

The Royal Institution of Naval Architects



2017 Annual Report

and

Financial Statements

for the year ending 30 September 2017

Contents	Page
Annual Report	
Objectives of the Institution	2
Activities, Achievements and Performance	2
Board of Trustees	2
Council	3
Standing Committees	4
Membership	7
Cooperation with other Organisations	7
Publications	7
Conferences, Courses and Events	8
Institution Awards	8
Members Deceased during the Year	9
Financial Statements	
Financial Review and Reserves Policy	10
Statement of the Board of Trustees' Responsibilities	10
Independent Auditors' Report	10
Summary Statement of Financial Activities	12
Balance Sheet	13
Statement of Cashflows	15



Royal Institution of Naval Architects

2017 ANNUAL REPORT

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 Objects 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 2017 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. These remain the Institution’s specific objectives for the forthcoming year.

ACTIVITIES, ACHIEVEMENTS AND PERFORMANCE

The Institution organised/co-organised 18 courses and conferences, covering the full spectrum of maritime technology and ranging from one-day seminars to major 3-day conferences. Throughout the year, the Institution published 9 journal titles, 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.

The Institution’s local Branches and Sections have held regular 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 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 objectives.

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.

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 Trustees are appointed by Council.

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 2017)

:

Chairman

T Boardley

Vice Chairman

N Pattison

Treasurer

J Frier

Trustees

R W Birmingham

C Cooper

J De Rose

R Gehling

A King

A Pattison

F H Spencer

P Wrobel

C Savage

The Board of Trustees met five 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 an internal audit of the Institution's financial and administrative procedures.

During the year, the Board commissioned a major survey of the membership, the results of which provided the basis for a strategic review of the Institutions Objects. This review concluded that no change in the Objectives was expected in the next 30 years. Work will now continue to determine how those Objects can be most effectively achieved, in response to changes in the maritime industry and members' professional needs

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 the appointment of the Board of Trustees, 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 2017)

President

2016- Tom Boardley FRINA

Past Presidents

1984-1987 Professor John B Caldwell OBE PhD 7Sc FEng
1993-1996 Dr Peter J Usher CBE DSc RCNC FEng
1996-1999 Sir John Parker FEng
2002-2004 Professor W Geraint Price FEng FRS
2004-2007 Dr Nigel Gee DEng FEng
2007-2010 Stephen Payne OBE HonPhD (Sc) FEng
2010-2014 Peter French FEng FRSA
2014-2016 Bruce S. Rosenblatt FRINA

Honorary Vice Presidents

1972- Sir Eric G Yarrow BT MBE FRINA
2004- E C Tupper RCNC FRINA

Date Elected

Date elected

Vice Presidents

2016 Prof D J Andrews	2016 Prof R W
2016 Dr D S Aldwinckle	Birmingham
2016 N P Pattison	2017 A Marsh

Fellows

2015 J Frier	2017 J De Rose
2015 A Subahani	2017 R Pudduck
2015 S C Rusling	2017 R Cripps

2015 J C Hudson	2017 C L Savage
2015 R C Gehling	2017 D Vassalos
2016 A G Blyth	2017 C S P Hunter
2016 H Karanassos	2017 P G Wrobel
2017 R A Shenoi	

Members

2015 D Viner	2017 P B L Coley
2015 W Kelly	2017 D V Whittaker
2016 A Pattison	2017 I D Grant
2016 P Gualeni	2017 D Spinney
2016 R Spink	2017 C De Marco
2016 A D King	2017 P Crossland

Associates

2014 G Smyth	2016 N Desty
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Associate-Members

2015 C Cooper

President of the Australian Division

2016 M Renilson +

President of the New Zealand Division

2016 R Flay +

Chairmen of Standing Committees

R Cripps (Maritime Innovation Committee)
S Watts (Maritime Safety Committee)+
T Strang (Maritime Environment Committee) +
J De Rose (IMO Committee)
F H Spencer (Disciplinary Committee) +
N Pattison (Publications Committee)
Y Sarac-Williams (Membership Committee) +
D Spinney (Professional Affairs Committee)

+ Ex officio members

Chief Executive

T Blakeley

Solicitors

Messrs Taylor, Joyson Garret & Co.

Auditors

haysmacintyre

Bankers

The Royal Bank of Scotland

Investment Advisors

M&G Investment Management Ltd

President

Board and Council record their grateful thanks to Mr Tom Boardley for the service he has rendered to the Institution as its President and as Chairman of the Board of Trustees during the year.

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.

STANDING COMMITTEES

The Council thanks the chairmen 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.

The total membership at the end of 2017 was 10,706. There was again an increase in the number of Student Members and Associate Members in 2017, reflecting the Institution's continuing priority of engaging with the younger members of the profession and industry.

Disciplinary Committee

Two allegations of improper professional conduct by members were received during the year which remain under consideration.

IMO Committee

During the year, members of the IMO Committee represented the Institution at the following at IMO Committees, Sub-Committees and working groups, and participated in many inter-sessional activities as listed below. Members of the committee participate in 11 Correspondence Groups.

- Ship Design and Construction (SDC) 4
- Ship systems and equipment (SSE) 4
- Maritime Safety committee (MSC) 98.
- Marine Environmental Protection Committee (MEPC) 71

The predominant subject of MEPC 71 was Greenhouse Gas Emissions and Energy Efficiency. Two Intersessional meetings were conducted and attended by members of the Committee. The Institution co-sponsored a paper with IMarEST for the first of these Intersessional meetings and also gave a lunchtime presentation.

Full details of the IMO and Committee activities are published on the IMO Group Forum of the Institution's website.

Publications Committee

The Committee met to determine the award of Medals and Prizes for papers published in the Transactions.

Professional Affairs Committee

The Committee met on three occasions during the course of the year during which the following actions were taken:

- The continuing pilot scheme to monitor the reporting by members of their CPD activity;
- Development of online and electronic methods for recording members' CPD;
- The review and alignment of documents relating to the work of the PAC, including the Terms of Reference, the

Policy and Procedures Manual and the Guidance Notes, and also the configuration control of those documents;

- The accreditation of academic programmes (Southampton Solent, Strathclyde, UCL, Malta, Plymouth, AMET, MTEC, Newcastle) - this included the first decision for some time to decline an application, namely the MEng in Marine Technology at Plymouth University;
- The accreditation of Initial Professional Development (IPD) programmes (BAE Systems, Babcock, DNV-GL, Atkins);
- Introduction and review of an updated Modus Operandi for the PAC;
- Development of an Equality, Diversity and Inclusion (ED&I) policy.

Maritime Safety Committee

The Committee met four times during the year and alongside the planned subjects, specific incidents and hot topics were also discussed including stability training for operators (following on from the *Hoegh Osaka* incident), cyber security. This year the Committee has put more emphasis into providing for the future, fundamental safety advice/training to members of the maritime industry in the form of a workshop and reviewing current safety advice documentation. Additionally, a conference entitled "Safety and Risk Management in the Maritime Environment" was proposed to the Committee and is now being organised.

Anchoring Requirements for Large Containerships

The impact of the rapidly increasing size of containerships with the associated increased windage on anchoring requirements was discussed and a paper was presented. This paper has been placed on the website for further comment. The issues raised included, the level of understanding of the operator of the design parameters of the anchoring system and to what extent the lateral forces are taken into account in the Rules as opposed to "head-on" assumptions.

Fishing Vessels

There was a very constructive meeting with the Marine Management Organisation to discuss fishing vessel stability, particularly relating to vessels under 15m. The committee and the stakeholders recognise the current limitations of the regulations and the opportunities to improve safety. However, there are challenges both in resourcing the expertise within the Committee and effectively navigating the regulatory structure.

Lifeboats

Lifeboats (including life saving appliances) continues to be a subject that raises safety issues. The Committee has worked with the IMO Committee on issues such as Time for Boarding, Maximum Expected Time to Rescue, Effect on survival craft size, etc to ensure a coherent approach.

MV Stellar Daisy

A presentation was given to the Committee on the facts surrounding the loss of the *Stellar Daisy*, (based upon that provided by Professor Jeom Paik, *Pusan National University and University College London*). The vessel was a VLOC that had previously been converted from a VLCC, that sank in March 2017 in the South Atlantic. The Committee will review the findings of the official enquiry when the information becomes available.

Analysis of Inclining Experiments

A presentation was given by Professor Dracos Vassalos and Dr Kristian Karoliuss (*Strathclyde University*) on a benchmarking study investigating the accuracy of the traditional method of analysing inclining experiments on a number of hullforms. A comparison was made with the traditional method and a recently developed analysis method, with a further “polar” method. The study was aimed at demonstrating the level of errors produced when applying the traditional calculation method with its inherent wall sided assumption. It was recognised that further data would be required to demonstrate the errors with more drastic hullforms e.g. lower block coefficient, very high bow flare, stern or side sponsons etc.

It was noted that the current Intact Stability Code gives no information on the analysis of inclining experiments.

It was agreed that this was an important topic and that prior to any formal submission to IMO, further data should be sought to further demonstrate the issue.

Safety Techniques Workshop

A sub committee was formed to lead the development of the programme for a one day Safety Techniques workshop, volunteers were approached from across all the Technical Committees. The approach has been agreed to use a workshop format which will enable participants to apply the knowledge during the day through practical group exercises. The agenda for the day has been agreed by the Safety Committee and it is anticipated that the workshop will be run during 2018.

Safety Guidance for Naval Architects

A sub-committee has been initiated to review the existing document (2nd Edition) issued in March 2010 and update as appropriate.

The Committee continues to have a good attendance and a number of new members have joined from a variety of different parts of the maritime industry. This has ensured that debate within the Committee is able to include aspects relating to the insurance industry and operational issues etc as well as the more traditional aspects. Additionally, the Committee is working closely with other Technical Committees to address issues in an efficient and effective manner, recognising the limitations of the resources available.

The principal issues summarised above demonstrate that this has been another very successful year for the Maritime Safety Committee, the plans already in place for the coming year will further demonstrate the effectiveness of the Committee

Maritime Environment Committee

The Maritime Environment Committee was formed following a review of the Institution’s standing Technical Committees. The Committee is tasked by the Council with making the collective technical expertise of the Institution available for the benefit of the profession and society by contributing to the protection of the maritime environment and the sustainable use of resources.

The Committee met four times during the year, during which it has sought to list those aspects of the design, construction and operation of marine vessels and structures which can have

an impact on the maritime environment and the use of resources, identify what that impact is and determine what actions might be taken to mitigate it. In due course, this list will serve to prioritise the use of the Committee’s resources. It will also provide an “aide memoire” for those members and others in the maritime industry who are involved in the design, construction and operation of marine vessels and structures, as a means of improving their knowledge and understanding of how to protect the maritime environment and make more sustainable use of resources.

Maritime Innovation Committee

The inaugural meeting of the Maritime Innovation Committee was held in January 2017. The Committee is made up of 24 members representing a wide range of the different sectors across the maritime industry. The Committee has had a total of five meetings during the year.

The Committee has discussed at length the areas in which 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 following themes have been identified:

- Design and Manufacturing incl. Materials and Coatings
- Hydrodynamics and Propulsors
- Power Generation and Energy Management
- Operations, Maintenance and Training
- Safety and Environment incl. Human Factors and Legislation
- Autonomy, Data, Digital and Cyber
- Business and Economics

Education and Research were considered to cut across all themes and sectors

The Committee has now established number of individual sub-groups for each theme looking at the emerging technologies. The output from the groups is being collated into a report that will provide the Committee’s view of those emerging technologies that will have an impact on the industry now and in the future. It is anticipated that this will provide topics where academia could undertake specific research work, provide industry with development ideas and topics for future conferences or workshops.

Some points initial outcomes from the Committee include:

- Autonomy and the challenges associated with its regulatory framework and security
- Design and manufacture - new technologies including autonomy, digitalisation and robotics will have a significant effect on the design of marine craft
- 3-D printing is likely to revolutionise the manufacture of components
- Human factors will become even more important as digitalisation and semi-autonomy become a reality especially the design of the interface between the asset and the mother vessel or shore-base.
- Design processes are evolving as new technologies and computer power increases allowing greater depth of analysis at the design stages, for example CFD.

- Use of adaptive/smart materials with ability to be multi-functional, self-healing and morph in shape.
- EEDI potential impact on hydrodynamic design and design assessment
- Prediction methods for minimum power requirements for manoeuvring in waves.
- Design and evaluation of low noise propeller with no impact on efficiency for the commercial market
- Development of numerical models or physical model testing to reflect the requirements of new IMO stability standard
- Greater emphasis placed upon understand impact of design changes early in the process (both experimental and numerical, model scale and full scale methods)
- Identification of new technologies that maybe applied to reduce fuel consumption such as air lubrication
- Growth in unconventional hull forms

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.

MEMBERSHIP

Members on the Roll at 31 December 2017 are shown below:

	Total
Hon Fellows	8
Fellows	964
Members	3228
Associate Members	3253
Associate	318
Student Members	2736
Junior Members	199
Corporate Partners	91

Total	10706

Corporate Partners

The following companies were elected Corporate Partners in 2017, thereby demonstrating their commitment to achieving and maintaining high standards of professional competence amongst their engineers:

Damen Engineering Gdansk
Clyde&Co
Faculty of Ocean Engineering & Ship Technology (Gdansk
University of Technology)
SENTIO Superyacht Consultants Ltd
IMRANDD Limited
Design Automation Associates Inc
Tonsai Marine Services Co Ltd
Cool Dynamic
Ace Marine & Engineering Services
EF-MA Novelseas Ltd

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 2548 members were registered with the Engineering Council in 2017, with 112 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 Organisation

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 Organisation. 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.

International Standards Organisation

The Institution fulfilled its role as a Liaison Member of the International Standards Organisation.

Confederation of European Maritime Technology Societies

The Council of CEMT met twice during the year. The Institution was represented by the Chief Executive, who is also the Chairman of the CEMT Council.

PUBLICATIONS

Journals

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. *The Naval Architect* was again published in the Chinese language.

All journals published during the year were also published online.

eNewsletters

The eNewsletters *Shiprepair & Maintenance eNews* and *Offshore Marine Technology eNews* were published during the year. A further eNewsletter – *The Naval Architect eNews* – was launched during the year.

Significant Ships and Significant Small Ships

The series were continued with the publication of *Significant Ships 2017* and *Significant Small Ships 2017*.

Transactions

Transactions Part A – *International Journal of Maritime Engineering (IJME)* was published four times during the year. Transactions Part B – *International Journal of Small Craft Technology (IJSCT)*, was published twice during the year.

Both the *IJME* and *IJSCT* were published in printed format, on CD-ROM and on the RINA website.

During the year, all papers published in the Transactions were made available to members.

CONFERENCES, COURSES AND EVENTS

Conferences and Courses

The following conferences and courses were organised or co-organised during 2017:

Jan: Smart Ship Technology, London, UK
Feb: Fixed and Floating Offshore Structures, Perth, Australia
Mar: Wind Farm Support Vessels, London, UK
May: Contract Management Course, London, UK
May: Super and Mega Yachts, Genoa, Italy
May: Communication Skills for Engineers, London, UK
Jun: Basic Dry Dock Training Course, London, UK
Jun: Warships 2017, Bath, UK
Sep: EEDI, London, UK
Sep: ICCAS 2017, Singapore
Oct: Pacific 2017, Sydney, Australia
Oct: Contract Management Course, London, UK
Oct: HSMV 2017, Naples, Italy
Nov: Power and Propulsion, Rotterdam, The Netherlands
Nov: ICSOT Indonesia, Indonesia
Nov: LNG/LPG Shipping, Glasgow, UK
Dec: International Workshop on Water-Jet Propulsion, Shanghai, China
Dec: ICSOT India, Kharagpur, India

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.

BMT Group
BAE Systems
Lloyd's Register
ABS
Danish Society of Naval Architects & Marine Engineers

Annual General Meeting

The Annual General Meeting was held on 27 April 2017 at the Institution's Headquarters, at which the following Resolution was passed:

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

On completion of the AGM, a presentation was given by George Mitchell of Newcastle University, entitled "*Sixty Not Out*", in which he described many of the University's successful consultancy and research contracts with which he had been involved with over the past 60 years.

Annual Dinner

The Annual Dinner was held on 27 April 2017 at the Lancaster London Hotel. The principal speakers were Martin Stopford, President of Clarkson Research Services Limited, and the Rev Colin Hall-Thompson, Senior Chaplain to the Mission to Seafarers

President's Invitation Lecture

The President, Mr Tom Boardley, welcomed guests and members to the 2017 President's Invitation Lecture on 22 November at One Whitehall Place, when James Tai, Company Technical Director and General Manager of the Fleet Management Department at Orient Overseas Container Line Ltd, who described the challenges of designing and building a 21,000 TEU containership.

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.

Technical Forum

Extensive use was made of the Institution's Group on the online professional network LinkedIn as a technical forum.

Divisions, Sections and Branches

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

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

INSTITUTION AWARDS

Institution Medal of Distinction

The Institution Medal for papers of distinction published in the 2017 Transactions was awarded to the following:

E Lataire and M Vantorre for their paper *Hydrodynamic interaction between ships and restricted waterways*.

J Alavimehr, M R Davis, J Lavroff, D S Holloway and G A Thomas for their paper *Response of a high-speed wave piercing catamaran to an active ride control system*

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 2017 Transactions was awarded to J C Rigby for his paper *Shock resilience of structural pillars in naval vessels*

Wakeham Prize

The Wakenham Prize for the best general paper published in the 2017 Transactions by a member under the age of 35 is awarded to S Sezen for his paper *Backstepping control of nonlinear roll motion for a trawler with fin stabilizer*.

W H C Nicholas Prize

The W H C Nicholas Prize for the best paper on a design related subject published by an author under the age of 35 in the 2017 Transactions was awarded to Y Wang for his paper *Experimental investigation into factors affecting the transient flow of fluid through an orifice in realistic conditions*

Austin Farrar Prize

The Austin Farrar Prize for the best paper published in the 2017 Transactions by a member under the age of 35 on the subject of small craft is awarded to G Vergassola for his paper *A Simplified Method for the Evaluation of Inertial Loads on Sailing Yachts*

Ian Telfer Prize

The Ian Telfer Prize for the best paper on an environment related subject published by an author under the age of 35 in the 2017 Transactions was awarded to A Boveri and A. Margarita for their paper *Decision support system for power generation management for 110,000+ GRT cruise ship*

David Goodrich Prize

The David Goodrich Prize for the best paper presented at the 2017 Warships Conference was awarded to M Cook, M Thody & D Garrett for their paper *"I didn't see that coming: The Perils of Underwater Automation"*.

Small Craft Group Medal

The 2017 Small Craft Medal was awarded to R M Cripps for his significant lifetime contribution to the advancement of the design, construction and safety of small craft. .

Student Awards

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

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

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

RINA–Lloyd's Register Maritime Safety Award

The RINA – Lloyd's Register Maritime Safety Award was awarded to the SEAHORSE Project for its work in enhancing safety by transferring best practices in one mode of transport to another

The Award was announced and presented at the 2017 Annual Dinner

RINA – QinetiQ Maritime Innovation Award

The RINA–QinetiQ Maritime Innovation Award was awarded to Hull Vane BV for their, not surprisingly, development of the Hull Vane.

The Award was announced at the 2017 Annual Dinner

MEMBERS DECEASED DURING THE YEAR

FRINA

I B Blackwood	J H Hoare
A Cook	G P Hodge
I W Dand	G W Moore
R O Goss	P W Penney
F S Harris	J Williams

MRINA

E C Allcard	P C Hercus
M J Bell	J T J Orr
D J Clarke	R P Pitt
D P Cummings	A O Russell
D J Dalziel	A Sokolowski
D N Fleck	M J Westlake
R French	M S Wood



Royal Institution of Naval Architects

FINANCIAL STATEMENTS FOR THE PERIOD ENDING 30 SEPTEMBER 2017

FINANCIAL REVIEW AND RESERVES POLICY

Income (Restricted and Unrestricted) in 2016/17 was £2.30m compared with £2.29m in 2015/16. Expenditure (Restricted and Unrestricted) in 2016/17 was £2.15m, compared to £2.25m in 2015/16.

Net income in 2016/17 before investment gains was £145k, compared with £33k in 2015/16.

The total value of the Institution's funds (Unrestricted, Restricted and Endowment) at 30 Sep 2017 was £10.16m compared with £9.80m at 30 Sep 2016. The value of the Unrestricted Fund (investments, cash, fixed assets) was £8.23m at 30 Sep 2017 compared with £8.01m at 30 Sep 2016. The value of Restricted Funds was £247k at 30 Sep 2017, compared with £205k at 30 Sep 2016. The value of Endowment Funds (investments) was £1.68m at 30 Sep 2017 compared with £1.59m at 30 Sep 2016. The total value of the Institution's investments was £4.24m at 30 Sep 2017 compared with £4.11m at 30 Sep 2016.

The operating surplus in the Unrestricted Fund in 2016/17 was £63k compared with an operating surplus of £0.5k in 2015/16. The operating surplus in the Restricted Fund in 2016/17 was £82k, compared with an operating surplus of £32k in 2015/16.

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 adopted a 'Total Return' policy with regard to the Endowment Funds.

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 commissioned independent reviews of its investment policy and performance. No significant changes to the investment policy were made as a result of the review. Investments during the year met the Board's Medium-Term Performance target of exceeding the FTSE All Share Index.

Reserves Policy

The charity's free reserves (unrestricted funds less designated funds and tangible fixed assets) stood at £2.76m as at 30 September 2017. The Board of Trustees' policy is to maintain minimum cash reserves at the level of 3 months/£250,000

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. The Board has extended this policy to include both undergraduate and post graduate 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.

The principal risk is considered to be the negative impact of the depressed global maritime industry on the Institution's income from its conferences and publications, affecting 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.

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.

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 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.

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 2017 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).

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.

In our opinion, the financial statements:

- give a true and fair view of the state of the charity's affairs as at 30 September 2017 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

As explained more fully in the trustees' responsibilities statement set out on page 6, 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. This description forms part of our auditor's report.

Conclusions relating to going concern

We have nothing to report in respect of the following matters in relation to which the ISAs (UK) require us to report to you where:

- the trustees' use of the going concern basis of accounting in the preparation of the financial statements is not appropriate; or
- the trustees have not disclosed in the financial statements any identified material uncertainties that may cast significant doubt about the charity's ability to continue to adopt the going concern basis of accounting for a period of at least twelve months from the date 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.

haysmacintyre
Statutory Auditors

SUMMARY STATEMENT OF FINANCIAL ACTIVITIES FOR THE YEAR ENDED 30 SEP 2017

	Unrestricted Funds £	Restricted Funds £	Endowment Funds £	Total Funds 2017 £	Total Funds 2016 £
Income and expenditure					
Income and endowments from:					
Charitable Activities					
Membership	817,038	-	-	817,038	816,623
Events	455,004	-	-	455,004	365,244
Publications	748,900	-	-	748,900	877,776
Donations and legacies	46,000	-	-	46,000	620
Investment income	103,671	125,693	-	229,364	227,256
Total income and endowments	<u>2,170,613</u>	<u>125,693</u>	<u>-</u>	<u>2,296,306</u>	<u>2,287,519</u>
Expenditure on:					
Charitable Activities					
Membership	541,629	90,084	-	631,713	662,167
Events	584,064	-	-	584,064	525,057
Publications	935,915	-	-	935,915	1,067,430
Total expenditure	<u>2,061,608</u>	<u>90,084</u>	<u>-</u>	<u>2,151,692</u>	<u>2,254,654</u>
Net income before investment gains/losses	109,005	35,609	-	144,614	32,865
Gain on investment assets	114,331	-	93,828	208,159	346,253
Net movement in funds	<u>223,336</u>	<u>35,609</u>	<u>93,828</u>	<u>352,773</u>	<u>379,118</u>
Reconciliation of funds					
Total funds brought forward	8,008,870	205,073	1,588,794	9,802,737	9,423,619
Total funds carried forward	<u>£8,232,206</u>	<u>£240,682</u>	<u>£1,682,622</u>	<u>£10,155,510</u>	<u>£9,802,737</u>

All amounts relate to continuing activities.

BALANCE SHEET AS AT 30 SEPTEMBER 2017

	2017	2016
	£	£
FIXED ASSETS		
Tangible assets	5,472,833	5,502,952
Investments	4,238,065	4,116,906
	<u>9,710,898</u>	<u>9,619,858</u>
CURRENT ASSETS		
Debtors	240,945	239,979
Cash at bank and in hand	543,572	314,433
	<u>784,517</u>	<u>554,412</u>
CREDITORS: amounts falling due within one year	(339,905)	(371,533)
NET CURRENT ASSETS	444,612	182,879
NET ASSETS	<u>£10,155,510</u>	<u>£9,802,737</u>
CHARITY FUNDS		
Unrestricted funds		
General funds	8,232,206	8,008,870
Restricted	240,682	205,073
Endowment	1,682,622	1,588,794
	<u>£10,155,510</u>	<u>£9,802,737</u>

The financial statements were approved and authorised for issue by the Board of Trustees on 25 January 2018 and signed on their behalf by:

J Frier
Trustee

STATEMENT OF CASHFLOWS FOR THE YEAR ENDING 30 SEPTEMBER 2016

	2017 £	2017 £	2016 £	2016 £
Operating activities				
Net income before investment gains	144,614		32,865	
Depreciation	87,260		79,232	
Decrease/(increase) in debtors	(966)		(37,720)	
Increase/(decrease) in creditors	(31,628)		(4,408)	
	<hr/>		<hr/>	
Net cash from operating activities		199,280		69,969
Investing activities				
Purchase of tangible fixed assets	(57,141)		(58,989)	
Purchase of investments	(13,000)		(200,000)	
Proceeds from sale of investments	100,000		200,000	
	<hr/>		<hr/>	
Net cash from investing activities		29,859		(58,989)
Movement in cash and cash equivalents		<hr/> 229,139		<hr/> 10,980
Cash and cash equivalents at 1 October		314,433		303,453
Cash and cash equivalents at 30 September		<hr/> £543,572		<hr/> £314,433
Cash and cash equivalents comprise		<hr/> <hr/>		<hr/> <hr/>
Cash at bank		<hr/> £543,572		<hr/> £314,433