



RINA AFFAIRS

AUGUST/SEPTEMBER 2015

The Newsletter of the Royal Institution of the Naval Architects

CHIEF EXECUTIVE'S COLUMN



This month saw the start of the careers of many engineers as first year students at universities and colleges in the northern hemisphere, joining those in the southern hemisphere who have already started their naval architecture or related courses. A large number of students at the now 60 + universities and colleges where the Institution has links through membership of staff and students will benefit over the next 2 to 4 years from the Institution's policy of encouraging their membership and active involvement as Student Members.

As Student Members, some will enjoy free membership during their time at university or college and all will receive the Institution's journals. They will also enjoy many other benefits such as the increased number of free places at RINA conference, sponsored by both industry and the Institution. (The Institution continually seeks to increase the number of sponsored places – if you think that your company would be willing to sponsor a place, please contact me for further information) Some will receive the RINA scholarships, prizes and awards, including the RINA Student Awards. These Awards, which are sponsored by industry, recognise academic excellence of both undergraduates and postgraduates, and are now presented at 39 universities.

Having experienced the benefits of membership whilst at university or college, hopefully Student Members will recognise the value and importance of membership of the Institution to their professional development and future careers, and continue their membership when they start to receive annual fees notices as Associate Members. However, the Institution recognises the financial pressures on newly graduated members, and the first fee will not be due until 1 January of the year following graduation. Those who continue in full-time study as Associate Members will receive a 50% reduction in their membership fees.

Associate Members will find that employers worldwide recognise the added value which membership of the Institution as an Associate Member provides. They will welcome the early commitment to achieving the Institution's high professional standards which membership demonstrates, and in the longer term, both industry and the profession will benefit from members' implicit acceptance of the requirement to continue their professional development throughout their working lives.

The Institution's policy with regard to the younger members of the Institution continues to represent a significant investment in the future of both the Institution and the profession. However, I am sure that none would doubt its wisdom and necessity. The Institution is grateful to members of staff at the universities and colleges for encouraging students to become Student Members, and for their support of the Institution's various awards.

And finally, may I remind all members with sons and daughters (or nephews and nieces, grandsons and granddaughters) still at school and who may be contemplating a career in ship or boat design and construction, or just have an interest in maritime matters, that they would be most welcome as Junior Members. I am sure that their interest would be maintained by receiving the Institution's journals each month. The Annual Fee of £32 can be charged to members.

Chief Executive

IN THIS ISSUE

2016 Annual Membership Fees

Annual Fees Renewal Notices will be forwarded in November. Renewal Notices will be sent by email, with posted copies only to members for whom no email address is held.

Journals – Print V Digital

All members are entitled to receive the printed and digital issues of The Naval Architect (+ Warship Technology + Offshore Marine Technology). Members have the option to receive the digital version only, with a corresponding reduction in membership fee.

John Scott Russell

Many members will have heard of John Scott Russell (after whom one of the meeting rooms at Headquarters is named) who was one of the founding members of the Institution of Naval Architects in 1860. However, few will be aware of the details of his career, and of both his achievements and the misfortunes he suffered during it.

www.rina.org.uk/MyRINA

The My RINA page gives access to a member's personal pages on the RINA website, including My Membership Record, My Account and My Profile.

Letters to the Editor

Do you have information about the company Hay and Smart, Naval Architects and Marine Engineers?

People in the News

The Institution congratulates those students whose achievements have been recognised by the award of RINA Student Awards.

Where to stay in London

Members and their guests visiting London on business or pleasure may take advantage of the Institution's membership of Club Quarters to stay at its Trafalgar Square Hotel, situated at 8 Northumberland Avenue – less than one minute's walk from RINA Headquarters.

2016 Annual Membership fees

Anual Fees Renewal Notices will be forwarded in November. Renewal Notices will sent by email, with posted copies only to members for whom no email address is held.

The recommended and preferred method of payment for members with access to a UK bank is by Direct Debit. Payment is taken when due on 1 January 2016, and no further action is required. This ensures that payment of membership fees is not overlooked, and avoids the need for me to write to members in June 2016, informing them that they are about to be removed from the Membership Roll and registration with the Engineering

Council for non-payment of fees, their journals having been stopped earlier. Direct Debit Mandate Forms are available from Headquarters.

Membership fees may be paid online by all major credit cards. Payment can also be made by bank transfer or personal cheque drawn on a GBP, Euro, A\$, NZ\$, Can\$ or US\$ account, but members should remember that the bank will make a charge for transfer and ensure that the full amount due is transferred.

JOURNALS – PRINT V DIGITAL

All members are entitled to receive the printed and digital issues of *The Naval*

Architect (+ *Warship Technology* + *Offshore Marine Technology*). Members have the option to receive the digital version only, with a corresponding reduction in membership fee. The financial saving apart, many members find this to be the most convenient method of receiving and reading the journals, whether on a PC or tablet. Members receiving the digital issue have access to all archived issues.

Members are requested to check their MyRINA page before paying their 2016 Membership Fee, to ensure they are receiving the correct journal version or to or to receive the digital version only.

www.rina.org.uk/MyRINA

www.rina.org.uk/MyRINA, which gives access to a member's personal pages on the RINA website, has recently been extended and updated. Comments on the revised 'My RINA' to hq@rina.org.uk with the Subject: My RINA would be welcomed.

My Membership Record

The 'My Membership Record' page holds a member's Personal Details, Home Address, Business Address and Correspondence Address held by the Institution. Members are requested to update their personal details directly from the page, rather than emailing Headquarters.

Each year, the Institution sends out over 180,000 copies of the journals, a total paper weight of over 35tonnes. Unfortunately, a number of those are returned "not known at this address", usually because members have forgotten to inform the Institution of their change of address. In addition to the

waste of postage, the Institution is charged for those returned from other than the UK. Additional cost is then incurred when members ask for the missing copies.

Members are urged to check and keep their personal details and addresses up to date.

My Account

The 'My Account' page shows membership and registration fees, together with journal subscriptions, which may be due. Payment can then be made online with credit or debit card. A receipt will be sent without request, normally within 48 working hours of payment being received into the Institution's account. After payment is received, the 'My Account' page will show details of fees and journals subscriptions paid.

My Profile

The 'My Profile' page allows members to record the sectors of the maritime

industry and the professional activities with which they are involved.

Such information about members' employment and activities is invaluable in enabling the Institution to better identify and respond to members' professional needs. Members are therefore urged to complete and keep their profile up to date.

Members Services

The 'Members Services' page gives access to those pages of the website restricted to members, eg BMF Reports, professional and personal services, etc.

Change Password

Access to 'My RINA' is through username (email address) and password. The 'Change Password' page allows members to change their password at any time. Members experiencing difficulties in accessing their 'My RINA' pages should contact webmaster@rina.org.uk

THOUGHTS FOR THE MONTH

If my ship sails from sight, it doesn't mean my journey ends, it simply means the river bends

Enoch Powell

Set your course by the stars, not by the lights of every passing ship

Omar N. Bradley

News from the Divisions, Branches and Sections

New South Wales Section

Terea Magoga of the Defence Science and Technology Organisation (DSTO) gave a presentation on *Aluminium Ship Structures Research: The Armidale Class Patrol Boats* to a joint meeting with the IMarEST attended by 42 on 6 May in the Harricks Auditorium at Engineers Australia, Chatswood.

Doug Matchett of the Australian Maritime Safety Authority (AMSA) gave a presentation on *AMSA'S Marine Surveyor Accreditation Scheme* to a joint meeting with the IMarEST attended by 20 on 3 June in the Harricks Auditorium at Engineers Australia, Chatswood.

Roger Neill and Martin Rowan of the Defence Science and Technology Organisation gave a presentation on *The 2014 Maritime Archaeological Survey of the Sunken Submarine HMAS AE2* to a joint meeting with the IMarEST attended by 41 on 1 July in the Harricks Auditorium at Engineers Australia, Chatswood.

John Jeremy of the Royal Institution of Naval Architects gave a presentation on *The Flexible Multi-role Warship* to a joint meeting with the IMarEST attended by 25 on 5 August in the Harricks Auditorium at Engineers Australia, Chatswood.

Phil Helmore

2015 President's Invitation Lecture

Maritime LNG – The Future Is NOW

19 November 2015

One Whitehall Place, London, UK

The 2015 President's Invitation Lecture will be presented by Mr Peter I. Keller, Executive Vice President of TOTE Inc. In his Lecture, he will review an all-encompassing LNG programme that includes the world's first dual fuel LNG Containerships, the major conversion to dual fuel LNG power of existing RoRo tonnage, LNG long term supply procurement, LNG liquefaction plant development to support the maritime projects and LNG logistics that includes truck, barge, and cryogenic pipeline transfer of LNG often using newly developed processes.

Details are shown at www.rina.org.uk/Events

Letters to the Editor

Hay & Smart

Sir; I am a director of a marine surveying company, based in the Bristol Channel area, called HAY & SMART. I am contacting you in an attempt to trace the origins of the company, which I brought from SGS (Society General Surveillance) about 30 years ago.

I know the company operated primarily

in Merseyside with papers connected to Cunard being held by the National Maritime Museum. It is my understanding that the founders were a Mr Hay and a Mr Smart and that the company was originally operating as Naval Architects and Marine Engineers, possibly dating back to World War 1?

Any information or contacts you could provide would be greatly appreciated and welcomed,

Paul Coombs
Master Mariner
draughtsurveyman@hotmail.com

THOUGHTS FOR THE MONTH

The only safe ship in a storm is leadership

Faye Wattleton

It's not the towering sail, but the unseen wind that moves the ship

English Proverb

Nominations invited for election to Council

Corporate Members (Fellows and Members)

Any Corporate Member may nominate a Corporate Member to stand for election to Council.

Each nomination of a Corporate Member must confirm that the nominee is eligible and is willing to stand for election, and contain the signatures of three Corporate Members who support the nomination.

Non Corporate Members (Associate Members and Associates)

Any Voting Member (all except Student Members and Junior Members) may nominate a Non-Corporate Member for election to Council.

Each nomination of a Voting Member must confirm that the nominee is eligible and is willing

to stand for election, and contain the signatures of not less than three Voting Members who support the nomination.

Members are not permitted to sign more than three nominations for election to Council. Nominations should be made by letter to the Chief Executive, to arrive at the Institution's Headquarters by 31 December 2015.

People in the News

Newcastle University

The RINA – BAE Systems Student Awards for the best final year project in the Bachelor of Engineering with Honours course at Newcastle University (Singapore Campus) have been awarded to:

Sim Yong Cheng Thomas
(Marine Engineering)

Ang Jian Wei
(Offshore Engineering)

Tee Jackson
(Naval Architecture)

University of Malta

The RINA Student Award for the best marine-related final year project on the Bachelor of Engineering with Honours course at the University of Malta was awarded to:

Ian Hubbard

Also commended for their projected were:



Ian Hubble receives his award

Luke Masini
Dennis Dalli
Steven Schembri
Antonio Camilleri
Jan Bonello

Marco Abela
Karl Mizzi
Abigail Muscat
Mitchell Borg
Robert Vella



Final year students
at Malta University

Where to stay in London

Members and their guests visiting London on business or pleasure may take advantage of the Institution's membership of Club Quarters to stay at its Trafalgar Square Hotel, situated at 8 Northumberland Avenue – less than one minute's walk from RINA Headquarters.

The Institution's membership provides a fixed lowest rate of £159

per room which is always available to conference delegates, regardless of the varying higher rates throughout the year for non members. An even lower rate is available only for Institution members and guests at weekends (Fri, Sat and Sun) and holidays (£69). Guests do not need to be accompanied by the member.

Other benefits include access to the Club Living Room with complimentary refreshments, WiFi and unlimited chilled, purified bottled water, and a Rewards Programme offering a "Night on the House" after just one stay.

Members may find details of the facilities offered by Club Quarters Trafalgar Square or book online at <http://clubquarters.com/royal-ins-naval-architects>, using the login "RINA" (without the quotes) on their first visit and selecting Trafalgar Square from the choice of hotels.

Members and their guests who wish to take advantage of the lower rate at weekends, which is not shown online, should contact ClubQuarters at +44 (0)20 7451 5800



Club Quarters -
Northumberland Avenue

LINKEDIN

- Are maritime companies good (enough) in engaging with the shipyards when developing new products?
- Fire Control Plan - Is it mandatory to get Fire control plan approved by class as per SOLAS?
- Why is discussing Ship Efficiency so Important?
- Can an LL certificate be issued with Summer freeboard marked but the value not mentioned.
- "Negligence" vs "misconduct"
- Can we calculate RAO analytically in spreadsheet for all degree of freedom of ship's motion
- Polish graphene could revolutionize the yacht and aviation industry
- How is canoe body draught defined? How is it measured?
- Predicting the strength of sandwich laminates against impact loads from floating objects

Just some of the topics discussed recently by the members, now 12,700+, of the RINA group on the online professional networking site LinkedIn. The group provides a forum for members of the group to seek or provide technical information, or to discuss matters of professional interest. The group has a no advertising policy.

To join the LinkedIn group, go to www.linkedin.com/groups?mostPopular=&gid=3077992 or follow the link from the RINA website home page at www.rina.org.uk

John Scott Russell

Many members will have heard of John Scott Russell (after whom one of the meeting rooms at Headquarters is named) who was one of the founding members of the Institution of Naval Architects in 1860. However, few will be aware of the details of his career, and of both his achievements and the misfortunes he suffered during it.

John Scott Russell was born John Russell, in a humble, white stone cottage in the village of Parkhead, near Glasgow, in 1808. His family were not wealthy, and his mother died soon after he was born. Later, as a young man, he added his Mother's maiden name to become John Scott Russell.

He studied at St Andrews and later at Glasgow University, from where he graduated with an M.A. at the remarkably early age of 17. He taught mathematics in Edinburgh, and his exceptional gift of clear speaking and power of expression made his lectures the most popular in the city!

He had initially intended to follow his father into the church, but he was naturally drawn to engineering and studied steam engines and boilers. In 1834 a "Steam Carriage" service between Glasgow and Paisley was inaugurated with steam carriages designed by Russell. The carriages were of an innovative design and performed well. However, following a fatal crash the service ended. It was not be Scott Russell's last encounter with misfortune!

Russell had previously been contracted to study the feasibility of improving steamboat travel along canals. This led to his long series of studies into hydrodynamics. He studied the behaviour of the wave created by the forward motion of a hull through still water, and noticed that when the hull ceased moving, the wave continued moving at a constant speed and height. This led him to develop what he called his "Wave Line" design for ship's hulls, which improved their efficiency in cutting through the water. His pioneering studies and experiments greatly influenced the construction and



John Scott Russell



The Scott Russell Room at Headquarters

design of ship's hulls, and his work is still recognised today.

Sometime after 1844 he moved to London. He gave up his job as a shipyard manager for that of the Editor of a railway journal! Russell was already a member of the Royal Society of Edinburgh and the Royal Scottish Society of Arts. He was quickly recruited into the Royal Society of Arts as Secretary. This Society, founded in 1754 sought "*the encouragement of Arts, Manufactures and Commerce*" and to "*enrich society through ideas and actions*". Although it had as its President, Prince Albert, the Society was not in good shape, either organisationally or financially. Russell quickly reorganised it and improved its finances. He was a prime mover of the Great Exhibition of 1851, held in Joseph Paxton's magnificent building, the Crystal Palace!

Russell had set himself up as a shipbuilder at Millwall on the Thames and it was he whom Isambard Kingdom Brunel consulted regarding his concept of a vast steamship, capable of steaming nonstop to India. The result of their collaboration was "*The Great Eastern*" of 1858, built in Scott Russell's Millwall yard. At nearly 700ft long and displacing 32,000tonnes, the ship would not be surpassed in size and tonnage until 1901. Although thought of by history as a "Brunel Ship", Scott Russell did much of the design work, including the hull, and the paddle wheel engines, which he also manufactured. They were the biggest steam engines ever built at that time.

His skills as an engineer and ships architect have never been fully appreciated by history. He built ships that were successful and well designed. He designed the world's first "ironclad" warship, the "*Warrior*".

He was a prime mover in the formation of the Institution of Naval Architects (now the Royal Institution of Naval Architects) whose first headquarters were at the Royal Society of Arts where Scott Russell was Secretary.

He was elected a Fellow of the Royal Society, was on the Council of the Institution of Civil Engineers, and a member of the Institution of Mechanical Engineers.

He attempted to mediate in the American Civil War, and became a middle-man in a scheme by the Confederate Government to purchase guns from the great armaments firm of William Armstrong.

Scott Russell was undoubtedly a brilliant engineer and naval architect. He was erudite, had an appreciation of the arts as well as the sciences. He did not seek to make enemies and was courteous in all his dealings. He had meetings with Prince Albert at Buckingham Palace, Windsor Castle and at his shipyard. He entertained the great and the good at his dinner table in Sydenham, ably supported by his clever and charming wife. However, ill-luck and bad financial management dogged him throughout his life.

Shortly after building the *Great Eastern*, his shipyard had gone into liquidation. He had under quoted for the contract and there were delays and over-runs on costs. The yard suffered a disastrous fire, largely uninsured. In addition, Russell received substantial payments in the form of shares in the steamship company, not cash.

Brunel suspected that Russell had diverted some of the iron plates meant for the *Great Eastern*, to other ships he was building in the same yard, although he was never directly accused.

His designs for the *Warrior* were not acknowledged by the Admiralty, who claimed they were partly their idea, partly general shipbuilding knowledge. As a further insult, they did not even award Russell the contract to build the ship!

His role in the attempt by the Confederate Government to buy guns was disastrous! The contract was never completed by Armstrong, and Russell was unable to pay the balance due on an undelivered gun! He had previously received payment from the Confederates, but was financially embarrassed at the time payment was demanded, and was

unable to settle the account. His financial difficulties may have been due in part to his attempt to set up his son, Norman, as a shipbuilder in Cardiff. The venture was not long lived.

The financial state of the Scott Russells was often precarious. They appeared to live “hand to mouth” based on the amount of consultancy work being achieved. However, Scott Russell did nothing by halves! As a Consulting Naval Architect and Engineer, he had offices in Great George Street, the “Harley Street” of Engineers. In his grand house in Sydenham, he employed four servants.

Russell spent considerable time in Europe undertaking consulting work, advising on railway routes and designing ferry boats. In 1871 he was invited to design and tender for the construction of a large arena for state ceremonies at the Vienna Exhibition of 1873. Russell designed what was the largest rotunda in the world. It was 354ft across and 284ft high. It was an amazing feat of engineering innovation and design.

In a remarkable parallel with the Crystal Palace, with which Scott Russell

had been so intimately connected, he had two weeks in which to prepare initial design drawings – exactly the same time Paxton was given. The building was erected very speedily – as was the Crystal Palace, and it was destroyed by fire in 1937, just 10 months after a similar fate befell Paxton’s masterpiece!

In the years following, Scott Russell continued to live on a financial knife edge. His wide ranging interests lead him into campaigns to improve education in Britain. He proposed an all party political coalition to work on social matters to improve the lot of the poorer levels of society. He even tried to mediate in the Franco-Prussian War. He became ill in 1881. He sold the house in Sydenham and moved to Ventnor on the Isle of Wight, where he died “in reduced circumstances” on 8 June 1882.

A truly remarkable naval architect!!

This article is based on an article published in the house magazine of The Sir Arthur Sullivan Society, with whom Scott Russell’s daughter had a love affair.

THE ENGINEER

“The engineer is the key figure in the material progress of the world. It is his engineering that makes a reality of the potential value of science by translating scientific knowledge into tools, resources, energy and labor to bring them into the service of man ... To make contributions of this kind the engineer requires the imagination to visualize the needs of society and to appreciate what is possible as well as the technological and broad social age understanding to bring his vision to reality.”

Sir Eric Ashby

“Engineering is not merely knowing and being knowledgeable, like a walking encyclopedia; engineering is not merely analysis; engineering is not merely the possession of the capacity to get elegant solutions to non-existent engineering problems; engineering is practicing the art of the organized forcing of technological change... Engineers operate at the interface between science and society”

Dean Gordon Brown

“The ideal engineer is a composite ... He is not a scientist, he is not a mathematician, he is not a sociologist or a writer; but he may use the knowledge and techniques of any or all of these disciplines in solving engineering problems.”

N. W. Dougherty

“An engineer is someone who can do for a pound what any damn fool can do for ten pounds”.

Neville Shute Norway