RINA AFFAIRS

JANUARY/FEBRUARY 2017

The Newsletter of the Royal Institution of Naval Architects

CHIEF EXECUTIVE'S COLUMN

May I take this opportunity of the first issue of RINA Affairs in 2017 to wish all members a belated Happy New Year (less belated for Chinese members!)

Over the past year I have again had the pleasure of meeting members (and some soon to become members) in some of the countries where the Institution is represented at all levels in universities, industry and maritime organisations. My visits to some of the 60+ universities where the Institution has links and the many companies in all sectors of the maritime industry where members work has left me in no doubt as to the standing which the Institution enjoys in the international maritime community.

The Institution has members in 97 countries, demonstrating conclusively that the Institution is truly an international organisation. The decision of those involved in the design, construction, maintenance and management of marine vessels, from Australia to Azerbaijan, to become members is confirmation that membership provides an internationally recognised demonstration of the highest standards of professional competence. Their membership also confirms the value which they place upon the Institution's international publications and conferences, providing the relevant and up-to-date information on developments across all sectors of the global maritime industry which is essential to maintaining that competence.

Few members of the maritime industry would deny the standing which the Institution's journals enjoy amongst the many similar publications which serve the industry worldwide – some better than others in terms of their accuracy and independence. The credit for that must go to the editorial staff and contributors, ably supported by the advertising teams. (I wonder how many members are aware that all editorial, advertising sales and production is done in-house, leaving only the printing and distribution to be out-sourced). The internationalism of the Institution's journals is reflected in their distribution in over 100 countries, giving them a truly global circulation. As I hope you are aware, all journals are now published in printed and digital formats for reading on PCs, Tablets and Smartphones. Last year, the Institution introduced the email newsletters *Ship Repair eNews* and *Ship & Boat eNews*.

Towards the end of the year, the revised and updated website was launched, details of which are included in this issue of RINA Affairs.

The Institution's conferences also continue to enjoy a high reputation for their quality of both content and organisation. The global location of the conferences also serves to demonstrate the internationalism of the Institution.

I believe that the Institution enjoys a standing in the international maritime industry which is unmatched by any professional society serving the professional needs of those involved in the design, construction and maintenance of marine vessels and structures. This is demonstrated by the number of companies which recognise corporate membership as meeting their requirements for professional recognition, seek the Institution's assistance in developing and accrediting their Graduate Training Programmes or become Corporate Partner members.

I make no apology for beating the drum for the Institution, and I invite all members to do the same in whatever way they can. Membership is surely something to be proud of.

Finally, on your behalf, I would like to thank the other members of the Headquarters team for the contribution they have made to the success of the Institution over the past year.

Chief Executive

IN THIS ISSUE

2017 ANNUAL GENERAL MEETING

NOTICE IS HEREBY GIVEN THAT IN ACCORDANCE WITH BY-LAWS 39 AND 42, THE ANNUAL GENERAL MEETING OF THE INSTITUTION WILL BE HELD AT 8-9 NORTHUMBERLAND STREET, LONDON, WC2N 5DA, ON 27 APRIL 2017 AT 1100 FOR THE FOLLOWING PURPOSES;

1.To receive the Annual Report and the Financial Statement for the year ended 30 September 2016.
2.To consider and if felt fit, approve the following Resolution:

Resolution: To re-appoint haysmacintyre as the Institution's auditors

Note.
1.All members have the privilege to attend the above meeting, but only Voting Members are entitled to vote on the Resolutions.
2. Members entitled to vote on the Resolutions may appoint the Chairman of the meeting as their proxy to vote on their behalf.
3. Proxy Forms are available online at www.rina.org.uk/p/1/2016%20AGM%20Proxy%20Form.pdf and must be returned by post or email, to arrive by 1030 on 27 April 2017

PEOPLE IN THE NEWS

Bruce Rosenblatt FRINA

Past President, Bruce Rosenblatt, has been appointed as the chairman of Webb Institute's Board of Trustees.

RINA–DST Group Award

RINA - Defence Science and Technology Group Award for the best presentation at the UNSW Thesis Conference (Seminar 2) by a student member of RINA on their thesis project was presented to James Johnston for his presentation on Comparison of Physical Sailing Yacht Performance to Velocity Prediction Program Outputs.

RINA – Bureau Veritas Student Award

The RINA Bureau Veritas Award for 2016 was presented to Rémi Rétho. Whose thesis "Étude de la stabilité longitudinale des carènes à redan" was judged to be the best final year thesis at ENSTA Paris Tech.

RINA – BMT Award

The 2016 RINA – BMT Student Award was presented to Gilberto Zambrini, Cillian McGreer and Clare Mawson whose design for a Customs Patrol Boat, required to be station for 14 days at best economical speed of at least 8 knots + a sprint capability of 30 knots for 6 hours, was judged to be the best Group Design Project at Southampton University.

Chief Executive, Trevor Blakeley, discusses the RINA-BMT Award winning design with Gilberto Zambrini, Cillian McGreer and Clare Mawson

Review of Technical Committees

Making its collective expertise available for the benefit of the profession and society is an important role and key responsibility of the Institution to which it devotes not inconsiderable resources, principally its members' time. The Institution exercises this responsibility mainly through its Technical Committees using the expertise available within the committees but also able to call upon the wider expertise of the members of the Institution.

The Council recognised the need to ensure that the Institution is making the most effective use of both of its resources and the expertise of the members. It therefore tasked a Technical Committees Working Group with examining the current structure of the Technical Committees – Safety, High Speed vessels, Small Craft and IMO – and recommending changes which would make more effective use of resources and wider use of the expertise of the members. The recommendations of the TCWG have been accepted by the Council at its meeting in October 2016 and have all been implemented.

Technical Committees

The output of the committees is a measure of their effective use of resources and the TCWG observed the such productive output was generally related to safety related items, mainly to persons but increasingly to the maritime environment. It also recognised the need for the Institution to recognise and respond to evolving technologies. Council has therefore accepted the recommendation that there should be four Technical Committees, covering Maritime Safety, the Maritime Environment, the IMO Committee and Maritime Innovation. These Committees have now been formed.

The Maritime Safety Committee will continue the role and responsibilities of the current Safety Committee, addressing matters concerned with personal safety, whilst the Maritime Environment Committee will address issues relating to the protection of the maritime environment, and including marine renewable energy.

The IMO Committee will continue its role of representing the Institution in its capacity as an NGO at the IMO, liaising closely with the Maritime Safety and Maritime Environment Committees.

The Maritime Innovations Committee will act as the Institution's "Think Tank" identifying and assessing the impact of evolving technologies on the membership and profession, and determining how the Institution should address them. The Technical Committees will include expertise in all sectors of the industry and the Chairmen will be ex officio members of Council.

Maritime Groups

The TCWG concluded that it was not feasible for all specialist vessel types and sectors to have their own formally structured committees. However, The TCWG recognised that specialist committees such as the High Speed Vessels Committee and Small Craft Committee provided an opportunity for their members to identify and discuss developments in those and other vessel types. That opportunity will continue and be extended to all members of the Institution through the formation of online special interest Maritime Groups, covering vessel types and sectors of the industry.

Each Maritime Group has an online Forum by which members may raise and discuss matters of interest to the Group. Initially these Groups will cover Small Craft and High Speed Vessels, with other Groups added as interest dictates. Each of the four Technical Committees also has an associated Maritime Group through which members will be kept up to date with the work of the Committees, and have the opportunity to both comment on that work and to propose items for consideration. Members will be able to register for these Groups and receive notification of new items.

Technical Register

In order for the Technical Committees to make greater and more effective use of members' expertise, an online Technical Register of members' experience and expertise has been created for those members who are willing for their expertise to be called upon by the Technical Committees for specific issues. Chairmen of the Technical Committees will have access to the Technical Register, which members can enter their details though the My Profile page of the website. The Technical Register will be confidential.

Working Groups

Whilst the Technical Committees will have a core expertise across all vessel types and sectors, they will mainly carry out their work through ad hoc Working Groups, formed to address a specific issue which may have been raised by a member of the Committee or a member of the Institution through, for example, a Maritime Group. The Working Groups, which will mainly carry out their work online, will comprise members from the Committee and members on the Technical Register who have expressed their willingness to make their expertise available to the Committee.

Council considers that these changes to the Technical Committees structure, together with the introduction of a Technical Register and the Maritime Groups will enable the Institution to more effectively fulfil its role and responsibility of making its collective expertise available for the benefit of the profession and society. I am sure members will wish to give the new structure its full support and use.

Trevor Blakeley

QUOTES OF THE MONTH

"When you want to know how things really work, study them when they're coming apart."

William Gibson

First rule of engineering; beware prototypes. Along with, avoid anything made by an engineer who doesn't have all his own fingers"

Simon R. Green

"To the optimist, the glass is half full, to the pessimist, the glass is half empty. To the engineer, the glass is twice as big as it needs to be."

Anon

2016 President's Invitation Lecture

The 2016 President's Invitation Lecture was given by Mr Antonis Trakakis, Technical Manager, Arista Shipping, who presented *Project Forward – The Design of an Ocean Going LNG Powered Ship*.

Led by Arista Shipping, a bulk carrier owner and operator, and including the resources of ABS, Deltamarin, GTT and Wärtsilä, Project Forward has developed a technically feasible and commercially viable design for ocean going, deep sea vessels powered by LNG fuel. In his Lecture, Antonis Trakakis described the challenges which Project Forward has faced and its future.

The Lecture was chaired by Vice President Professor David Andrews and again sponsored by ABS.

Members of the Project Forward team

Antonis Trakakis presents the 2016 President's Invitation Lecture

Professor Andrews introduces Antonis Trakakis

Guests at the President's Invitation Lecture

USE OF THE RINA CREST

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

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

Applications for permission to use the RINA should be made to RINACrest@rina.org.uk

Technical Register of members' expertise

Making the collective expertise of its members available for the benefit of the profession and society is an important role and responsibility of the Institution to which it devotes not inconsiderable resources, principally its members' time. The Institution exercises this responsibility mainly through its Technical Committees using the expertise available within the Committees, but also able to call upon the wider expertise of the members of the Institution.

In order to make wider and more effective use of the expertise of members, a Technical Register has been added to the My Profile page of the My RINA section on the Institution's website at www.rina.org.uk/MyRINA. Members who are willing to make their expertise available to the Technical Committees are requested to complete the Technical Register. This will provide the appropriate Committee with access to a pool of experience and expertise which it can call upon to supplement its own collective expertise, either by commenting on a specific issue being considered by the Committee, or by joining a Working Group formed to address that issue. Members would not be expected to attend meetings.

As with all data held by the Institution, the Technical Register will be confidential and not passed to any third party.

Members may also make their expertise available to the Institution by posting a Discussion or Comment on one of the Maritime Groups at www.rina.org.uk/MaritimeGroups

Gender Disparity

The Membership Committee noted that there appeared to be a proportionately smaller number of female members transferring from Associate Member to Member or Fellow. The actual proportion of male to female MRINA/FRINA (96% M: 4% F) would appear to support this statement. However, these are global figures and therefore include countries with varying attitudes to gender balance in the maritime industry. These figures also include a significant number of male MRINA and FRINA who were of the generation when few females entered the engineering profession and even less the maritime industry.

The figures for the global membership (90% M: 10% F), StudentMRINA + AMRINA (88% M: 12% F) and StudentMRINA (85% M: 15% F) reflect the change in attitudes of females to the engineering profession and the maritime industry, albeit a slow change.

The Membership Committee agreed that the Institution makes no distinction between male and female applicants in the assessment of applications for MRINA or FRINA, and that any form of positive discrimination in order to encourage more female members to apply would be inappropriate. It was considered that the male and female imbalance in the membership reflected the imbalance in industry, which was a factor that the Institution was little able to affect."

MARTEC 2016

The Chief Executive, Mr Trevor Blakeley, was an invited Keynote Speaker at the International Conference on Marine Technology 2016, organised by the Bangladesh University of Engineering and Technology (BUET). In his paper "The role of a Modern Professional Society in promoting the success of the Maritime industry. In his presentation, he described how the historic role of engineering professional institutions such as the Royal Institution of Naval Architects has been to promote and facilitate the exchange of technical and scientific information, views and discussion, and through this to influence and contribute towards furthering the knowledge and standards within their particular discipline of engineering.

However, he expressed the view that the Professional Institutions today have a wider and more proactive part to play in helping to provide the engineers with the knowledge, understanding and professional skills who are essential to the future success of the maritime industry. He examined the pivotal role a modern professional institution plays in the education, professional development and employment of engineers.

News from the Divisions and Branches

New South Wales Section

Nick Browne, Research Supply Icebreaker Project Manager, Australian Antarctic Division, gave a presentation on *Australia's New Antarctic Vessel* to a joint meeting with the IMarEST attended by 46 on 7 September in the Harricks Auditorium at Engineers Australia, Chatswood. This was the fifth-highest attendance of the 93 presentations held in Chatswood.

Drew Shannon, Manager East Coast, London Offshore Consultants, gave a presentation on *Salvage of Containership Rena off Tauranga in New Zealand* to a joint meeting with the IMarEST attended by 30 on 5 October in the Harricks Auditorium at Engineers Australia, Chatswood.

Phil Helmore
8 November 2016

RINA Headquarters

8-9 Northumberland Street, London

The Scott Russell Room

One of the meeting rooms in the Headquarters at 8-9 Northumberland Street is named after John Scott Russell, a founding member of the Institution.

John Scott Russell graduated from Glasgow University in 1825, aged just 17, going on to teach mathematics and natural philosophy at Edinburgh University. In the 1830s he began research into wave-generation and its effects, which resulted in his discovery of the 'solitary wave'.

He moved to London in 1844 and, in collaboration with Isambard Kingdom Brunel, built the pioneering iron steam ship the *Great Eastern* (1856). He also designed HMS *Warrior* (1860), the largest and fastest ship of its day, which revolutionised warship construction.

The Scott Russell Room

He was Secretary of the Society of Arts from 1845-1850, and Secretary to the Committee behind the Great Exhibition of 1851. He was one of the founders of the Institution of Naval Architects in 1860.

The Denny Room

Used for meetings, conferences and housing the Institution's library, the main public room at the Headquarters is the Denny Room, named after Sir Archibald Denny.

Board meetings in the Denny Room

Conferences in the Denny Room

Archibald Denny was a member of the Denny family who had been involved in shipbuilding in Dumbarton from the early 19th century. William Denny & Sons of built over 1500 ships at their Dunbarton yard between 1844 and 1963. They built all types of ships but were particularly well known as builders of fine cross-channel steamships and ferries. Always innovators they were responsible for a number of firsts, including *Rotomahana* (1878) - the first all-steel merchant ship; *King Edward* (1901) - the first commercial turbine steamer; *Robert the Bruce* (1834) - the first all-welded vessel. Denny's was the first commercial yard to use a Ship Model Experiment Tank. In charge of technical developments at the shipyard, Archibald Denny was closely associated with Denny's international reputation for innovation and high quality ship design.

The Froude Room

One of the meeting rooms in the Headquarters at 8-9 Northumberland Street is named after William Froude – a name familiar to all naval architects.

William Froude's work in identifying the most efficient shape for the hull of ships, as well as predicting ship stability with reference to reduced-scale models, had a significant influence on ship design.

In 1861, he wrote a paper on the design of ship stability in a seaway, published by the Institution of Naval Architects, recognised today as a major advancement in ship design theory. Between 1863 and 1867, through a series of experiments using models to determine the physical laws governing full-scale ships, he discovered the laws by which the performance of the model could be extrapolated to the ship when both have the same geometrical shape. The Froude number, expressed as the ratio of a vessel's velocity to the square root of the product of its waterline length and the acceleration of gravity, is still used today by naval architects to predict the behaviour of ships from scale models.

The Froude Room

Foyer

Visitors to the Headquarters are greeted by the splendid model of the *Cutty Sark*, on loan to the Institution.

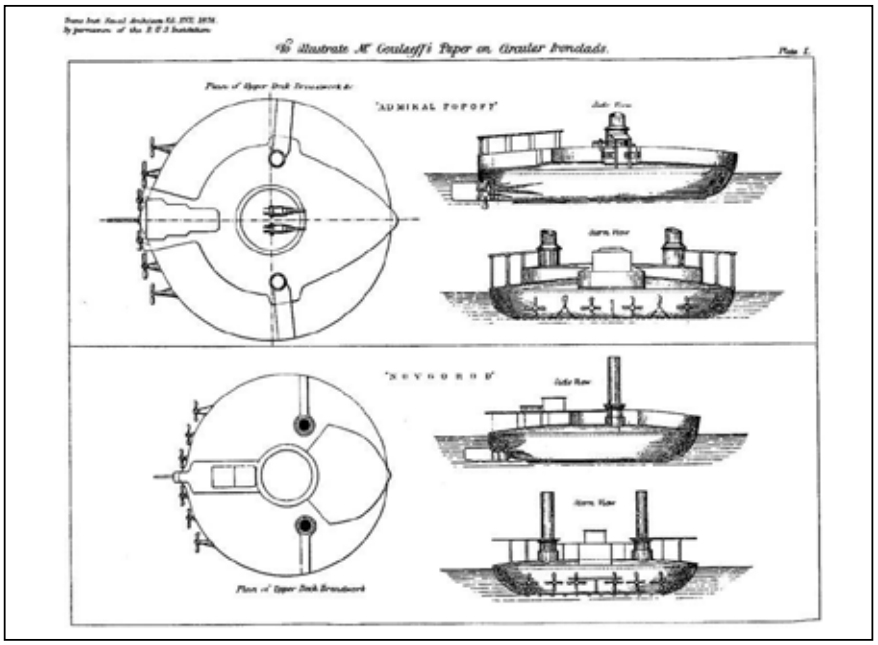
The Foyer

All rooms may be hired by members, at a discounted rate. For details of availability and cost, contact Sally Charity at scharity@rina.org.uk

Papers from the Transactions

Since 1860, over 5000 papers have been published in the Transactions of the Royal Institution of Naval Architects, providing a fascinating history of the design and construction of marine vessels and structures of all types. Many of these papers, such as William Froude's paper On the Rolling of Ships in 1861, were and milestones in that development with a lasting impact on maritime design and construction. Others, such as Lieutenant E Goulaeff's paper On Circular Iron-Clads on the development by the Imperial Russian Navy of circular warships may not have had such impact but nonetheless provide a fascinating read for all those interested or involved in maritime design and construction.

Lieutenant E Goulaeff's paper is the first in a regular series of past papers from the Transactions, selected for their importance to maritime design and construction, or simply for their novelty and interest, to be published online and in RINA Affairs.



Circular Iron-Clads

On Circular Iron - Clads

By Lieutenant E E Goulaeff, Imperial Russian Navy Published in 1876

One of the most important conditions for the defence of the Black Sea coasts limited the draught of the vessels to about 13 feet. The only then existing type of vessel which fulfilled this condition was that of unarmoured gunboats, since any armoured ship, if built of ordinary form, and if designed to carry heavy guns and thick armour, required much great immersion. Unarmoured gun boats, however, were not considered efficient, because a single shot from an insignificant gun is sufficient to penetrate their sides and sink them with all hands on board. Therefore an entirely new class of vessel was requisite to admit of the heavy guns and efficient armour protection, combined with the very small draught of water. To satisfy those conditions, no type of vessel could have been better adopted than the circular, because with no hull of any other form and of the same weight could so great a displacement upon the same draught of water have been obtained.

The head of the Navy, His Imperial Highness the Grand Duke Constantine, with his usual wisdom, appreciated the value of such considerations, and accordingly two circular ships of 96 feet in diameter, and 12 feet 6 inches draught, were ordered to be built. The displacement which such small dimensions gave has yet enabled them to carry two 28-ton guns mounted in a turret, protected, as well as the sides at the water-line, by armour equivalent to 11 inches in thickness. They were meant strictly for coast defence purposes, and therefore, no great speed was required from them.

They have open turrets, because being intended for the defence of certain narrow straits and entrances they can, when in action, occupy positions behind some defensive protection, such as submerged torpedoes; and, when attacked, can choose their own distance from the enemy, placing themselves always beyond the reach of rifle-fire. The precision of firing from guns so mounted, and other reasons, have settled the adoption of open turrets on board these circular ships.

The full paper can be read at http://www.rina.org.uk/res/On%20Circular%20Iron-Clads.pdf

QUOTES OF THE MONTH

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

J. Scott Russell, 1863.

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

William Froude, 1875.

Reporting of Continuing Professional Development (CPD).

The Institution's policy and requirement for CPD is stated in the Code of Professional Conduct, ie:

Competence to Practice

"*Every member shall only undertake work which he/she has sufficient competence, time and authority to perform.*"

Implicit in this requirement is that every member should maintain his or her professional competence.

"*Every member shall take all reasonable steps to maintain and develop his/her professional competence in relation to new developments relevant to his/her field of professional activity…..*"

Implicit in this requirement is that a member need only maintain professional competence to undertake work which he or she carries out, and not across the whole spectrum of activities in which a member might be engaged. Therefore, where there are no new developments, there would be no requirement to engage in any CPD activity. Neither would members not undertaking work, whether permanently eg retired, or temporarily, eg full time study (unless contributing to maintaining their professional competence), maternity leave, be required to undertake CPD.

"Every member should maintain a record of his/her Continuing Professional Development activities and keep it available for inspection by the Institution on request."

Such inspection of all members' CPD Records will be by exception, eg when applying for election as Fellow, or when disciplinary action is being considered. However, the Engineering Council also requires that the CPD achievement of registered members (as CEng, IEng or EngTech) be routinely reported.

CPD Report

Registered members will selectively be required to submit a report of their CPD achievement during the previous 12 months, giving details of their CPD objectives for the period, and the type and quantity of CPD activity as defined in the Institution's Guidance on CPD. Such CPD Reports will be submitted electronically.

The data provided by the CPD Reports will be analysed and published to provide information about the average times spent in each of the identified categories of CPD achievement. Whilst recognising the individuality of CPD, and therefore not setting individual or collective targets for CPD activity, it is considered that such information may be useful to members in assessing the adequacy of their own achievement.

A proportion of registered members will be required to submit CPD Reports each year.

WWW.RINA.ORG.UK

Same Address – New Look

The Institution's website at www.rina.org.uk is the principal means by which both members of the Institution and the global maritime industry are kept informed of Institution matters, including publications, events, professional development, the work of the Technical Committees and much more. It is also an important means by which members can contribute to the work of the Committees, update their personal Membership Record, purchase publications, register for conferences etc. Its primary function therefore is the exchange of information in a way that is accurate, relevant and readily accessible.

With its principal function in mind, the Website has been updated in both look and content. The aim has been to make the Website more user friendly, particularly when viewed on a tablet which is increasingly the main means by which it is accessed, and to provide easier access to the vast amount of information contained in the Website. The aim has also been to make the website more attractive to advertisers, but in a way which does not distract from its primary function.

Maritime Committees and Groups

A major change to the content has been the introduction of the Maritime Committees and specialist interest Maritime Groups recommended by the Technical Committees Working Group, full details of which were reported in the October/November issue of RINA Affairs. Each Maritime Group will have an associated Forum, by which members can be kept informed of issues being considered by the relevant Committee, contribute their expertise to those issues, and keep other members updated on developments in their sector of the maritime industry. Members can opt to receive email notification whenever a Discussion or Comment is posted.

Technical Register

Members will continue to be able to access their Membership Record and other personal pages through the My RINA page. Members can check and update their details directly. A Technical Register has been added to the My Profile page, where members who are willing to give their occasional support to the work of the Maritime Committees may record their experience and expertise.

I would welcome feedback on the new Website, including any errors and missing links – with such a major change to presentation, I would be surprised if there are none of either!

Trevor Blakeley