

# The Royal Institution of Naval Architects



## 2021 Annual Report

and

## Financial Statements

for the year ended 30 September 2021

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# Royal Institution of Naval Architects

## 2021 ANNUAL REPORT

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### OBJECTIVES OF THE INSTITUTION

The Objectives of The Royal Institution of Naval Architects are as set out in the Charter of Incorporation 1910 - 'the improvement of ships and all that specially appertains to them, and the arrangement of periodic meetings for the purpose of discussing practical and scientific subjects bearing upon the design and construction of ships and their means of propulsion, and all that relates thereto'.

Today, reflecting the wider range of activities of the Institution as both a professional institution and learned society, the Objectives of the Institution are more aptly described as "to encourage and assist in the achievement of the safe and efficient design, construction, maintenance and operation of marine vessels and structures."

These Objectives are primarily achieved by:

- Setting of internationally recognised and accepted standards of professional competence and integrity required for membership.
- Encouraging membership of the Institution at all levels
- Enabling of the exchange of technical information through the Institution's publications, conferences, and local meetings, which are open to all those involved in the design, construction, maintenance and operation of marine vessels and structures.
- Contributing its collective expertise to national and international maritime organisations for the benefit of the profession and society.

The Institution's specific Objectives in 2021 have been to increase the internationalism of the Institution in both its membership and its activities, to encourage the younger members of the profession to become involved in the activities of the Institution, and to strengthen its links with academia and industry. Furthermore, a digital gap analysis and business case/ROI was conducted to review the Institution's communication tools and systems architecture against the strategic objectives set and improve communication as an outward-facing learned society. These remain the Institution's specific Objectives for the forthcoming year.

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### ACTIVITIES, ACHIEVEMENTS AND PERFORMANCE

The Institution organised/co-organised 10 courses and conferences, covering the full spectrum of maritime technology, consisting of 1–2-day events. Throughout the year, the Institution published eight titles (five Magazines, two supplements and one Journal), reporting on developments in the maritime industry and the results of research and development. Conferences and publications have also contributed to the Institution's income.

Publications: NA (10), SBI (6), WT (5), SRM (4), OMT (4), Green Shipping Jan 2021, Marine Power & Propulsion October 2021, Significant Ships, Significant Small Ships and IJME (four issues). Also, six RINA Conference Proceedings

The Institution's local Branches and Sections have held regular online meetings to present and discuss matters of professional interest. The Institution's conferences, publications and local meetings are available to both members and non-members.

The Institution also contributed its collective expertise to national and international organisations, particularly concerned with maritime safety and the protection of the maritime environment. The Institution recognised and encouraged the achievement of individuals at all stages of professional development through its prizes and awards.

During the year, the Institution achieved its programme of planned activities in full, and smoothly transitioned from live events and activities to online working and increased their availability to both members and non-members. Feedback on its activities confirmed that the Institution was maintaining the high standard and value of its conferences, publications etc., and meeting its Objects.

The Trustees led by the Treasurer reviewed the Institution funds as per policy and governance.

### Future Plans

In the forthcoming year, the Institution intends to maintain its programme of courses, conferences, and local meetings, reflecting developments in the design, construction and maintenance of marine vessels and structures, and to continue contributing its collective expertise to appropriate national and international organisations for the public benefit. COVID restrictions will be monitored, and activities will move back to physical or hybrid events wherever practicable. A digital program of design and construction will be carried out to improve the Institution's systems architecture and communication providing additional support for members.

The Institution funds in accordance with the Trustee review led by the Treasurer will appoint CCLA as the Institution's fund managers and manage the process of transfer from M&G Investment Management Ltd to CCLA Investment Management.

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### BOARD OF TRUSTEES

The Royal Institution of Naval Architects, also known as "RINA", is a registered charity (number 211161) incorporated under Royal Charter. The Board of Trustees is the governing body of the Institution.

The Board of Trustees is responsible for the governance and management of the Institution. Responsibility for the day-to-day

management of the Institution's affairs is delegated to the Chief Executive, accountable through the Chairman to the Board of Trustees. All Trustees are provided with guidance documentation issued by the Charity Commission concerning their responsibilities.

**Board of Trustees**  
(at 31 December 2021)

**Chairman**  
M d'Amico

**Vice Chairman**  
P G Wrobel

**Treasurer**  
J Frier

**Trustees**

R Cripps	L Santini	R Gehling
T Strang	T Allan	C L Savage
E Pang	D Monioudis	J Paik

The Board of Trustees met four times in the year, during which its principal considerations were the policy, management and review of the Institution's investments, the management and review of the Risk Register, and review of the Institution's financial and administrative procedures.

The strategic review is now complete, and the implementation of the strategic direction is ongoing. The Institution continues improving its profile within the maritime community, whilst addressing future challenges and maintaining the Institution's standing as a leading maritime organisation. Strategic Direction E digital review and business case/ROI is complete, and the new tools are under construction.

**Management of Risk**

The Risk Register is reviewed and updated at every Trustees meeting.

**COUNCIL**

The Council is elected by the members. It is responsible for communicating the views of the Institution's membership to the Board and providing guidance and advice to the Board of Trustees on all matters related to the governance of the Institution.

The Council holds delegated authority from the Board of Trustees for the management of the professional, technical, and learned society affairs of the Institution. Such delegated authority is principally exercised through the Institution's standing committees and the Chief Executive.

**Council and Officers of the Institution**  
(at 31 December 2021)

**President**  
2020 - present M d'Amico FRINA

**Past Presidents**

1984-1987 Professor J B Caldwell OBE PhD MSc FEng  
1996-1999 Sir John Parker FEng  
2002-2004 Professor W G Price FEng FRSA  
2004-2007 Dr N Gee DEng FEng  
2007-2010 S Payne OBE HonPhD (Sc) FEng  
2010-2014 P French FEng FRSA  
2014-2016 B S. Rosenblatt FRINA  
2016-2018 T Boardley FRINA  
2018-2020 R Birmingham FRINA

**Honorary Vice Presidents**

2004 E C Tupper RCNC FRINA

Date Elected/Appointed	Date Elected/Appointed
------------------------	------------------------

**Vice Presidents**

2018 T Allan	2019 A K Dev*
2019 R Gehling*	2019 D Molyneux*
2019 D Aldwinckle	2019 I K A P Utama*
2019 C De Marco*	2019 J K Paik*
2019 A Subahani *	2019 P Krishnankutty*

\* Regional Vice Presidents

Date Elected	Date Elected
2020 R Downs	2020 S Inayatullah
2020 G S Chopra	2020 D Konovessis
2020 P A Wilson	2021 B Y W Lau
2020 K W Hutchinson	2021 J Frier
2020 R P Fernandez	2021 D N Monioudis
2020 R Cripps	2021 J Black
2020 C L Savage	2021 P Kujala
2020 D Vassalos	

**Fellows**

**Members**

2019 D Viner	2020 N MacLennan
2019 R Blazejczyk	2020 C Silitziotis
2020 L Santini	2020 H Theunissen
2020 A J Aitken	2020 P Crossland

**Associate-Members**

2021 M H Ghaemi	2021 R A Miller
2021 A Kumar	2021 Y R Kamath
2021 S De Villiers	2021 O S Ologe

**President of the Australian Division**

2020 Gordon MacDonald +

**President of the New Zealand Division**

2018 C Stimson +

**Chairs of Standing Committees**

R Cripps (Maritime Innovation Committee)  
A Bain (Maritime Safety Committee) +  
T Strang (Maritime Environment Committee) +  
E Pang (IMO Committee) +  
F Spencer (Disciplinary Committee) +  
N Overfield (Publications Committee) +  
M Hart (Membership Committee) +  
A Bunney (Professional Affairs Committee) +

+ Ex officio members

#### **Chief Executive**

C Boyd - 1<sup>st</sup> November 2020 -present

#### **Auditors**

Haysmacintyre

#### **Bankers**

The Royal Bank of Scotland

#### **Investment Advisors**

M&G Investment Management Ltd

#### **Staff**

The Board and Council record their grateful thanks to the Chief Executive and the Secretariat staff for their dedication to the work of the Institution during the year.

- ISWG-GHG 8 - Eight meeting of the ISWG on reduction of GHG emissions from ships (24 – 28 May 2021)
- MEPC 76 (10 – 17 June 2021)
- CCC 7 (6 – 10 Sept 2021)
- MSC 104 (4 – 8 Oct 2021)
- ISWG-GHG 9 - 9<sup>th</sup> meeting of the ISWG on reduction of GHG emissions from ships (18 – 22 Oct 2021)
- MEPC 77 (8 – 12 Nov 2021)

The committee is 30 strong and in 2021 contributed to IMO meetings, industry meetings, correspondence groups and preparing submissions.

Committee members continued to participate in a number of correspondence groups, being particularly active in life-saving appliances, lifting appliances, biofouling, EEDI and GHG matters and submitted or co-sponsored various papers.

The RINA Global Naval Architecture Group was always involved in all the Committee's activities.

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## **STANDING COMMITTEES**

The Council thanks the chairpersons and members of the Institution's standing committees for the time and effort which they devote to the work of the Institution.

### **Membership Committee**

The Committee met five times during the year to consider applications for membership and registration with the Engineering Council UK. A number of new members joined the Committee during the year, bringing it close to full strength. All meetings were held online with minimal impact on the Committee's work.

### **Disciplinary Committee**

No allegations of improper professional conduct by members were received during the year.

### **IMO Committee**

In 2021 the IMO Committee met three times (25/01, 07/06, 25/10). The meetings continued to take place remotely.

IMO Committee meetings were fully virtual, using the RINA Zoom platform, and this also facilitates increased participation by Committee members.

The Committee's members have participated in the following IMO Committees and Sub-Committee meetings:

- Symposium (09 – 10 Feb 2021) on alternative low-carbon and zero-carbon fuels
- Informal Discussion Session (virtual) on lifecycle GHG / carbon intensity guidelines for marine fuels (14 – 15 April 2021)
- MSC 103 (5 – 14 May 2021)

## **Publications Committee**

The Committee met four times during the year to determine the award of Medals and Prizes for papers published in the Transactions, and to consider how it should respond to actions placed on the Committee arising from the Strategic Review.

It has been a challenging year for the Publications Committee, nevertheless, it has continued with the introduction of a revitalised *International Journal of Maritime Engineering*. This has been achieved through the hard work of the Editor in Chief Prof David Andrews with his team of associate editors leading to the publication of four editions of the journal by the University of Buckingham Press. Additionally, the Publications Committee was able to recommend the award of two Medals of Distinction and 8 prizes to contributors to the journal, including for the first time a prize on behalf of the Cyprus Marine and Maritime Institute.

Indications are that the move to using UBP as our publishing house is a success, indeed journal articles are now indexed on the CNKI Scholar Platform significantly increasing the reach of RINA.

## **Professional Affairs Committee**

The Professional Affairs Committee (PAC) met on three occasions during 2021 (23/02, 06/07 and 26/10). The first meetings were held entirely online but the third meeting, in October 2021, was held at RINA HQ with an online link. The main activities of the PAC during the year were:

- Continuing implementation of the procedure for reviewing Continuous Professional Development (CPD) records of members. This is undertaken in accordance with the Institution policy which meets the requirements set out by the Engineering Council (EngC). The PAC has not made as much progress as it would wish on these reviews mainly due to the poor response rate from members and uncertainty over the veracity of members' contact details. The Secretariat is considering measures to improve performance in these

areas. Progress on this activity was also hampered by the absence of the CPD Working Group Chair who was seriously ill during the year. It is pleasing to report that he is now well enough to resume PAC activities.

- Continuing to develop and implement the Institution policy for Equality, Diversity, and Inclusivity (ED&I) via a working group which reports to the PAC. An ED&I survey of members was undertaken during 2021 and the results were presented to the PAC and Council.
- The five-year Engineering Council Licence Review was undertaken in June 2021. This was supported by the Secretariat, Professional Affairs and Membership Committees. One non-conformity has been completed and another has been deferred by agreement with the EngC. The licence was renewed for one year with the recommendation for a further four years dependent on the outcome of a review which will take place in June 2022.
- During 2021 accreditations were undertaken for Singapore Institute of Technology, University of Malta, Strathclyde University and the University of Newcastle Upon Tyne.
- The accreditation of the MCA graduate training scheme was carried out in November 2021.
- Members of the PAC are continuing to undertake training courses, either online or via Zoom in accordance with the Training Plan. A record of training is being maintained by the Secretariat.
- The Internal audit was undertaken with no significant issues being identified.
- The PAC has been strengthened by the addition of new members from a variety of backgrounds. Action is being taken to ensure that the new members gain experience of PAC activities in order to enhance their ability to contribute.

In the forthcoming year, the following will provide a major focus of PAC Activity:

- Continuing action to ensure that the PAC has the experienced resources to successfully undertake its activities.
- Continuing focus on reviewing CPD records and increasing the CPD activities of members.
- Development and implementation of the ED&I policy.
- Successful conclusion of the EngC licence extension.
- Implementation of IT tools for improved record-keeping and document control.
- Developing the accreditation capabilities for higher education courses and successful implementation of virtual accreditations where visits are not possible due to travel restrictions.
- Implementation of the Training Plan for PAC members and assessors.

## Maritime Safety Committee

During 2021, the Maritime Safety Committee met four times (24/03, 27/05, 08/09, 14/12) to review issues related to maritime safety. The meetings continued to take place remotely which has seen more members of the Safety Committee (and the Institution's other technical committees) able to attend consistently.

The Committee highlighted the recent frequent occurrence of accidents for large container ships, like the One Apus and MSC Zoe. The growth in size of container ships has not been followed by lashing arrangements adequate to much larger accelerations. The Committee, therefore, organised a workshop on container ships safety that took place on 06/05/21 and was very successful.

The Committee prepared a paper reporting on the workshop that was submitted at the IMO meeting of CCC 7 (6 - 10 September 2021). The paper was also published in *The Naval Architect* magazine.

The Committee continued to discuss the safety of fishing vessels and has plans to organise another seminar dealing with this type of vessel.

The Committee supported running another Safety Techniques Workshop as soon as Covid restrictions are lifted.

The Committee considered two papers that presented a novel way of conducting the inclining experiment for stability calculations. The papers proved that in some modern types of ship design the traditional method would give incorrect results. It was therefore agreed that this alternative method needs to be publicly supported. An article will be published on *The Naval Architect* presenting this method.

The Committee proposed running a RINA event on "Risk Management" and involving the Nautical Institute to include the operators' point of view.

The Committee considered involvement with the SNAME (USA) Marine Forensic Committee.

The Committee supported the running of the Institutions Lloyd's Register Maritime Safety Award.

## Maritime Innovation Committee

The Maritime Innovation Committee met three times during the year 2021 (23/03, 25/05, 21/10). The meetings took place remotely.

It has continued to discuss and review the innovative and emerging technologies will have an impact on the industry, the profession, and the Institution across all sectors in the immediate future and long term.

The Committee continued to work on producing a number of technical notes on some of the key disruptive technologies that have been previously identified:

- Modelling and simulation to improve efficiency and effectiveness of marine vehicles (including use of AI for optimisation).
- Concept Design Process.
- Digital Shipyard including Advanced Manufacturing.
- Virtual and Augmented Reality (VR & AR) in design, training, and operational contexts.
- Autonomous ships.
- Clean Maritime update.
- Inspection Techniques for Advanced Composites.
- Maritime Industry post-COVID-19.
  - It was felt the role of this Committee moving forward was about providing *Awareness, Amplification and Impact of the latest technological developments and innovations.*

The Committee supported the running of the Institutions QinetiQ Maritime Innovation Award.

### Maritime Environment Committee

During 2021, the Maritime Environmental Committee met three times (22/03, 04/10, 13/12) to review issues related to the maritime environment and continued to develop its remit and scope. The meetings continued to take place remotely.

The Committee is supported by a core of very experienced members but would still benefit from a wider membership.

Members of this Committee have continued to attend conferences related to decarbonisation in shipping and support the work of the Institutions IMO Committee in relation to attending IMO meetings as required.

The following topics have been confirmed for future consideration:

- Decarbonisation
- Underwater noise
- New materials
- Education and recruitment of new naval architects
- Promotion of the activities of the MEC to RINA members

The membership of the Institution as a knowledge partner to the Maersk Mc-Kinney Moller Centre for Zero Carbon Shipping allows the Committee to engage in the global discussion around decarbonisation.

The Committee continued to support the future establishment of a RINA Maritime Environmental Protection Award.

### Benevolent Fund Committee

Limited financial assistance was given to members who found themselves in necessitous circumstances. The Council records its grateful thanks for the donations to the Benevolent Fund received during the year.

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### MEMBERSHIP

Members on the Roll at 31 December 2021 are shown below:

Total	
Hon Fellows	6
Fellows	1057
Members	3121
Associate Members	2793
Associate	317
Student Members	1355
Junior Members	8
Corporate Partners	84
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Total	8741

### Corporate Partners

The following companies and organisations were elected Corporate Partners in 2021, having demonstrated their commitment to achieving and maintaining high standards of professional competence amongst their engineers:

Leela Worldwide  
 Fortinet Inc.  
 Tadek  
 SAIMENA  
 Caponnetto-Hueber  
 Yara Marine Technologies

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### COOPERATION WITH OTHER ORGANISATIONS

#### The Engineering Council

The Institution continued to carry out its responsibilities as a Licensed and Nominated Body of the Engineering Council of the United Kingdom. A total of 2389 members were registered with the Engineering Council through the Institution, with 81 new members being registered during the year.

#### RINA and IMarEST

The Institution continued to work closely with the IMarEST through joint branch and accreditation activities.

#### Agreements of Co-operation

The Institution continued to work with national professional institutions with common aims and objectives through its Agreements of Co-operation.

The Council considers that these Agreements also serve to demonstrate the Institution's commitment to maintaining the professional standing and influence it derives from its international membership and activities.

### International Maritime Organization

The Institution has continued to make a significant contribution to improving safety at sea and the protection of the maritime environment through its work as an NGO at the International Maritime Organization. The significance of this contribution is recognised by staff and members of the IMO and is an important element of the public benefit which the Institution provides.

### Confederation of European Maritime Technology Societies (CEMT)

The Institution is a member of the Confederation of European Maritime Technology Societies (CEMT) and currently chairs its Council which met twice during the year. CEMT's principal activity during the year was the organising of the annual International Conference on Postgraduate Research in the Field of Maritime Technology (PostGradMarTec2021) in cooperation with The Society of Polish Naval Architects and Marine Engineers (KORAB). PostGradMarTec2022 will be held in in cooperation with the Hellenic Institute of Marine Technology (HIMT).

CEMT continued to provide a forum for the exchange of information and discussion on best practice on professional matters relating to the European maritime industry. It also continued during the year to represent the views of its member Societies in those European and UN organisations of which it is a member.

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## PUBLICATIONS

### Magazines

*The Naval Architect, Ship & Boat International, Ship Repair & Conversion Technology, Offshore Marine Technology and Warship Technology*, were published during the year, providing reports on technological development in all sectors of the maritime industry.

All Magazines published during the year were also published online.

### eNewsletters

The eNewsletters *The Naval Architect eNews, Shiprepair & Maintenance eNews, Warship Technology eNews* and *Offshore Marine Technology eNews* were published during the year. These eNewsletters are available free to all members of the global maritime community and may be read online and through the eNewsletters App.

### Significant Ships and Significant Small Ships

The series were continued with the publication of *Significant Ships 2021* and *Significant Small Ships 2021*.

## Transactions

Transactions Part A – *International Journal of Maritime Engineering (IJME)* was published four times during the year.

The IJME were published in printed format and on the University of Buckingham press website.

## Digital Media

Extensive use was made of the Institution's social media groups on LinkedIn, Facebook, Instagram, and Twitter, as well as the Institution's YouTube channel to communicate with the members of the Institution and global maritime community.

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## CONFERENCES, COURSES AND EVENTS

### Conferences and Courses

The following conferences and courses were organised or co-organised during 2021:

Surveillance, Search, Rescue and Small Craft Conference  
13-14<sup>th</sup> January 2021, UK Online Conference

Ship Conversion, Repair and Maintenance  
26<sup>th</sup> January 2021, UK Online Conference

Full Scale Ship Performance  
10-11<sup>th</sup> February 2021, UK Online Conference

Maritime Innovation/Emerging Technologies  
17-18<sup>th</sup> March 2021, UK Online Conference

Ships' Lifecycle  
31<sup>st</sup> March 2021, Webinar

Dry Dock Training 2021  
27-30<sup>th</sup> April 2021, Online Course

Warship 2021: Future Technologies in Naval Submarines  
2-3<sup>rd</sup> June 2021, UK Online Conference

Wind Propulsion Open Mic 2021  
7<sup>th</sup> September 2021, Online Event

Wind Propulsion Conference 2021  
15-16<sup>th</sup> September 2021, London, UK (Hybrid)

Contract Management 2021  
19<sup>th</sup>-22<sup>nd</sup> October 2021, Online Course

President's Invitation Lecture  
1<sup>st</sup> December 2021, Online Event

### Sponsored Student Places

The Council record their grateful thanks to the following companies who generously sponsored places for students at Institution conferences during the year.

BAE Systems  
Lloyd's Register  
ABS

Prof. M. R. Belmont, J. Christmas, B. Ferrier, J.D. Duncan, and J. Duncan for their paper *Air-Wake Prediction Based Air-Vehicle Recovery Aids*.

### Annual General Meeting

The Annual General Meeting was held online on 29<sup>th</sup> April 2021 at which the following Resolution was passed:

**Resolution 1:** To re-elect haysmacintyre as Auditors until conclusion of the next Annual General Meeting

### Special General Meeting

No Special General Meetings were held during the year.

### Annual Dinner

The Annual Dinner was postponed due to the COVID pandemic and on hold until 2023.

### President's Invitation Lecture

The President, Mr. Maurizio d'Amico, welcomed guests and members to the 2021 President's Invitation Lecture on the 1<sup>st</sup> December online, when Mr. Bud Darr, MSC Group, presented "*How a Large Diversified Shipowner is Managing Decarbonisation Challenges.*"

The President's Invitation Lecture was again sponsored by ABS, to whom the Institution is indebted for their support of this and other Institution activities.

### Divisions, Sections and Branches

The Divisions, Branches and Sections provided a comprehensive programme of online technical events during the year.

The Board of Trustees and the Council recognise the value which the membership places upon the activities of the Divisions, Sections and Branches, and record thanks to those members who spend much time and effort in organising these activities.

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## INSTITUTION AWARDS

### Medal of Distinction

The Institution's Medal of Distinction for the best papers were awarded to:

Jean-Baptiste Soupez for his paper *Experimental Testing of Scarf Joints and Laminated Timber for Wooden Boatbuilding Applications*.

And

### Jeom Paik Prize

The Jeom Paik Prize for the best paper on the subject of structures, published by an author under the age of 35 in the 2021 Transactions is awarded to Jean-Baptiste Soupez for his paper *Experimental Testing of Scarf Joints and Laminated Timbers for Wooden Boatbuilding Applications*.

### W H C Nicholas Prize

The W H C Nicholas Prize for the best paper on a design-related topic published by an author under the age of 35 in the 2021 Transactions is awarded to M H Mukti for their paper *Distributed ship service systems architecture in the early stages of physically large and complex products*.

### Wakeham Prize

The Wakeham Prize for the best general paper published in the 2021 Transactions by an author under the age of 35 was awarded to V M F S Santos, H O Duarte, and M N Peres for their paper *Approach for the design of specialized ships: the case of cargo transport to an ocean island*.

### Samuel Baxter Prize

The Samuel Baxter Prize for the best paper on the subject of safety published by an author under the age of 35 in the 2021 Transactions is awarded to C Gu, H Qin for their paper *An Analysis of Carcass Layer Erosion in Un-bonded Flexible Offshore Pipework*.

### Austin Farrar Prize

The Austin Farrar Prize for the best paper published in the 2021 Transactions by an author under the age of 35 on the subject of small craft is awarded to J Pérez-Martínez for their paper *English narrowboats: From industrial revolution to the urban housing problem*.

### Calder Prize

The Calder Prize for the best paper published in the 2021 Transactions by an author(s) under the age of 35 on the subject of small or high-speed craft is awarded to R Kant for their paper *Hydrofoil with different configurations of two leading-edge protuberances*.

### Ian Telfer Prize

The Ian Telfer Prize for the best-published paper on energy or the environment-related issues by an author under the age of 35 is awarded H J Kim, M P Mujeeb-Ahmed for their paper *A new method for predicting site-specific wave-induced hull girder loads acting on ship-shaped offshore installations in benign conditions*.

## David Goodrich Prize

The David Goodrich Prize for the best paper presented at the 2021 Warships Conference was to L Hammock for her paper *Unlocking the Potential of Sustainable Submarine Design*.

## Pygotelis Zoitos Prize

The Pygotelis Zoitos Prize - sponsored by the Cyprus Marine and Maritime Institute - is presented to A Kumar for their paper on *Numerical fluid-structure interaction analysis for a flexible marine propeller using co-simulation method*.

## Student Awards

Student Awards in recognition of their achievement were presented to students at 24 universities.

RINA BAE Systems awards were presented at

- Newcastle University
- The University of Plymouth
- Southampton Solent University
- University of Strathclyde

RINA Bureau Veritas awards were presented at:

- ENSTA Paris
- ENSTA Bretagne

RINA Greek Shipping Co-operation Committee award was presented at:

- The National Technical University of Athens

The Institution is grateful to the following organisations and companies for their support of the Awards:

BAE Systems  
Bureau Veritas  
d'Amico Società di Navigazione  
Greek Shipping Cooperative Committee  
Keppel Shipyard  
Lloyd's Register  
Defence, Science & Technology Group

## RINA – QinetiQ Maritime Innovation Award

The 2022 Maritime Innovation Award is presented to Dr Noriyuki Sasaki, visiting Professor at Strathclyde University, for the Development of the Gate Rudder System which has demonstrated not only to improve the manoeuvring capabilities of the system but also achieve significant performance gains, 18% reduction in power, up to 30% fuel saving in normal operation as well a reduction of emitted noise.

The winner will be announced at the 2022 AGM.

## RINA – LR Maritime Safety Award

The 2022 Maritime Safety Award is presented to the Worldwide Ferry Safety Association (WFSA). The WFSA is a not-for-profit organisation actively involved in solving the problem of passenger ferry safety, particularly in developing countries. The list of projects undertaken indicates considerable effort in improving maritime safety.

The winner will be announced at the 2022 AGM.

## RINA – Eily Keary Award

The 2022 Eily Keary Award is presented to Dr Ralitsa Mihaylova, Head of Special Projects at Safinah Group. Ralitsa has made an impact beyond her immediate business area. Her achievement in terms of not only personal development but that of her company is proving invaluable to the company's strategic development. Ralitsa is a role model for any aspiring female naval architect, engineer, or scientist in the maritime industry. Her exemplary practice contributes to imbedding ED&I in the culture of the engineering industry. The winner will be announced at the 2022 AGM.

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## MEMBERS DECEASED DURING THE YEAR

### Honorary Fellow

#### - FRINA

P D Contraros  
J Donaldson  
N A Armstrong  
D Collins  
H H G Dalrymple  
G Williamson  
S T Mathews

D J Doust  
I Ramsay  
K Foulger  
D Cooper  
P N Ling  
W R Harrison  
J Glasgow

#### MRINA

S-L Pang  
R Patterson  
J A McKillop  
W S Harper  
A E Train  
H Barrow  
J W C Lauder  
T Aschehoug  
W Horsham  
E A Adlington

E R Steneroth  
R A Crockett  
P L Harrington  
J B Prior  
G L Fisher  
D N Wood  
C M J Scott  
W I Morrison  
G R Bettney  
C W V Davico

#### AssocRINA

#### - AMRINA

G M Hudson  
F V P Bowers

D Russell  
A Tonello



## The Royal Institution of Naval Architects

### FINANCIAL STATEMENTS FOR THE PERIOD ENDED 30 SEPTEMBER 2021

#### FINANCIAL REVIEW AND RESERVES POLICY

Income (Restricted and Unrestricted) in 2020/21 was £1.72m compared with £1.86m in 2019/20. Expenditure (Restricted and Unrestricted) in 2020/21 was £2.12m, compared to £1.93m in 2019/20.

Net deficit in 2020/21 before investment losses was £400k, compared with £74k in 2019/20. The operating deficit in the Unrestricted Fund in 2020/21 was £474k compared with an operating deficit of £148k in 2019/20. The operating surplus in the Restricted Fund in 2020/21 was £74k, compared with an operating surplus of £74k in 2019/20.

The total value of the Institution's funds (Unrestricted, Restricted and Endowment) at 30 Sep 2021 was £9.53m compared with £9.05m at 30 Sep 2020. The value of the Unrestricted Fund (investments, fixed assets, net current liabilities) was £7.62m at 30 Sep 2021 compared with £7.58m at 30 Sep 2020. The value of Restricted Funds was £312k at 30 Sep 2021, compared with £276k at 30 Sep 2020. The value of Endowment Funds (investments) was £1.59m at 30 Sep 2021 compared with £1.20m at 30 Sep 2020. The total value of the Institution's investments was £4.07m at 30 Sep 2021 compared with £3.44m at 30 Sep 2020.

#### Investment policy and performance

In accordance with authority enabled by the Order of the Charity Commissioners for England and Wales, dated 1 Nov 2002 and issued under Section 26 of the Charities Act 1993, the Trustees have sought and gained approval to use a 'Total Return' policy regarding the Endowment Funds. Whilst such policy has not yet been implemented, this status will change in the forthcoming year.

The investment powers of the Board of Trustees are set out in the Royal Charter and By Laws, copies of which are available from the Chief Executive at RINA Headquarters. Under the terms of those powers, management of the investment portfolio has been delegated to PruM&G Investment Management Ltd.

The Board of Trustees reviewed its investment policy and confirmed that it remains the purpose of the Investment Portfolio to provide the Institution with income whilst maintaining the value of capital in real terms. As such the investment aim is to generate a minimum total return in excess of inflation (UK RPI).

The value of investments at September 2021 (£4.1m) has increased by 18.6% from the previous year, as a result of improving stock market conditions. Whilst dividend income generated a yield of 4.41%, comfortably exceeding the FTSE All Share Index of 3.41%, the actual dividends received decreased by 15%, as a consequence of declining dividend distribution policies throughout the economy.

#### Reserves Policy

The charity's free reserves (unrestricted funds less designated funds and tangible fixed assets) stood at £2.33m as of 30 September 2021. The Board of Trustees' policy is to maintain minimum cash reserves at the level of 3 months/£300,000 forward operating costs, and to consider reserves in excess of this level for investment.

#### Restricted Funds

The Board of Trustees' policy is to use all dividend income from Restricted Funds to assist and enable the continuing academic and professional development of members.

#### Risk Management

Operational and financial risks facing the Institution are listed in the Risk Register which is routinely reviewed and revised by the Trustees. Policies and procedures have been established to mitigate any risks identified during these reviews. Compliance with these policies and procedures is monitored by routine Internal Audit and Self-Assessment.

COVID-19 has presented a significant risk to both the operation and finances of the Institution. Furthermore, the depressed global maritime industry continues to have a negative impact on the Institution's income from conferences and publications. The combination of these principal risks has the potential to undermine the Institution's ability to maintain the current level of its activities and services to members. The Board routinely reviews cashflow, income and expenditure in both short and long term to manage financial risk.

#### Remuneration of key personnel

The remuneration of senior members of the Secretariat is reviewed and changes approved annually by the Trustees.

## Fundraising

The Institution does not carry out any active fundraising, nor does it engage with any third party or professional fundraisers, and therefore has not signed up to any fundraising standards. There have been no complaints received during the year (2020: none). Complaints are considered by the Board or by independent non-Board members as appropriate.

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## STATEMENT OF THE BOARD OF TRUSTEES' RESPONSIBILITIES

Law applicable to charities in England and Wales requires the Trustees to prepare financial statements for each financial year which give a true and fair view of the Institution's financial activities during the year and of its financial position at the end of the year. In preparing financial statements giving a true and fair view, the Board of Trustees should follow best practice and:

- select suitable accounting policies and apply them consistently.
- make judgements and estimates that are reasonable and prudent.
- state whether applicable accounting standards have been followed, subject to any material departures disclosed and explained in the financial statements; and
- prepare the financial statements on a going concern basis unless it is inappropriate to presume that the Institution will continue in operation.

The Board of Trustees is responsible for keeping accounting records which disclose with reasonable accuracy the financial position of the Institution, and which enable them to ascertain the financial position of the Institution, and which enable them to ensure that the financial statements comply with applicable law. They are also responsible for safeguarding the assets of the Institution and hence for taking reasonable steps for the detection and prevention of fraud and other irregularities.

The Trustees who held office at the date of approval of this Board of Trustees' Report confirm that, so far as they are each aware:

- there is no relevant audit information of which the auditor is unaware; and
- each Trustee has taken all steps that they ought to have taken as a Trustee to make themselves aware of any relevant audit information and to establish that the auditor is aware of this information.

## Annual Accounts

The accounts which follow are the full statutory accounts of the Institution and should be read in conjunction with the Annual Report of the Board of Trustees.

## Auditors

Haysmacintyre LLP have expressed their willingness to continue in office as auditors and a resolution proposing their re-appointment will be submitted at the Annual General Meeting.

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## INDEPENDENT AUDITORS' REPORT TO THE BOARD OF THE ROYAL INSTITUTION OF NAVAL ARCHITECTS

### Opinion

We have audited the financial statements of the Royal Institution of Naval Architects for the year ended 30 September 2021 which comprise the Statement of Financial Activities, the Balance Sheet, the Statement of Cash Flows, and the notes to the financial statements, including a summary of significant accounting policies. The financial reporting framework that has been applied in their preparation is applicable law and United Kingdom Accounting Standards, including Financial Reporting Standard 102 *The Financial Reporting Standard applicable in the UK and Republic of Ireland* (United Kingdom Generally Accepted Accounting Practice).

In our opinion, the financial statements:

- give a true and fair view of the state of the charity's affairs as of 30 September 2021 and of the charity's net movement in funds for the year then ended.
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- have been prepared in accordance with the requirements of the Charities Act 2011.

### Basis for opinion

We have been appointed as auditor under section 144 of the Charities Act 2011 and report in accordance with the Act and relevant regulations made or having effect thereunder. We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the financial statements section of our report. We are independent of the charity in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the FRC's Ethical Standard, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

### Responsibilities of trustees for the financial statements

The trustees are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the trustees determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the trustees are responsible for assessing the charity's ability to continue as a going concern, disclosing, as applicable, matters related to

going concern and using the going concern basis of accounting unless the trustees either intend to liquidate the charity or to cease operations, or have no realistic alternative but to do so.

### **Auditor's responsibilities for the audit of the financial statements**

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

A further description of our responsibilities for the audit of the financial statements is located on the Financial Reporting Council's website at: [www.frc.org.uk/auditorsresponsibilities](http://www.frc.org.uk/auditorsresponsibilities). This description forms part of our auditor's report.

### **Conclusions relating to going concern**

In auditing the financial statements, we have concluded that the trustees' use of the going concern basis of accounting in the preparation of the financial statements is appropriate.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the charity's ability to continue as a going concern for a period of at least twelve months from when the financial statements are authorised for issue.

### **Other information**

The trustees are responsible for the other information. The other information comprises the information included in the Board of Trustees' Report. Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements, or our knowledge obtained in the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

### **Matters on which we are required to report by exception**

We have nothing to report in respect of the following matters in relation to which the Charities (Accounts and Reports) Regulations 2008 require us to report to you if, in our opinion:

- adequate accounting records have not been kept by the charity; or
- sufficient accounting records have not been kept; or
- the financial statements are not in agreement with the accounting records and returns; or
- we have not received all the information and explanations we require for our audit.

### **Use of our report**

This report is made solely to the charity's trustees, as a body, in accordance with section 144 of the Charities Act 2011 and regulations made under section 154 of that Act. Our audit work has been undertaken so that we might state to the charity's trustees those matters we are required to state to them in an Auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the charity's trustees as a body for our audit work, for this report, or for the opinions we have formed.

### **Haysmacintyre LLP**

### **Statutory Auditors**

## SUMMARY STATEMENT OF FINANCIAL ACTIVITIES FOR THE YEAR ENDED 30 SEPTEMBER 2021

	Unrestricted Funds £	Restricted Funds £	Endowment Funds £	Total 2021 £	Total 2020 £
<b>Income and expenditure</b>					
<b>Income and endowments from:</b>					
<b>Charitable Activities</b>					
Membership	898,492			898,492	876,495
Events	99,003			99,003	119,768
Publications	528,052			528,052	601,487
<b>Grants, Donations and legacies</b>	7		-	7	7,236
<b>Investment income</b>	113,878	83,778	-	197,656	252,399
<b>Total income and endowments</b>	<u>1,639,432</u>	<u>83,778</u>	<u>-</u>	<u>1,723,210</u>	<u>1,857,385</u>
<b>Expenditure on:</b>					
<b>Charitable Activities</b>					
Membership	841,205	10,846	-	852,051	731,643
Events	309,021	(523)	-	308,498	267,683
Publications	963,284	(891)	-	962,393	932,023
<b>Total expenditure</b>	<u>2,113,510</u>	<u>9,432</u>	<u>-</u>	<u>2,122,942</u>	<u>1,931,349</u>
<b>Net income before investment gains/losses</b>	(474,078)	74,346	-	(399,732)	(73,964)
Gain/(loss) on investment assets	483,791	-	397,029	880,820	(1,019,997)
<b>Net income before transfers</b>	<u>9,713</u>	<u>74,346</u>	<u>397,029</u>	<u>481,088</u>	<u>(1,093,961)</u>
Transfers between funds	38,000	(38,000)	-	-	-
<b>Net movement in funds</b>	<u>47,713</u>	<u>36,346</u>	<u>397,029</u>	<u>481,088</u>	<u>(1,093,961)</u>
<b>Reconciliation of funds</b>					
Total funds brought forward	7,576,757	276,015	1,195,776	9,048,548	10,142,509
Total funds carried forward	<u>£7,624,470</u>	<u>£312,361</u>	<u>£1,592,805</u>	<u>£9,529,636</u>	<u>£9,048,548</u>

All amounts relate to continuing activities.

## BALANCE SHEET AS AT 30 SEPTEMBER 2021

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	2021		2020	
	£	£	£	£
<b>FIXED ASSETS</b>				
Tangible assets		5,296,288		5,409,657
Investments		4,074,756		3,437,983
		<u>9,371,044</u>		<u>8,847,640</u>
<b>CURRENT ASSETS</b>				
Debtors	122,442		196,875	
Cash at bank and in hand	455,164		400,474	
	<u>577,606</u>		<u>597,349</u>	
<b>CREDITORS:</b> amounts falling due within one year	(419,014)		(396,441)	
	<u>158,592</u>		<u>200,908</u>	
<b>NET CURRENT ASSETS</b>		158,592		200,908
<b>NET ASSETS</b>		<u>£9,529,636</u>		<u>£9,048,548</u>
<b>CHARITY FUNDS</b>				
Unrestricted funds				
General funds		7,624,470		7,576,757
Restricted		312,361		276,015
Endowment		1,592,805		1,195,776
		<u>£9,529,636</u>		<u>£9,048,548</u>

The financial statements were approved and authorised for issue by the Board of Trustees on 18 January 2022 and signed on their behalf by:

**J Frier**  
Trustee

## STATEMENT OF CASHFLOWS FOR THE YEAR ENDED 30 SEPTEMBER 2021

	2021 £	2021 £	2020 £	2020 £
<b>Operating activities</b>				
Net income before investment gains	(399,732)		(73,964)	
Depreciation	79,879		83,012	
Impairment charge	122,778		-	
Investment income	(197,656)		(252,399)	
Decrease in debtors	74,433		26,429	
Increase/(Decrease) in creditors	22,571		(658)	
<b>Net cash outflow from operating activities</b>		(297,727)		(217,580)
<b>Investing activities</b>				
Purchase of tangible fixed assets	(90,182)		(76,149)	
Investment income	197,656		252,399	
Proceeds from sale of tangible fixed assets	894		-	
Proceeds from sale of investments	244,049		-	
<b>Net cash inflow from investing activities</b>		352,417		176,250
<b>Movement in cash and cash equivalents</b>		54,690		(41,330)
Cash and cash equivalents at 1 October 2020		400,474		441,804
Cash and cash equivalents at 30 September 2021		<u>£455,164</u>		<u>£400,474</u>
Cash and cash equivalents comprise				
Cash at bank		<u>£455,164</u>		<u>£400,474</u>
<b>Analysis of changes in net debt</b>	Balance at 1 Oct 2020	Cash flow	Other movements	Balance at 30 Sep 2021
Cash at bank	<u>£400,474</u>	<u>£54,690</u>	<u>£-</u>	<u>£455,164</u>