering and Vessel Traffic Management respectively. ENAV meets twice a year with a focus on three areas: data services, emerging digital technology and digital communications technology.

ENAV is tasked with advancing the concept of eNavigation, put forward by the International Maritime Organisation in 2006 with revised priorities in 2014. IMO has defined E-navigation as "the harmonized collection, integration, exchange, presentation and analysis of marine information on board and ashore by electronic means to enhance berth to berth navigation and related services for safety and security at sea and protection of the marine environment."

These developments are closely aligned to the Irish Lights strategy and therefore Irish Lights attended two ENAV committee meetings during 2019, helping to advance developments in the VHF Data Exchange System (VDES), Ranging Mode on terrestrial radio as a contingency/backup for the Global Navigation Satellite System, and communication technologies like 5G, LTE-Maritime and Digital Mobile Radio (dMR).

The ENAV committee liaises via IALA Council with the ongoing work of other organisations including the IMO, International Telecommunications Union (ITU), International Electrotechnical Commission (IEC), and the Comité International Radio-Maritime (CIRM – the International Association for Marine Electronics Companies)

IALA ENAV is approaching the halfway point in its 2018-2022 work plan, and is well placed to continue the evolution of digital technology into the maritime environment for the safety of all.





Focus Area 2

Provision of Local Aids and Other Navigation Services



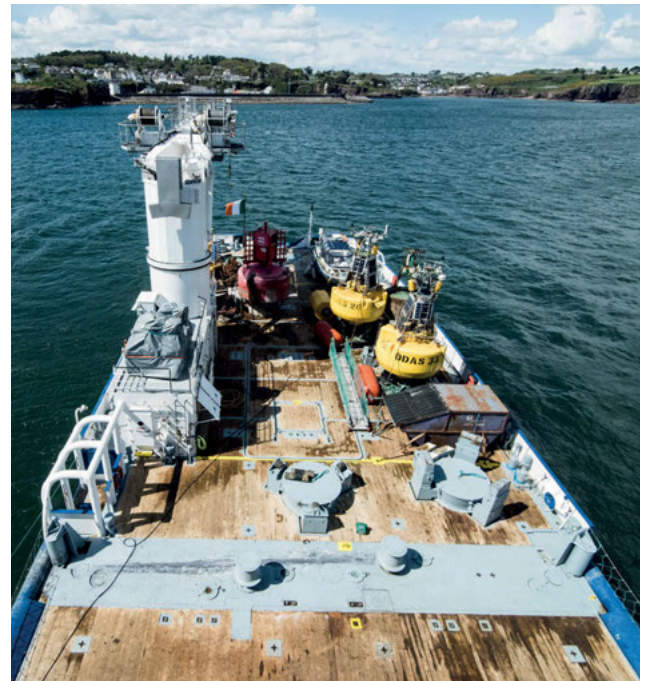
Local Lighthouse Authorities (LLA) have authority over Local aids to navigation in their area. Typically they are Harbour authorities or county councils. As a result of the National Ports Policy and reform of Local Government in Northern Ireland the number of LLA had consolidated in recent years. This year however we have seen the list of LLA develop, diversify and expand to include companies who have responsibility for large numbers of local AtoN across multiple jurisdictional areas such as Irish Water or LLA with AtoN located far off-shore outside traditional Harbour Authority or Country Council jurisdictional areas such as those associated with the off-shore and renewable energy sectors.

2019 saw a resurgence of interest in the Off-shore Renewable Energy Sector. This increase in interest has sparked an increase in activity which led to the deployment of a number of temporary AtoN providing monitoring of Meteorological Data and Sea State in areas of proposed renewable energy sites along the east of Ireland. Irish Lights is working on these projects to review the systematic process of marine risk assessment specifically focusing on any interactions with safety of navigation in or near these proposed sites.

Irish Lights operates an integrated AtoN Management System to assist in the inspection process and the reporting and recording of all data relevant to Local AtoN. LLA have access to an on-line portal which currently allows availability reporting, Statutory Sanction applications and the production of

availability reports by AtoN or IALA Category. Over the past 12 months Irish Lights has been engaging with LLA with a view to improve and further develop this AtoN Management System.

Feedback from Coastal Consultations for 2020 Aids to Navigation Review



During consultations for the 2020 Aids to Navigation review stakeholders noted that there is an increase in the use of LED lights on and in buildings, streetlights and car parks along the coast making it more difficult for Mariners to identify Local Aids to Navigation. Stakeholders also raised the issue of people increasingly using non-marine certificated / unlicensed, third party Navigational Aids such as mobile phone applications and websites as their primary means of navigating in near coastal waters as well as into and out of ports, piers and harbours. In addition stakeholders also expressed unfamiliarity with the full capabilities of the Irish Lights online Portal for Local Lighthouse Authorities. They additionally requested improvements to allow for ease of identification of Aids to Navigation within their jurisdictional areas as well as streamlined communication processes between Irish Lights and the Local Lighthouse Authority.



Focus Area 3

Commercial Services

Ship Charters – serving industry and research needs

2019 has been a busy year for Granuaile meeting the needs of diverse markets. In addition to fulfilling its statutory duties Granuaile delivered 31 days of commercial charters around Ireland for a mix of Irish and UK customers. The mix of crew expertise and the versatility of the vessel make Granuaile an attractive vessel of opportunity to support a variety of offshore industry sectors.

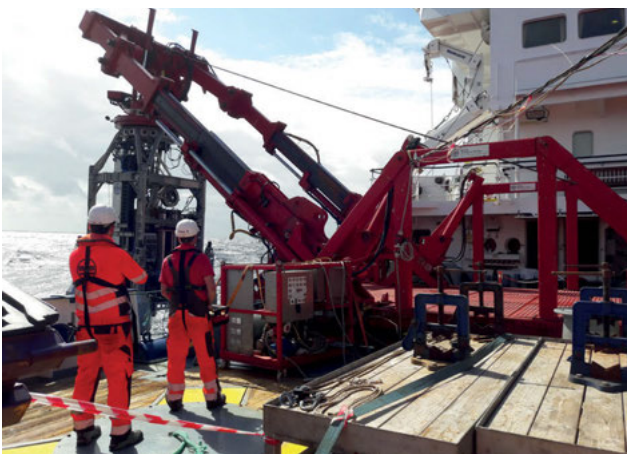
Irish Lights and BGS Collaboration

Granuaile completed a 21 day charter with the British Geological Survey. The British Geological Survey (BGS) operates a range of marine sampling equipment including a robotic seafloor corer, (RD2) that can retrieve rock and sediment cores to 50m beneath the seabed in water depths up to 4000m. The BGS needed to undertake deep water trials of RD2 following major upgrades to the system and following a competitive tender process the ILV Granuaile was chosen for the project. The project was completed in September and the Granuaile proved to be an excellent platform for the operation of RD2. The trials have formed a significant part of preparations for upcoming scientific projects.



**British
Geological Survey**

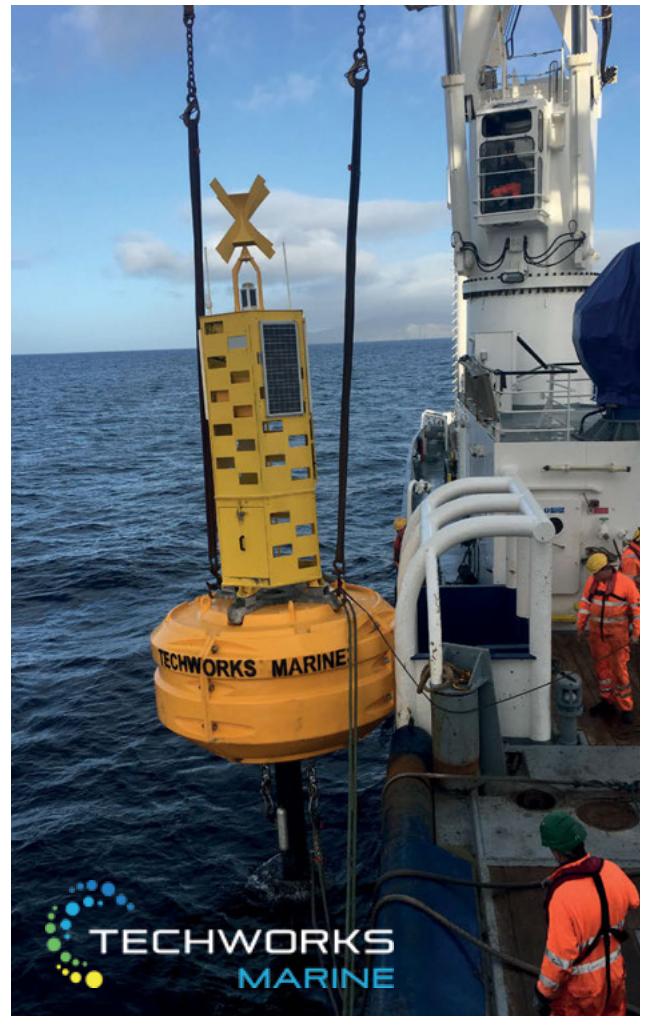
Expert | Impartial | Innovative



Working with Techworks Marine to deliver on Killybegs Harbour Extension

In September, Granuaile worked with Techworks to deliver essential buoy services as part of the Killybegs Harbour extension project.

TechWorks Marine is a provider of oceanographic equipment and solutions to monitor the marine environment, working in the private and public sectors and were contracted to conduct the environmental monitoring campaign for the site development and utilised the expertise of Granuaile to deploy two of the larger buoys.





The ILV Granuaile supports a variety of offshore industry sectors.

Irish Lights supporting Offshore Wind Developers

Irish Lights has been promoting its operations to the offshore energy sector over the past few years, with some initial activity off the east coast happening in 2019 with Statkraft Ireland. It is part of the Statkraft group with 3,600 employees across 15 countries and is Europe's largest generator of renewable energy. As a part of decarbonising Ireland's electricity generation system, Statkraft Ireland is primarily focused on the development of renewable energy with offshore wind being one their key focus areas. As part of their site assessment of a potential offshore wind site off the East coast of Ireland, Statkraft signed a contract with Irish Lights to place a lidar device in Rockabill for one year to measure wind profile and speed over time which is an important input to the site assessment process.



Irish Lights Commercial Services exhibited at Atlantic Ireland 2019, promoting Irish Lights core marine safety services and the variety of commercial services available such as vessel charter, buoy rental/maintenance and consultancy.

Irish Lights also exhibited at the Irish Marine Industry Network event in Cork after Seafest.



Commercial Buoy Services

Buoy contract work generates a significant work stream for commercial services and clients include those from industry, local authorities and both the Irish and UK met offices.

The work in 2019 includes buoy developments, recovery and ongoing scheduled maintenance services for a variety of customers including a number of ports, Techworks Marine, SMARTBAY, UK Met office K buoys, Irish Met office M buoys along with Fraunhofer the German marine research agency who needed assistance with their specialist Flidar buoys for measuring wind profile as part of offshore wind site assessment campaign).





Focus Area 4

Value Added Services

Maritime Search and Rescue Irish Sea Working Group

ILV Granuaile conducts regular exercises with the Irish Coastguard as the competent authority for maritime Search and Rescue (SAR) in Ireland. These exercises have also involved Dublin Fire Brigade as the unit tasked with deploying to fires on board maritime casualties at sea. These joint exercises are highly beneficial for all involved and serve to highlight the strengths of the Granuaile as a supporting platform for maritime SAR, due to her large deck space, maneuvering ability and communications capability.

As Granuaile can be tasked to operate around both Irish and UK waters for risk response, we have also been working with both the Irish Coastguard and the UK Maritime & Coastguard Agency (MCA) to further strengthen relationships between the competent authorities in both jurisdictions and between the SAR providers in each area. To this end, Irish Lights has also engaged with the Irish Sea Working Group to enhance cooperation via the UK Secretary of State Representative (SOSRep), Maritime Salvage & Intervention.

Following this meeting, a representative from the GLA and the RNLI were invited to attend the existing Maritime SAR Irish Sea Working Group. This operational group meets twice yearly and is attended by the IRCG, MCA, Isle of Man CG and representatives from the port and airport in the Isle of Man. The meeting allows for sharing of key operational updates and includes a table top exercise intended to stretch the response capabilities of the agencies in both maritime SAR and the likely pollution response situation to follow.

New National Search and Rescue Plan – Irish Lights continues to play our part

July 2019 saw the introduction of a new National Search and Rescue (SAR) Plan (NSP) for Ireland. This plan brings Ireland into line with international best practice on SAR – with a combined response on land, sea and air. It also addresses some key lessons arising from tragic accidents involving Search and Rescue services in Ireland over the last three years. The new plan replaces the existing National Maritime Search and Rescue Framework dating from 2010 and it is the baseline guide for all Search and Rescue (SAR) organisations in Ireland.

The NSP will be implemented at a strategic/policy level by a National SAR Committee (NSARC), comprising the IRCG, Irish Aviation Authority (IAA) and An Garda Síochána (AGS), their parent departments in the Irish government and other strategic partners. At the Operational level, NSARC will liaise with the SAR providers and supporting organisations through a consultative committee. Irish Lights attended the first meeting of this consultative committee in September 2019. Following this meeting Irish Lights engaged with IRCG on developing a new Service Level Agreement for the provision of SAR services, including the provision of assurance around having robust risk management and Health & Safety systems in place. This SLA is due for completion in 2019.

INFOMAR

INFOMAR is Ireland's national marine mapping programme. It is the follow-on project from the Irish National Seabed Survey which mapped the deeper waters off the country's coast. INFOMAR is now targeting shallow waters (e.g. bays, Harbours, and ports) so that we have a map of all of Ireland's marine territory.

INFOMAR is a DCCAE funded joint programme between the Geological Survey Ireland and the Marine Institute, surveying our unmapped marine territory and creating a range of integrated mapping products of the physical, chemical and biological features of the seabed. Representatives from Irish Lights attended the Technical Advisory Committee meeting of INFOMAR at GSI in July 2019.

Irish Lights was presented with a plaque to recognise their contribution to the Baseline Coastal Mapping Project at INFOMAR Seminar in October 2019.





Paul Bowen and Stephen Kelly ending the day at Skelligs.

Launch of Ireland's first draft National Marine Planning Framework in Irish Lights

In November, Damien English, Minister of State for Housing and Urban Development, launched Ireland's first draft National Marine Planning Framework (NMPF) in Irish Lights. The framework outlines the Government's proposed approach to managing Ireland's marine activities and ensuring sustainable

use of marine resources to 2040. This is a significant milestone for the marine spatial planning process, which will look at the management of the marine area and plan its use into the future. The plan will try to balance the different demands for using the sea including the need to protect the marine environment, ensuring marine activities are as efficient and sustainable as possible.

The Draft National Marine Planning Framework is open for public consultation until 28th February 2020.



Minister of State for Housing and Urban Development, Damien English and the National Marine Planning Framework Stakeholder Advisory Group.



Focus Area 5

Heritage, Tourism and Community Engagement

Great Lighthouses of Ireland secure £60k grant support from the UK Heritage Lottery

Great Lighthouse of Ireland secured a grant of £60k funded by UK Heritage Lottery as part of the European Year of Culture to create digital content that captures the best and most compelling stories associated with our lighthouses and coastal communities. Five short films that capture all that is special about lighthouses in Northern Ireland were created and to be shown on digital platforms including www.greatlighthousesofireland.com. The project, 'Legends of the Lighthouse' was launched at Titanic Belfast on 5th December.



Pictured at the launch of 'Legends of the Lighthouse' - Mary O'Brien, CEO, Irish Landmark Trust, Paul Mullan, Director, National Lottery Heritage Fund Northern Ireland, Yvonne Shields O'Connor, CEO, Irish Lights, Angela Lavin, Senior Investment Manager, National Lottery Heritage Fund Northern Ireland, Rosemarie McHugh, Director of Product Development, Tourism NI



Ted Kennedy, Bill Power and Gerald Butler, former lighthouse keepers at the launch of 'Legends of the Lighthouse' in Titanic Belfast.

Economic Impact of Great Lighthouses of Ireland

In early 2019 Irish Lights commissioned an independent economic assessment of the value of the Great Lighthouses of Ireland to Ireland. The Great Lighthouses of Ireland initiative is based on the recognition that Irish Lights owns and is responsible for a number of important heritage properties around the coast of Ireland that are surplus to its core navigation safety mission. Featuring 13 iconic sites, all operated by independent partner organisations offering visitors a mix of accommodation and visitor attraction. The operators comprise two charities – who operate 7 sites in total – four community/social enterprise companies, three local authority and one private company.



The primary objectives of the organisations that operate the tourism facilities at the sites is mainly heritage preservation and social enterprise supporting local communities. For the community development companies, employment creation for local residents is the primary aspect of socioeconomic development. Profitability, as it would normally be defined, is not the main objective of nearly all the operators. Certainly, all emphasise the need to operate in a manner that creates revenues, but these revenues are seen mainly as a means to achieve the primary aim of community development, wildlife protection or the preservation and conservation of the buildings. The report validated the importance of lighthouse tourism and recognised a broad range of sources of direct and indirect value that arises from their very existence and the fact that Great Lighthouses of Ireland is well aligned with national & regional policies.

High-level findings were very positive and demonstrated the significant contribution lighthouse tourism brings to the wider rural communities of Ireland with 420,000 visitors across 13 sites in 2018, a combined revenue of €1.92M with over 65% injected back into the local economy, 143,500 tower tour tickets, 49.5% average occupancy and 80 people directly employed. Great Lighthouses of Ireland is well aligned with Ireland's tourism policy with some sites successfully leveraging funding supports in the last year to improve their visitor experience. Hook Head received funding of €100k from FLAG to develop a new interpretation experience based on clean oceans & plastic waste, Valentia Island secured €100

from Fáilte Ireland to develop new interpretation onsite and Loop Head secured €868k for the redevelopment of two light keepers cottages and revamp the visitor reception area.

▼ Pictured below are representatives from the 13 organisations who operate Great Lighthouses of Ireland at a Partners Meeting in Irish Lights.



Shining a Light for Maritime Mile - Community Engagement

As the location for a lighthouse since the 1850s, the Great Light now stands in all of its glory along the Maritime Mile. Looking out across the former industrial epicentre of Belfast, the 19th century lighthouse optic dates back to 1887. Just as it acted as a guide for former shipping communities on both Tory Island, Co. Donegal and Mew Island, Co. Down, the Great Light is now serving as a beacon of opportunity for local communities to explore a thriving part of Belfast city. Led by Titanic Foundation, the charity set up in 2008 to oversee the development of Titanic Belfast and to promote and preserve Belfast's maritime and industrial heritage through this new shared space for the whole of Northern Ireland. Over 300,000 people have visited the Great Light since it opened in 2017. For further information please visit www.greatlighttq.org



Lighthouses connecting with the Irish Diaspora

Great Lighthouses of Ireland collaborated with Conradh na Gaeilge's 'Cultúr Club' on an exciting project to promote lighthouses to the Irish diaspora abroad. A series of fun activity books were developed for children aged 6-16 themed around lighthouses.



Great Lighthouses of Ireland presenting at the world's biggest tourism trade fair ITB Berlin

Great Lighthouses of Ireland was delighted to be represented at ITB Berlin, the world's biggest tourism trade fair.

A replica of Fanad Lighthouse was created as the main exhibition stand for Fáilte Ireland and Tourism Ireland's display and thousands passed through the stand, drawn to its unique design and interactive design to find out more about Ireland's wonderful lighthouse offerings. The fair ran from 6-10 March 2019.

Events took place over the week with Brendan Griffin, Minister of State for Tourism & Sport and Fine Gael TD for Kerry and Michael Collins, Ambassador of Ireland to Germany, and with Fáilte Ireland and Tourism Ireland.

Irish Lights launches its Archive Project

Experts from the Royal Irish Academy who evaluated the Irish Lights' Archive described it as a "great untapped source for the maritime, social, political, military, engineering, architectural, scientific and administrative history of Ireland in the nineteenth and twentieth centuries". It also contains material known to be lost or destroyed in other collections and is a major source of information on the history of modern Ireland.

The project goal for Irish Lights is to bring its archive up to best international standards, unlock its rich historical content, and make it available to researchers and outreach programmes required to satisfy the high public interest in Irish Lights.

Niamh Collins (pictured right) joined Irish Lights earlier this year as Archive and Heritage Officer. Building on the excellent work completed by Frank Pelly, Irish Lights' consultant curator, she leads this important project to catalogue, digitise and conserve the archive.



FROM THE ARCHIVE

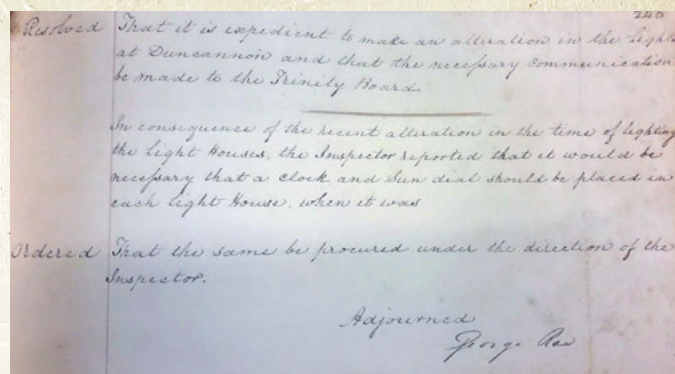
Lighting-up Time

What time are Lighthouses lit?

In the early 19th century the answer depended on who you asked. Up until this time Irish Lighthouse Keepers were required to estimate the time at dusk and dawn when they should light and extinguish their lanterns. The issue was brought to the fore in the Board Minutes of 1832 with a letter from the Commander of the Royal Mail paddle steamer 'Crocodile', who complained to the Irish Lighthouse Authority that his vessel was put in danger while entering Waterford Harbour due to the light at Hook Tower not being exhibited until well after dusk. He requested that the lighting-up and extinguishing times at Irish Lighthouses be regulated, as was the case in Trinity House.

The difference in timings arose with Trinity House instructing Lighthouses 'to Light up every evening at Sunset' while under the Ballast Office in Dublin the Light Keepers were ordered 'to Light when it is dark, thus leaving it to the care and accuracy of each individual Lightkeeper to determine the difficult question, when twilight ends and when darkness commences'.

The Board ordered George Halpin, Inspector of Lighthouses, to carry out a full investigation. Halpin clarified that Lightkeepers in Ireland were ordered to Light 'at the going away of daylight in the evening when the adjacent land or coast becomes in the least indistinct, not when it is dark...' He states that he has never received a complaint from other Commanders of Steam Packets and concludes that 'it would be injudicious and



perfectly unnecessary to alter the time now observed for Lighting'. This resistance to change may also have been due to the cost of sperm oil, which was used at the time to fuel the lamps.

Dissatisfied with this response, further petitions followed from the Lord Lieutenant of Ireland, the Post Master General and the Admiralty. This pressure resulted in the Board ordering 'that the regulations of the Trinity Board as to Lighting the Light Houses will be adopted' and agreed to supply each of its 24 major Lighthouses with a clock and sundial with which to ensure its constant accuracy. The first of the new dials was duly installed at Hook Point in 1833 and is still retained at that station.



BOARD NEWS from Irish Lights

Working Inspections 2019

Board inspections are an important part of the Board's annual activities enabling Commissioners to review coastal activities and meet local stakeholders. In 2019 the Board completed two inspection programmes.

The first working inspection took place from the 5th – 7th of June 2019 and covered the following stations along the South East Coast: Wicklow Head, Hook Head, Dunmore East, Ballinacourty, Mine Head, Ballycotton, Roche's Point and Old Head of Kinsale. The second inspection programme took place from the 15th to the 17th of August and covered stations along the North East including Inishtrahull, Rathlin West, Rue Point, Rathlin East, Maidens, Donaghadee, St. John's Point. The property at Ferris Point was viewed from Granuaile when entering and leaving Larne Lough.

The inspection parties reviewed planned and delivered consolidation works and associated new technologies. In addition, policy issues relating to heritage, property maintenance and management, alternative power and lights sources, the Great Lighthouses of Ireland initiative and local aids were reviewed.



Irish Lights Board Update

The Board of Irish Lights meets throughout the year and oversees the implementation of the Irish Lights Strategy: Safe Seas – Connected Coasts 2018-2023 together with the effective and efficient operation of the organisation.

In addition to the main Board and subcommittee meetings, this year the Board also participated in successful workshops on the topics of Health and Safety and Corporate Governance.

Six new Commissions joined the Board in 2019: Mr Andrew Jones, Dr Sally Montgomery and Ms Olive Hill and three Dublin City Councillors Cllr Dermot Lacey, Cllr Danny Byrne and Cllr Donna Cooney.

As 2019 ends, we also mark the end of John Coyle's term as Chairman of Irish Lights. Our thanks and congratulations to John on a very successful three-year tenure. We deeply appreciate his commitment of time, expertise and experience and the invaluable contribution he has made to the development and operation of Irish Lights over the period 2017-2019.

(Left) John Coyle, outgoing chairman of Irish Lights



New Joiners to the Board of Irish Lights

Andrew Jones

Andrew is a Chartered Accountant, and was most recently Chief Financial Officer of V.Group, a leading independent provider of global marine support services. He has 30 years of international finance experience of public and private markets, leading several very significant financial transactions. He currently works on a number of international private and not-for-profit Boards in a non-executive capacity. He is an RYA Coastal Yachtmaster with extensive experience of both inshore and offshore yacht racing. He is a member of the Royal Irish Yacht Club, and currently resides in Dublin and London.



Dr Sally Montgomery (OBE)

Sally has been a science educator for over 40 years and currently works at Aberdeen Science Centre as a client representative for their £5m redevelopment project. She was an independent consultant for many years providing expert advice on the establishment of visitor attractions, particularly around science education including, Explora the new Science Centre in Malta, the Great Light in Belfast and development proposals in Kuwait, St Petersburg, and Dún Laoghaire Harbour. Sally established and was CEO of W5 at Odyssey, consistently one of the top visitor attractions in Belfast. She is currently a Board member of the Titanic Foundation Ltd., Chair of Newry Mourne and Down District Council's Task and Finish Board for the restoration of Castletwellan Forest Park, and a former Board member of the Northern Ireland Tourist Board, Belfast Visitor and Convention Bureau and Tall Ships Board



Olive Hill

Recently retired, Olive was Executive Director for Business Strategy Implementation, in Invest Northern Ireland. In this role she has led on the development and execution of a new business strategy for Invest Northern Ireland, targeting economic growth through job creation, increased exports and innovation. Prior to this Olive was Director of Innovation & Technology Solutions at Invest Northern Ireland where she led a team of engineers and scientists providing advice and support to businesses across a range of disciplines including sustainable development, design, innovation, e-business and intellectual property. Olive is also a non-executive trustee with Victim Support Northern Ireland and was previously a non-



executive with LEDCOM one of a network of local enterprise agencies. She is very familiar with the marine sector in Northern Ireland, particularly opportunities emerging from the renewable energy sector. Olive is an enthusiastic coastal rower.

Dermot Lacey

Dermot Lacey has been a member of Dublin City Council since 1993 and served as Lord Mayor of Dublin in 2002-2003. He is a former Chairperson of the Housing, Finance and Arts Committees and of the Dublin Regional Authority, the Southern and Eastern Regional Assembly and the Eastern and Midlands Regional Assembly. The only person ever to have served in all three posts. He is Leader of the Labour Group on the Council. He is a member of the board of the Royal Hospital Voluntary Housing Association and the Royal Hospital and was co founder of the popular News Four Newspaper. Dermot is a member of the City of Dublin Education Board and Chairperson of several of their Colleges. He is a former member of the Board of FAS (the State Employment and Training Board), the Dublin Docklands Development Council and the UCD Governing Authority.



Danny Byrne

Danny Byrne was appointed to the board of the Commissioners of Irish Lights after being elected to Dublin City Council in May 2019. His family history is steeped in the commercial fishing industry and in the lighthouse service. Both his Grandfather Jim Byrne and his Grand Uncle Paddy Byrne were Lighthouse keepers, both at St. Johns Point in Co. Donegal. He also serves as a member of the city wide Policing Committee and The Economic Development & Enterprise Strategic Policy Committee on Dublin City Council. He works as an Estate Agent and is a member of the Poolbeg Yacht & Club & The RDS.



Donna Cooney

Donna Cooney is a member of the Green Party and was elected to Dublin City Council in 2019. Donna has been a community activist for 25 years, working to protect Dublin Bay, the Promenade, St. Anne's Park, and Fairview Trees & Park. She has campaigned for the protection of our beautiful natural and built heritage in Dublin Bay, enhanced public transport, with a well designed, safer cycling and walking environment. Making communities strong and resilient so we can meet the challenges of Climate Change.



Working with our colleagues in **Trinity House** and **Northern Lighthouse Board**

Joint Strategic Board Update

The General Lighthouse Authority 'Joint Strategic Board' (JSB) meets twice a year and is comprised of the Chairman, CEO and non-executive Director from Irish Lights, Trinity House and Northern Lighthouse Board. The purpose of the JSB is oversee and co-ordinate strategic activities which are of value and benefit to all three organisations. In 2019, the JSB focused on the future of the DGPS service, the operational challenges surrounding Brexit, ship replacement in Trinity House and Northern Lighthouse Board, continuing oversight of efficiencies and ensuring value from the shared research and development activities undertaken by GRAD. During the year, Captain Nigel Palmer of Trinity House finished his term as Chairman of the JSB. Our thanks and appreciation go to Nigel for his great work over the last three years. Mr Mark Barr of Irish Lights has been appointed Chairman of the JSB for the next two years.



General Lighthouse Authorities Collaboration – Delivering Excellence and Efficiency

One of the signs of a successful system is that you don't notice it working. The General Lighthouse Authorities (GLA) of the United Kingdom and Ireland, Trinity House, the Northern Lighthouse Board and Irish Lights, collaboration is one such process. Across the three GLA there is ongoing day to day collaboration in relation to ship cover, aircraft services, insurance, research & development, procurement, technical support and safety. This close inter GLA working delivers

improved services and response times for our users and value for our funding stakeholders. The day to day nature of this activity is critical to Irish Lights' effectiveness.

Collaboration is also effected in a more formal way through Inter GLA Committees dealing with HR, Finance, Legal, Requirements & Delivery, Procurement, Safety and ICT. At the highest levels of our organisations the Chief Executives Committee and the Joint Strategic Board (JSB) ensure alignment of our strategic and high level activity. The GLA also cooperate in stakeholder engagement, activity at IALA and third party groups relating to areas such as Offshore Renewables, Autonomous Vessels and Search and Rescue. Key committee deliverables this year include the decision on the future of Differential Global Positioning System (DGPS), an agreed position with JSB on Resilient Positioning, Navigation and Timing (PNT), joint safety inspections, insurance renewals, IALA consideration of Legal aspects of European Geostationary Navigation Overlay Service (EGNOS) as an AtoN, Peer Review of 2020 AtoN review proposals, support for Trinity House and Northern Lighthouse Board ship replacement projects, improved R&D processes, and improved fleet management and reporting.

Irish Lights hosts Inter-General Lighthouse Authority Committee (IGC) Forum

Irish Lights welcomed colleagues from Northern Lighthouse Board (NLB) and Trinity House to the Inter-General Lighthouse Authority Committee (IGC) Forum on 7th & 8th February. Irish Lights held the IGC Chair this year which saw a series of meetings taking place over the course of two days highlighting the important work of each individual IGC. Presentations and workshops were given across Human Resources, Finance, Legal, Requirements and Delivery, Safety, IT, Procurement and GRAD. Breakout session topics included cyber security and operational technology, 2020 AtoN Review, new visual AtoN technology, Brexit, Professional Growth, Safety, and GRAD hosted a session on EGNOS, SBAS and DGPS.



IGC Forum

OTHER NEWS in Irish Lights

IALA Transition from NGO to IGO Nearing Completion

IALA, the International Association of Marine Aids to Navigation and Lighthouse Authorities, was founded in 1957 as a technical organisation to foster collaboration in the provision of Marine Aids to Navigation. As a Non-Governmental Organisation (NGO) IALA has been remarkably successful in developing internationally accepted standards for Marine AtoN and fostering a quality approach in worldwide AtoN provision. With over 300 members worldwide including 82 National Coastal State members and 220 Industrial members IALA has grown to be a significant force in delivering maritime safety. The increasing importance of IALA was underlined by the work undertaken in collaboration with IMO on the specification and delivery of e-Navigation. Following consideration by members it was agreed in 2013 that IALA should change its status by registering under the Vienna Convention as an IGO.

In March 2019, Department of Transport Tourism & Sport (DTTAS) and Irish Lights represented Ireland at the Third Preparatory Diplomatic Conference on the transition of IALA to Inter-Governmental Organisation status.

The transition process was lengthy and complex as members placed considerable importance on developing an IGO model that would retain the close technical collaboration that is the hallmark of IALA while still recognising its increased international importance. At the Third Diplomatic Conference in Istanbul 182 delegates representing 53 countries approved all but a small number of articles of the draft Convention text and agreed that the final Diplomatic Conference to approve the establishment of the IGO would be held in February 2020.

Ireland have been active contributors to IALA since its establishment in 1957. DTTAS and Irish Lights will again represent Ireland in February 2020 at the Final Diplomatic Conference to conclude the IGO process.

SeaFest

Ireland's largest maritime celebration, SeaFest, held this year at the Port of Cork in Cork City attracted thousands of visitors over the weekend. SeaFest is a key goal of Ireland's national marine plan, Harnessing Our Ocean Wealth, which aims to increase participation and engagement with the sea.

Cork city was transformed into a giant interactive 'sea world' for the three day festival and there were activities and entertainment for those of all ages. There were open tours available on a number of vessels in the ship filled harbour and there was no doubt that ILV Granuaile was a key attraction for

all. Over 3,700 people passed through the ship on Sunday alone. Visitors also had the opportunity to learn more about Irish Lights and the work we do and there huge interest in the light and technology displays.

The festival also included the Our Ocean Wealth Summit and special guests included John Kerry, former US Secretary of State, and the Presidents, Foreign Ministers or UN Ambassadors from 31 Small Island Developing States. Yvonne Shields O'Connor, Irish Lights CEO, spoke at the Summit, which had an audience of 700 people, and shared key insights on the organisation and Great Lighthouses of Ireland. During the Summit Minister of State, Damien English launched the Marine Planning Policy Consultation.

To coincide with the festival, Roches Point was one of three of our sites that turned blue to mark 'Go Atlantic Blue' for World Ocean's Day. The Baily and the Great Light in Belfast also joined in.



The Irish Lights' Team at SeaFest getting cooking tips from Nevin Maguire who was one of the 3,700 people who stopped by for a visit on ILV Granuaile.





Chairman John Coyle and CEO Yvonne Shields O'Connor welcome HRH The Princess Royal to Irish Lights.



Stephen Kelly, Derek Hay and Peter Lambe greeting HRH The Princess Royal.

Visit of HRH Princess Anne to Irish Lights

Irish Lights welcomed HRH The Princess Royal to its Dun Laoghaire headquarters, the ILV Granuaile and to tour some of its lighthouses including the Baily Lighthouse, Rockabill and Kish Lighthouse in April.

The visit by The Princess Royal, in her role as Master of Trinity House and patron of the Northern Lighthouse Board, marked the important, historic and ongoing relationships between the Lighthouse Authorities of Great Britain and Ireland. For over 150 years the Commissioners of Irish Lights has worked in an integrated partnership with Trinity House and the Northern Lighthouse Board. This active partnership sees the three



Accompanying HRH The Princess Royal is His Excellency, the British Ambassador Mr. Robin Barnett, his partner Agnieszka Kepka, with John Coyle, Eoghan Lehane and Yvonne Shields O'Connor.

authorities co-operating on a daily basis to deliver a range of services to ensure safe navigation around the Irish and UK coasts, meeting the Irish and UK governments' obligations under the Safety of Life at Sea Convention.

During the visit, The Princess Royal met employees to learn more about Irish Lights' operations and future plans at the Irish Lights headquarters in Dun Laoghaire. The Princess Royal was also shown the critical sea going activities of Irish Lights with a visit to the Granuaile, Irish Lights multi-functional vessel. In addition the Princess Royal visited some of Irish Lights most famous lighthouses including the Baily, Rockabill and Kish.



During her visit Princess Anne met with employees at a reception in Dun Laoghaire followed by a tour on ILV Granuaile to lighthouses at the Baily, Rockabill and Kish.



IALA World Aids to Navigation Day

On 1st July, Irish Lights joined with other lighthouse authorities worldwide to mark the inaugural World Marine Aids to Navigation Day. The purpose of this initiative is to promote safe navigation at sea and to highlight the role of marine aids to navigation (AtoN) in global maritime safety to the wider public. World Marine Aids to Navigation Day was being led by IALA.

Maritime Safety Week

World Aids to Navigation Day fell at the beginning of Maritime Safety Week (1 – 5 July), held by the Department for Transport, United Kingdom.

Everyone with an appreciation of the various types of marine aids to navigation was encouraged to take to social media to share their favourite AtoNs with #WorldMarineAtoNDay and to support Maritime Safety Week with #MaritimeSafetyMatters.



Irish Lights made a submission to the Department for Transport's UK's Marine Safety Plan published in July 2019. The full report is available on www.gov.uk website.



World Maritime Day

World Maritime Day took place on 26th September, the theme of which was "Empowering Women in the Maritime Community". IMO selected this theme to raise awareness of the importance of gender equality, in line with the United Nations' Sustainable Development Goals, and to highlight the important contribution of women within the maritime sector.

To mark the occasion Irish Lights led and hosted the inaugural **Women in Marine Conference and Networking Event** in the

Buoy Shed. The event was sponsored by Irish Lights, BIM, Marine Institute, Enterprise Ireland, Department of Transport, Tourism and Sport, Sea Fisheries Protection Agency, Port of Galway and Port of Cork.

Over 150 women from all areas of marine including shipping, ports and harbours, logistics, fishing, engineering, seafood, aquaculture, offshore energy, marine tourism, policy regulation, research and education joined to hear from an impressive line-up of speakers and to engage in round table discussions on key issues in the sector.



Open House Dublin

Irish Lights' Dun Laoghaire office opened its doors to the public on Sunday, 13th October 2019 as part of the Irish Architecture Foundations Open House Dublin initiative. Over 400 people joined on the day and got to see and hear more about the great work being done in Dun Laoghaire and around the coast.



Employee Update

Career Development

Section 6 of the Strategy Safe Seas – Connected Coasts 2018-23 states “Irish Lights will actively encourage the career long professional growth and development of employees”. Irish Lights does this by supporting employees to reach their potential and by empowering them to take ownership for their development.

The Senior Management Team developed a Competency Framework and in March 2019, as part of the Professional Growth and Development initiative, the Irish Lights Competency Framework was launched. This is supported by the Competency Development Guide.

Competency Development is critical from an organisational development and succession planning perspective. The framework has four Core Competencies – Personal Responsibility, Manage Work, Communicate Effectively and

Teamwork; and four Management Competencies – Leadership, Drive for Results, Strategic Thinking and Support Others.

The Core and Management Competencies have been incorporated into the Professional Growth and Development initiative. The other developmental steps in the initiative cover Mandatory Training, Technical Skills & Knowledge and Other Development.

The Competency Framework has been integrated into our updated Performance & Development System which facilitates the preparation of individual training and development plans for each employee.



Training & Development

Irish Lights places a high value on training and professional development and is committed to actively supporting its employees. Our training and development activity encompasses many areas, from health & safety, soft skills, technical training and further education.

Some highlights from 2019 included:

- *IALA Manager AtoN Training*: 5 employees are participating in this 3 module IALA course run by Trinity House. It includes training on all aspects of Marine Aids to Navigation from planning, risk assessment, provision and maintenance.
- *Presentation Skills*: To support us in the important business of communicating effectively with stakeholders 21 of our employees attended this fast-moving day which involved participants being videoed so that they could assess their own skills.
- *Mental Health Awareness*: In September our Directors and Senior Managers attended this vital workshop which aims to raise awareness of this important issue within the workplace.

In terms of further education:

- Sinead Barry, Coastal Operations successfully completed a Certificate in Health, Safety and Welfare at Work with NUI.
- Anthony Carey, CIL DL & Buoy Lead, is commencing his final year of a Degree at DIT in Property & Facilities Management.
- Patrick Carty, Data & Communications Engineer, is progressing with his Masters in Computing (Forensics & Security) with DCU.

Granuaile employees have also been very active in progressing their education:

- John Dawson, Senior Operations Officer, is studying towards a Masters in Maritime Management at Jade Hochschule, Germany.
- Rory O'Rourke, Engineering Operations Manager, has recently embarked on an online Masters in Project & Programme Management at UL.
- Gavin Walsh, Operational and Maintenance Operative, Deck is undertaking a special award in Nautical Studies at the National Maritime of College of Ireland.

Within Human Resources, Rachel Barry, HR Support, is studying towards a Diploma in Human Resources Management at IBEC/Technical University Dublin.

The above illustrates just some of the developmental activity undertaken by Irish Lights employees each year.

Recruitment

In the past twelve months, thirteen new employees joined the organisation in a variety of roles.

February saw **Ronan Boyle**, our new Director of eNavigation and Maritime Services, join the Senior Management Team. Ronan has a BSc (Hons) in Information Technology and an MSc in Technology Management. He also holds an MA in Leadership, Management & Defence Studies. Ronan has wide ranging experience in navigation, communications, technology and engineering and is leading the delivery of key elements of our new strategy in terms of eNavigation.



In March, **Peter Foster** joined the crew of the Granuaile on the Red Watch. Peter is responsible for catering. Peter worked with the Irish Naval Service for over 23 years and has extensive experience in the catering industry, both on and offshore.

Susan Murdock returned to Irish Lights in March and in July, Susan commenced a specified purpose contract as HR Advisor to cover Gayle Donnelly's maternity leave. Susan is an experienced HR practitioner and brings valuable knowledge to the HR team.



Niamh Collins joined the Corporate Services Department as our Archive and Heritage Officer in April. Niamh has over 10 years' experience in the archiving profession. She has an MA in Archives and Records Management, an MA in Classical Civilisation and a BA in International in English and Greek & Roman Civilisation. Niamh will play a vital role in helping us to complete our Archive Project.



In June, four new employees joined our eNavigation and Maritime Services Department. **Catriona Dowling** is our new Navigation Services Manager. Catriona is a qualified Master Mariner and holds an MSc Shipping Operations and a BSc (Hons) in Nautical Science. Catriona brings a vast amount of experience to the role.



Peter McCarthy joined the Design Team as a Design and Support Technician. Peter has a Diploma in Electro Mechanical Engineering and a large amount of CAD experience.



Rowan MacSweeney joined the Granuaile as an Operations Officer. Rowan has a Diploma in Nautical Science and a Diploma in Marine Surveying. Rowan has worked as Master, Chief Officer, Second Officer and Third Officer on a variety of vessels.



Michael O'Shaughnessy also joined the Granuaile as OMO (Engine). Michael has over 13 years' seagoing experience and brings a large amount of knowledge to the team.



Maria O'Connell joined as Programme Manager – Projects and Policy Support in July. Maria holds a BA in Geography, a Post Graduate Diploma in Science (Environmental Protection) and a Diploma in Law and she is currently studying for a Masters in Science - Coastal and Marine Environments. Maria has a background in Environmental Enforcement and Compliance.



In August, **Niall Haughton** and **Rony Romaniello** joined the team. Niall is a Support Operative in the Coastal Operations Department. Niall holds a FETAC Level 5 Certificate in Furniture Design and a QQI Level 6 in Smart Building Technology. He has over 13 years work experience and brings a variety of skills to the team.



Rony is the Payroll/Accounts Administrator in the Corporate Services Department. Rony has FETAC Level 5 Certificates in Manual and Computerised Bookkeeping and Payroll, Computerised Payroll and Manual and Computerised Accounts and has a number of years' experience.



Aidan Ryan joined the Coastal Operations Department in September as an Electronic Technician. Aidan holds a BSc (Hons) in Electronic Systems and a BEng in Electronic Engineering. He has three years post graduate work experience and recently relocated back to Ireland from London.



Liam Hyland joined the Granuaile as Operations Officer at the end of September. Liam holds a BSc (Hons) in Nautical Science and Class 2 (Chief Mates) Unlimited. He also has a BA (Hons) in Leadership and Management. Liam has an extensive amount of deep sea experience.



Stephen Farrell joined the Coastal Operations Department as a Support Operative at the start of December. Stephen has over 18 years' work experience and brings a wide variety of skills to the team.



In addition to our new joiners, we also had an internal appointment. In April, **Harry Duggan** was appointed as Senior Operations Officer on board the Granuaile. Harry has been with Irish Lights for a number of years and has gained experience both on the Granuaile and in the office.

Retirees

As well as welcoming new employees to Irish Lights we also bid farewell to a number of colleagues. A Retiree Event was held on Thursday September 5th in Dun Laoghaire to recognise and pay tribute to the dedication and service of some of our former colleagues who retired during the previous 18 months. Between them, they have served for over 260 years! It was a perfect opportunity to catch up with old friends and to hear some wonderful stories. Each retiree was presented with a print of an original drawing of a light house station. Kieran Crowley, our Vice Chairman, was on hand to present the gifts to those who attended on the day (see overleaf)

We would also like to pay tribute to the following retirees who unfortunately couldn't attend on the day:

- Rory Mullins, Navigation Services Manager: 21 years
- John Griffin, Attendant Copper Point: 41 years
- Colin Day, Design & Support Engineer, 28 years
- Mick O'Reilly, Electronic Technician, 35 years

Leavers

The following employees left during the year. We wish them all the best in their future endeavours:

- Kevin Whitney, Senior Operations Officer
- Charles Lee-Doyle, Design and Support Technician
- Michael Lewis, Programme Manager
- Neil Askew, Marine Support Officer
- Teresa Naughton, Payroll/Creditors Administrator
- Karl Collins (pictured) completed his Electrical apprenticeship in August. In the past 4 years Karl has gained a large amount of experience and knowledge, both in the workshop and on the coast. He really embraced his apprenticeship, was always willing to learn and did a fantastic job. Karl is very highly thought of by all his colleagues and friends in Irish Lights and we wish him all the best in his future career.



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BEST WISHES TO ALL OUR 2019 RETIREES



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Anthony Hynes, Support Operative: 20 years

Patrick Keoghan, Coast Tradesman: 41 years

Kevin McCann, Support Operative: 36 years

Dillon McCarthy, Attendant Ferris Point: 42 years

Ed O'Connell, Support Operative: 45 years

Eamonn Usher, Monitoring & Support Officer: 39 years

Noel Wheeler, OMO (E), ILV Granuaile: 38 years

Social



Irish Lights take on the Quest Adventure Race

On April 6th over 1,500 participants tackled this impressive 43km event involving cycling, running and kayaking around the Wicklow mountains and Glendalough. This involves a high level of fitness and the Irish Lights team (Luke Robinson, Gerry McGuinness, Derek Hay, Roger Valentine & Nick Halpin) trained very hard! Thankfully, after a wet and misty start, the day brightened up and everyone made it in one piece to the finish line at Laragh GAA!

Above: LtoR: Luke Robinson, Gerry McGuinness, Derek Hay, Roger Valentine & Nick Halpin

Lugnaquilla Hike

The Irish Lights walking club (Derek Hay, Brendan Coyne, Colin Ball, Mark Purdy, Karl Birrell and Gerry McGuinness) took on Lugnaquilla in the Wicklow Mountains on 17th May.

This is a 17k hike and took about 6 hours to complete – that's a lot of walking! Thankfully there were a few refreshments at Glemmalure afterwards!

Foreground: Gerry McGuinness. Background: Mark Purdy, Colin Ball, Brendan Coyne



For The Safety of All

Irish Lights' core health and safety objective is to ensure that none of its employees suffer an injury or ill health while carrying out their work and that they return home to their families and friends at the end of the day in at least as good health as when they arrived. Our employees are our most important assets and ensuring they remain healthy and don't suffer an injury or ill health is the corner stone of our health and safety strategy. This objective also extends to visitors and contractors working on Irish Lights' behalf. It is not a matter of putting safety before business but striving to do our business safely. Keeping the importance of safe working practices to the fore in all operations and employing a proactive and risk assessment based approach to safety management are the key tools used to help make this objective a reality.

So how did we do in 2019? Our target is to have zero accidents on duty and while some see this to be an unreasonable or unachievable expectation 298 out of the 304 days between 1st January and 31st October 2019 were accident free which proves that it can be done. This, of course, means that there

were 6 days when things didn't go according to plan. Nobody sets out to have an accident or to be injured at work; however, unfortunately accidents do happen – our challenge is to reduce the number of accidents and, where they do happen, to minimise the severity and consequences of their impact. All accidents are investigated to ascertain the root cause and identify measures to prevent a recurrence.

Somewhat uniquely Irish Lights covers most of the engineering disciplines and trades including civil, electrical, electronic and mechanical. Add spray painting, wood working, boating, buoy work, lighthouse maintenance, helicopter operations to the mix, and you can appreciate that the list and range of hazards faced on a day to day basis is considerable. In addition we shouldn't forget the Administration building in Dun Laoghaire where colleagues face a different suite of hazards all of which need to be managed carefully.

Our multi-disciplined maintenance and project teams continue to work closely with Granuaile allowing for the sharing of

resources and, as with the responsible withdrawal from Maidens Lighthouse earlier in the year, providing a platform for receiving obsolete equipment and materials that were transported from the station using the contract helicopter. While the maintenance and project teams on the coast continued to keep the lights shining, the Dun Laoghaire based team continued to deliver on the buoy production programme, support work on the coast and maintain the Dun Laoghaire facility.

Good planning and a keen attention to detail is vitally important in ensuring that the job gets done safely. Having said that the work carried out on a day to day basis throughout the year on the coast, on board Granuaile and in Dun Laoghaire only gets done because of the skill, experience and competence of those carrying out the tasks.

Following the discovery of elevated mercury vapour readings on Fastnet Lighthouse in the summer of 2018, a consultant was engaged to survey all of our Lighthouses that currently have or have had mercury in the past and test for the presence of mercury vapour. This work was carried out between July and September and involved 26 lighthouses. As expected, mercury vapour readings were detected at all lighthouses; however, there were at very low levels and do not present a health risk to people working at or visiting the sites.

Good planning and a keen attention to detail is vitally important in ensuring that the job gets done safely.

The Great Lighthouses of Ireland (GLI) continues to be a very successful initiative going from strength to strength with Operators reporting increased visitor numbers and a noticeable bounce for local economies. A key element is that the Operators are taking responsibility for managing their own activities and their visitors on our sites. Notwithstanding this, as owners of the sites we wanted to look at them in the context of visitors arriving on the sites and satisfy ourselves that we had considered the risks. The services of a UK based Consultant with considerable experience in visitor safety was engaged to visit a number of sites and prepare Visitor Risk Assessments and Safety Reports for each. The Visitor Risk Assessments and Safety Reports have been shared with the respective Operators so that any issues raised or observations made can be considered by the Operators when reviewing and updating their own Visitor Risk Assessments.



Irish Lights Network of Coastal & Marine Infrastructure





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EMERGENCY NUMBER

If you notice any aid to navigation is not
functioning correctly please contact our
24 hour emergency number **01 280 1996**