



RINA AFFAIRS

SEPTEMBER/OCTOBER 2020

The Newsletter of the Royal Institution of Naval Architects

CHIEF EXECUTIVE'S COLUMN



This is my last Report to the members before I hand over to Chris Boyd on 1 November, after more than 20 years with the Institution as its Chief Executive.

During those 20 years, the Institution has seen much change as it has sought to identify and meet the changing professional needs of its members, as it has done since its foundation in 1860, and it has been a privilege to have the opportunity to contribute to those changes. The Institution has continued to fulfil its founding mission statement (if such a term would have been recognised in 1860) of informing and encouraging discussion on technical developments, now through its wider range of publications and

conferences covering all sectors of the maritime industry. It has embraced digital media technology in its increasing use of online publications, eNewsletters and, more recently, online conferences.

The move of Headquarters to its present building which it now owns will provide an assurance for its future stability. The introduction of the Board of Trustees reflects a modern approach to the governance of the Institution which requires it to be a successful business if it is to be a successful professional Institution.

The Institution has rightly given increased priority to encouraging the younger members of the profession to be involved with the Institution as Associate Members and Student Members through the introduction of free membership and access to Institution activities such as its conferences. The Institution has developed links with 70+ universities and colleges. Awards and prizes have been introduced recognising their achievement. It has been a particular pleasure to meet with students, to present both the Institution and those awards.

The Institution has increased its international reach through its membership and the introduction of new Branches and Sections – for many members the opportunity to meet with other maritime professionals represents an important benefit of membership. The internationalism of the Institution has been recognised by the introduction of Regions and their representation on Council.

But what has not changed is the Institution's international standing and the respect which it enjoys throughout the global maritime industry and community. This has been very apparent to me as I have visited Divisions, Branches, Sections, universities and companies.

It has been both a unique privilege and a great pleasure to be the Institution's Chief Executive, and in particular to have been given the opportunity to meet with its members and those of the wider maritime community when representing the Institution globally. When the current difficulties are past and I can again travel, I hope I will be able to renew the many friendships I have made. I wish the Institution and its members every success for the future, as I do Chris Boyd whom I am sure will receive the support of the members as I have done over the past 20+ years – and will also enjoy being the Chief Executive, as I have done.

Trevor Blakeley

IN THIS ISSUE

10 Years On

The Chief Executive gives an update on the publication 'The Royal Institution of Naval Architects 1860-2010', looking at changes over the past 10 years.

YouTube

Over 40 videos of papers presented at conferences and Branch meetings can be viewed on the Institution's YouTube channel.

2021 Events Programme

Eighteen online and live events are currently planned for 2021.

Awards

Nominations for the Maritime Safety, Maritime Innovation and Elly Keary Awards are invited.

RINA Crest

What is the motto? Members may request to display the crest on their website?

Letters to the Editor

Letters include a request for information about the instability of *Royal Yacht Victoria and Albert*. Can you help?

Members wanted

Do you have a colleague who would benefit from membership of the Institution? If so, contact the Chief Executive.

Publications

"Bridging the Seas" by naval historian Larrie Ferreiro FRINA describes how the introduction of steam, iron, and steel required new rules and new ways of thinking for the design and building of ships.

MESSAGE FROM CHRIS BOYD

Dear members,

I thank you for your warm welcome and I would also like to extend my gratitude to our Chairman and the Board of Trustees for their welcome and support, and also in particular to Trevor for his excellent handover and patience.

I am thrilled to be here and excited to be appointed as the new CEO and I look forward to meeting all members and fully engaging with the maritime community over the coming months, but whilst I'm known to some members there will be others wondering who I am and what is my background?

Well I am a Naval Architect, but my maritime journey started a bit earlier than this when I joined the Royal Navy and ventured out to sea looking for adventure, and I certainly was not disappointed. A spark ignited inside me that remains and I was absolutely fascinated with the maritime arena that I found myself in.

Inadvertently the next step for me was to study Naval Architecture, and this is where I found RINA and straight away I felt part of an international maritime community and a place of learning.

Leaving University, I worked within the UK Ministry of Defence, but over the past years I have mainly focused on the offshore sector specialising in offshore construction, transportation and installation and infrastructure. I was a Director for an established marine consultancy and part of this role was managing the performance of marine operations and maintaining standards.

More recently I have consulted with various stakeholders in the offshore decommissioning and renewable energy sectors with regards to safety, environment, technological solutions and innovation, rules and regulation, automation etc.

I do have other interests and I enjoy keeping fit and active and I am certainly kept on my toes by my young family, albeit the football skills are not quite what they used to be.

I am looking forward to starting on the 1st November, and I wish you and your families well and remain safe during these turbulent times.

Chris Boyd

EILY KEARY AWARD

The Royal Institution of Naval Architects is committed to ensuring that all individuals, regardless of gender, faith or ethnicity, have equal opportunity to participate fully in all the Institution's activities. The Institution also seeks to encourage such equality of opportunity and involvement throughout the global maritime industry.

The annual **Eily Keary Award** recognises the contribution by an individual, organisation or part of an organisation to increasing equality, diversity and inclusion in their sector of the maritime industry. Such contribution may have been made by a specific activity or over a period of time. Individuals may not nominate themselves for the Award

Nominations are now invited for the 2020 Eily Keary Award.

The Award will be announced at the Institution's 2021 Annual Dinner.



Nominations may be up to 750 words and should describe the contribution which the individual, company or organisation has made.

Nominations may be forwarded online at www.rina.org.uk/EilyAward

or by email to EilyKearyAward@rina.org.uk

Nominations should arrive at RINA Headquarters by 31st Jan 2021.

Queries about the Award should be forwarded to the Chief Executive at: hq@rina.org.uk

2020 PRESIDENT'S INVITATION LECTURE

The 2020 President's Invitation Lecture entitled "Decarbonising Shipping" will be presented by Bo Cerup-Simonsen FRINA at 1600 on 26 November. Bo Cerup-Simonsen is the Executive Technical Advisor, Fleet Management & Technology at A.P. Moller – Maersk.

For the first time, the President's invitation Lecture will be presented online, using the Zoom platform. To register for the Lecture visit www.rina.org.uk/Events

INSTITUTION NEWS

Change Of Address

Each year, the Institution sends out over 170,000 copies of the magazines and *RINA Affairs*, a total paper weight of over 35 tonnes. Unfortunately, a number of those are returned "not known at this address", usually because members have forgotten to inform the Institution of their change of address. In addition to the waste of postage, the Institution is charged for those returned from other than the UK. Additional cost is then incurred when members ask for the missing copies.

Members are requested to let the Institution know of a change of address as soon as possible, preferably before they actually change their address. Changes may be sent online from the Members' Only section of the RINA website at www.rina.org.uk/members, by email to membership@rina.org.uk, by fax to +44 (0)20 7259 5912, or by letter to RINA Headquarters.

New Members wanted

An open letter to all members

Dear member,

As a member, you will be aware of the benefits and service which membership of the Royal Institution of Naval Architects provides. In particular, you will be aware that membership provides a professional qualification which is recognised throughout the global maritime industry as demonstrating the achievement of the highest standards of professional competence and integrity. You will also be aware that membership provides access to information on developments in all aspects of the maritime industry through the Institution's international conferences and publications which members receive free or at a reduced cost.

I am therefore writing to ask for your support in encouraging your colleagues to follow your lead in becoming a member of the Royal Institution of Naval Architects and enjoying the benefits of membership of the world's leading professional institution for those involved in the design, construction and maintenance of marine vessels and structures at all levels. I would be grateful if you would let me know (by email to hq@rina.org.uk) the name, position and email address of any of your colleagues who you would wish to introduce as a member. Such potential members could include those at any stage in their career, whether newly graduated or more senior and experienced.

Chief Executive

Designatory Letters

Members may signify their membership of the Institution by the letters FRINA, MRINA, AMRINA, AssocRINA and StudMRINA after their names. In doing so, they demonstrate that they have achieved or are working to achieve the high standards of professional competence demanded by the requirements for membership, and which are recognised as such by the international maritime industry. By doing so, they also demonstrate their commitment to maintaining those standards through their continuing professional development, and their acceptance of the Institution's Code of Conduct. Membership of the Institution does not come easily and is surely an achievement to be proud of.

However, when meeting members, I am surprised how many do not demonstrate their achievement by displaying the appropriate letters on their website, correspondence and business cards. This also serves to promote the Institution. I appreciate it may be company policy not to display designatory letters, but if not, may I therefore invite such members when next having stationary or business cards printed or updating their website to ensure that their membership of the Royal Institution of Naval Architects is proudly displayed.

Trevor Blakeley,
Chief Executive

The Royal Institution of Naval Architects 1860 – 2020

‘10 Years on’

In 2010, to celebrate the 150th anniversary of the founding of the Royal Institution of Naval Architects the Institution published the commemorative book ‘The Royal Institution of Naval Architects 1860 – 2010’. In the book, individuals gave their personal views on the development of the naval architecture profession and of the maritime over the past 150 years. Such views served to provide a history of the Institution as reflected in the history of the naval architecture profession and the maritime industry over that period. To celebrate the 160th anniversary in 2020, the Commemorative book has been republished as an eBook.

Time has not stood still since 2010 and neither has the Institution. The last decade has also seen significant change. In 2013, the Board of Trustees was formed, assuming the responsibility for the governance of the Institution, previously held by the Council, which became responsible for the professional activities of the Institution – much the same as the Council in 1860 – whilst the Board focused on the governance and financial management of the Institution. It was recognised that to be a successful, modern international professional institution, the Institution also required to be a successful business, and it was therefore considered that the governance of the Institution would be more effectively exercised by a Board of 12, rather than a Council of 50+.

In 2013, the Institution sold the 40-year balance of the 200-year lease on its Headquarters at 10 Upper Belgrave Street, and used part of the proceeds to purchase the freehold of its current Headquarters at 8-9 Northumberland Street. Such a move provides the Institution with the more modern facilities which it requires as an international organisation, but also provides a valuable asset which gives assurance that whatever the future of the Institution, that future lies in its own hands – at least as far as its Headquarters are concerned.

The third significant change during the past decade came in 2019 with the grouping of members’ countries into six global Regions, each with appointed Vice Presidents, and with members in each Region nominating and electing their own members of Council. The composition of Council therefore now reflects the international membership of the Institution. Such change will further demonstrate the internationalism of the Institution, and enable its members in all 90+ countries to take greater ownership and achieve closer engagement with their Institution.

I am not sure what the Chief Executive would be writing about the Institution in future decades but I believe that, as I wrote in the Foreword in 2010, he or she could be confident that John Scott Russell, Edward Reed, Nathaniel Barnaby and the others who formed the Institution of Naval Architects in 1860 would be proud of their legacy.

Trevor Blakeley, Chief Executive

‘The Royal Institution of the Royal Institution of Naval Architects 1860-2020 – 10 Years On’ may be downloaded as a pdf file and eBook at: www.rina.org.uk/res/INA%201860-2010%20%202010-2010%20Kindle.mobi (Kindle); www.rina.org.uk/res/RINA%201860-2010%20%202010-2020%20eBook1.epub (ePub); and www.rina.org.uk/res/RINA%201860-2010%20%202010-2020.pdf (pdf).

eBOOKS

Other eBooks published by the Institution – ‘Women in RINA – 1919-2019’ and ‘The Conservation Steam Boats’ – may be downloaded from the eLibrary at www.rina.org.uk/e-Library-Catalogue.html

THOUGHTS FOR THE MONTH

“Engineering is the art of modelling materials we do not wholly understand, into shapes we cannot precisely analyse so as to withstand forces we cannot properly assess, in such a way that the public has no reason to suspect the extent of our ignorance”,

Dr A. R. Dykes, 1946



USE OF THE RINA CREST

The Council has agreed that members may display the RINA crest on literature, website etc., under the following strict conditions:

- Members must request permission to use the crest, and state where it will be used.
- Only the version of the RINA crest provided by the Institution may be used. No variation or addition may be made to the crest.
- Members displaying the RINA crest are also required to display their membership of the Institution in text and by the use of the appropriate post-nominals.
- The RINA crest may only be displayed on a company website where the company is owned by the member or is a Corporate Partner member of the Institution.
- The RINA crest must not be used in a way as to state or imply the Institution’s endorsement of a product or service provided by the member.

LETTERS TO THE EDITOR

Instability of *Royal Yacht Victoria and Albert*

Sir: I'm a retired seafarer and a bit of a lifetime student of ship stability. I have just finished the autobiography of a late RN officer who spent a good period of time, during the 1920s, on board the *Royal Yacht Victoria and Albert*.

The yacht took a loll upon launching and consequently had a profound amount

of concrete placed in the bottom. Pretty straightforward. A secondary action was to not allow the vessel to go to sea with it's boats inboard. The officers were required to ensure the many davited boats were swung outboard before departure. This is why there are no photos of the yacht operating without all the boats outboard.

What is the stability principle whereby swinging the boats outboard improves a vessel's stability? I've looked extensively. This really has me puzzled. Can you kindly take a moment and enlighten me?

Richard Theedom
rtheedom.retired.98@gmail.com

"The Design and Loss of HMS Captain"

Sir: Can any member provide a copy of the following article by the late David K. Brown "The Design and Loss of HMS Captain", Warship Technology 7, (London 1980). All expenses will be refunded.

James Wells
atonterakunene@yahoo.com

Lake Windermere Ferry

Sir: The car ferry that crosses Lake Windermere is to be replaced in the near future. Currently it runs on two cables, 18 cars, diesel powered, under half a mile crossing. Can members advise on who in Europe are the design experts for such?

Paul Wrobel
p.wrobel@ucl.ac.uk

RINA - Lloyd's Register Maritime Safety Award

The Institution believes that safety at sea begins with good design, followed by sound construction and efficient operation. Whilst naval architects and other engineers involved in the design, construction and operation of maritime vessels and structures do not have a patent on such issues, nonetheless their work can make a significant contribution.

The Institution also believes that it has a role to play in recognising achievement of engineers in improving safety at sea. Such recognition serves to raise awareness and promote further improvements.

The Maritime Safety Award is presented by the Institution, in association with Lloyd's Register, to an individual, company or organisation which has made a significant technological contribution to improving maritime safety. Such contribution can have been made either by a specific activity or over a period of time. Nominations may be made by any member of the global maritime community, and are judged by a panel of members of the Institution and Lloyd's Register. The Award will be announced at the Institution's Annual Dinner.

Nominations are invited for the 2020 Maritime Safety Award



Nominations may be up to 750 words and should describe the technological contribution which the individual, company or organisation has made in the field of design, construction and operation of maritime vessels and structures.

Nominations may be forwarded online at:
www.rina.org.uk/maritivesafetyaward

or by email to:
maritivesafetyaward@rina.org.uk

Nominations should arrive at RINA Headquarters by **31 January 2021**

Queries about the Award should be forwarded to the Chief Executive at:
hq@rina.org.uk

YouTube

The following videos may be viewed on the Institution's YouTube Channel

Conferences

Human Factors conference (8 Papers)

- Moving Havens: An Application of the E-Navigation Service Route-Exchange
- 'One Hand for the Ship': The Development of Ergonomics Guidance for Access and Egress
- Human Factors Integration in Submarine Spatial Design
- The Operator's Stake in Shore Control Center Design: A Stakeholder Analysis for Autonomous Ships
- Human Factor and Automation: A STPA Approach to Enhance Ship Safety
- Improving Human-Centred Design Application in the Maritime Industry
- 'Designing in' the Human Element: Recommendations for Improvements to Vessel Accommodation
- The Community of Ship-handlers and Pilots: Training, Collaboration and Good Practice Today and...

LNG/LPG and Alternative Fuel Ships Conference (13 papers)

- Purpose designed LNG bunkering vessels (LBV): a 2020 update on characteristics and features
- A Comparison of Hydrogen and Ammonia for Future Long Distance Shipping Fuels
- The challenges of LH2 and LCO2 shipping
- A performance and emission investigation of a marine diesel fuelled with microalgae oil without c...
- Port Design for Small LNG Carriers
- Safe and effective application of ammonia as a marine fuel
- Safe and effective application of ammonia as a marine fuel
- Evaluation of LNG cryogenic energy utilization in seawater desalination on LNG fuelled ships
- Future fuels for commercial shipping

- Risk Assessment and Supply chain challenges of LNG as marine fuel
- MAN B&W Dual Fuel Engines
- A Review of Mooring System Solutions for FSRUs

Damaged Ship V conference (7 papers)

- Tanker Damage Stability: Historical Problems and Current Solutions
- The Digitalization of Navigation: Examining the Accident and Aftermath of USN Destroyer John S. McCain
- Stability Considerations for Offshore Transportation Vessels
- Past, Present and Future of Damage Stability Calculations
- SOLAS 2020 Damage Stability and beyond
- Damage prediction on stiffened structures by using Peridynamics
- Ultimate Strength Performance of a Damaged Container Ship

- Domestic Commercial Vessels Surveys in Australia
- RSV Nuyina – Australia's new ice breaker
- Controlling Marine Engine Emissions

Institution Presentations (9 presentations)

- The Royal Institution of Naval Architects - What it is - What it does
- 2018 President's Invitation Lecture
- 2019 President's Invitation Lecture
- Evolution of Computing
- Anatomy of Cargo Transport 2020 – 2050
- International Workshop on Waterjet Propulsion 2019
- Evolution of Computing
- The Royal Institution of Naval Architects
- RINA ED&I Event

Branch and Section Presentations (11 papers)

- Sandwich Plate System (SPS) a Structural Composite
- Wave-induced Motions and Loads in Ships using the Smoothed Particle Hydrodynamics Technique
- A New Lease on Life for Sydney's Iconic Dock
- Submarines, Space X and Star Trek, Same Story?
- Some Principles for Updating IMO's High Speed Craft Code
- Reducing the Vulnerability of RAN Maritime Platforms to Underwater Weapon Attack
- The Propulsion Energy Transition for High Speed & Light Craft
- The Hydrodynamic Design of the Queen Elizabeth Class Aircraft Carriers

www.youtube.com/channel/UChb1sfHbWfQmG-iwpp_QGJg

THOUGHTS FOR THE MONTH

"The behaviour of ships on stormy seas is so hard to be understood and so important to be predicted, that it is worth any amount of hard thinking, and painstaking observation, and subtle reasoning we can expend on it"

J. Scott Russell, 1863

PUBLICATIONS

“Bridging the Seas”

How the introduction of steam, iron, and steel required new rules and new ways of thinking for the design and building of ships

In the 1800s, shipbuilding moved from sail and wood to steam, iron, and steel. The competitive pressure to achieve more predictable ocean transportation drove the industrialization of shipbuilding, as shipowners demanded ships that enabled tighter scheduling, improved performance, and safe delivery of cargoes. In *Bridging the Seas*, naval historian Larrie Ferreiro FRINA describes this transformation of shipbuilding, portraying the rise of a professionalised naval architecture as an integral part of the Industrial Age.

Picking up where his earlier book, *Ships*

and *Science*, left off, Ferreiro explains that the introduction of steam, iron, and steel required new rules and new ways of thinking for designing and building ships. The characteristics of performance had to be first measured, then theorised. Ship theory led to the development of quantifiable standards that would ensure the safety and quality required by industry and governments, and this in turn led to the professionalisation of naval architecture as an engineering discipline. Ferreiro describes, among other things, the technologies that allowed greater predictability in ship performance;

theoretical developments in naval architecture regarding motion, speed and power, propellers, manoeuvring, and structural design; the integration of theory into ship design and construction; and the emergence of a laboratory infrastructure for research.

A copy of the book has been donated to the Institution's library by the author, who will be presenting the 2021 Post AGM lecture on the subject of his books.

The book may be obtained from the Publisher at <https://mitpress.mit.edu/books/bridging-seas>

RINA-QINETIQ Maritime Innovation Award

Innovation is key to success in all sectors of the maritime industry and such innovation will stem from the development of research carried out by engineers and scientists in universities and industry, pushing forward the boundaries of design, construction and operation of marine vessels and structures

The Maritime Innovation Award seeks to encourage such innovation by recognising outstanding scientific or technological research in the areas of hydrodynamics, propulsion, structures and material which has the potential to make a significant improvement in the design, construction and operation of marine vessels and structures

The Award is made annually to either an individual or an organisation, in any country. Nominations for the Award may be made by any member of the global maritime community, and are judged by a panel of members of the Institution and QinetiQ. The award will be announced at the Institution's Annual Dinner.

Nominations are now invited for the 2020 Maritime Innovation Award. Individuals may not nominate themselves, although employees may nominate their company or organisation.



QINETIQ

Nominations may be up to 750 words and should describe the research and its potential contribution to improving the design, construction and operation of maritime vessels and structures.

Nominations may be forwarded online at www.rina.org.uk/maritimeinnovationaward

or by email to: maritimeinnovationaward@rina.org.uk

Nominations should arrive at RINA Headquarters by 31st January 2021.

Queries about the award should be forwarded to the Chief Executive at hq@rina.org.uk

2021 EVENTS PROGRAMME

PLEASE NOTE

Due to the rapidly changing nature of events, conference dates and format may be subject to alteration

SURVEILLANCE, SEARCH, RESCUE AND SMALL CRAFT CONFERENCE

13-14 January 2021,
London, UK

SHIP CONVERSION, REPAIR AND MAINTENANCE

26-27 January 2021,
Online Conference

FULL-SCALE SHIP PERFORMANCE

10-11 February 2021,
Online Conference

WIND PROPULSION 2021

16-17 February 2021,
London, UK

DRY DOCK COURSE

2-5 March 2021,
London, UK

SHIPS' LIFE-CYCLE CONFERENCE

March 2021, London, UK

MARITIME INNOVATION/ EMERGING TECHNOLOGIES

March 2021,
Online Conference

THE ROAD TO MARITIME AUTONOMY

8 April 2021,
London, UK

ANNUAL DINNER

29 April 2021, London, UK

DESIGN & CONSTRUCTION OF SUPER & MEGA YACHTS

May 2021, Italy

CONTRACT MANAGEMENT FOR SHIP CONSTRUCTION, REPAIR & DESIGN

May 2021,
London, UK

HISTORIC SMALL SHIPS

June 2021,
Cumbria, UK

WARSHIP 2021

2-3 June 2021,
Bristol, UK

ICCAS 2021

28-30 September 2021,
Yokohama,
Japan

CONTRACT MANAGEMENT FOR SHIP CONSTRUCTION, REPAIR & DESIGN

October 2021,
London, UK

WATERJET PROPULSION 2021

October 2020,
London, UK

POWER & PROPULSION ALTERNATIVES FOR SHIPS

October 2021,
Online Conference

PROTECTING MARINE ENVIRONMENT THROUGH DESIGN, CONSTRUCTION AND OPERATION

November 2021,
London,
UK

THOUGHTS FOR THE MONTH

"It is true that improved results in ship-building have been obtained through accumulated experience; but it unfortunately happens that many of the theories by which this experience is commonly interpreted are interwoven with fundamental fallacies, which, passing for principles, lead to mischievous results when again applied beyond the limits of actual experience"

William Froude, (1875)

RINA AFFAIRS

The Institution is not, as a body, responsible for opinions expressed in RINA Affairs unless expressly stated that these are the Council's views.

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Digital RINA

It is the policy of the Institution to make full and effective use of digital media to inform and engage with members of the Institution and the wider maritime community. It achieves this through its publications – Technical Magazines, Transactions, Conference Proceedings, eNewsletters, YouTube, and Social Media.

Transactions

Members have online access to all papers published in the Transactions – IJME and IJSCT.

Technical Magazines

The technical magazines – *The Naval Architect*, *Ship & Boat International* etc – are published online and may also be viewed through the RINA Publications App which may be downloaded from the Google Play Store and Apple Store.

Technical eNewsletters

The Technical magazines each have their own eNewsletters – *The Naval Architect eNews*, *Ship & Boat International eNews*, etc – publishing significant articles contained in the current issue and material which did not make it to the magazines. The eNewsletters may be viewed online or through the RINA eNewsletter App, which may be downloaded from the Google Play Store and the Apple Store. Members and subscribers are advised through the eNewsletters and by App notification when a new issue is available to view.



Events News

Full details of the Events programme may be viewed online www.rina.org.uk/events_programme, or through the RINA



Events App, which may be downloaded from the Apple Store and the Google Play Store.

RINA eNews

RINA eNews is the Institution's regular email newsletter to members, reporting on the activities of members and the Institution. Occasional Special Issues of RINA News focus on Publications and Events.



RINA Affairs

Reports on Institution and members' activities are reported in RINA Affairs – the Institution's bi-monthly House Magazine. RINA Affairs may be read as a pdf file, online, or on the RINA Affairs App, which may be downloaded from the Apple Store and Google Play Store.

YouTube

Videos of presentations at conferences, Section and Branch meetings may be viewed on the RINA YouTube Channel: www.youtube.com/channel/UChb1sfHbWfQmG-iwpp_QGJg

Conference Proceedings

Delegates to RINA conferences may access the papers presented at the conference online, together with as the associated Powerpoint presentation, through the Institution's Dropbox account. Selected presentations are published on the Institution's YouTube Channel.

Social Media

The Institution's social media accounts on Facebook, Twitter, Instagram and LinkedIn provide the opportunity to update members and others on the Institution's activities, and for members to engage with the Institution and other members of the maritime community.

THOUGHTS FOR THE MONTH

"Engineering problems are under-defined, there are many solutions, good, bad and indifferent. The art is to arrive at a good solution. This is a creative activity, involving imagination, intuition and deliberate choice",

Sir Ove Nyquist Arup, (1895 -1988)