RINA AFFAIRS

JUNE/JULY 2015

The Newsletter of the Royal Institution of the Naval Architects

CHIEF EXECUTIVE'S COLUMN

July saw the second anniversary of the Institution's move to its new Headquarters at 8-9 Northumberland Street. During the past two years, it has been a pleasure to welcome many members to the new Headquarters, all of whom have – they tell me – been most impressed by the building, the modern facilities which it now offers, and its location. Any member who has not yet had the opportunity is most welcome to call in at the Headquarters and judge for themselves.

The meeting rooms at Headquarters – the Denny Room, the Scott Russell Room and the Froude Room – are described in more detail in this issue of RINA Affairs, as is the history of the Institution's Headquarters since 1860. The meeting rooms are used for the Institution's conferences and courses, as well as Board, Council and Committee meetings. They are also available for use by other organisations, for whom they provide a low-cost (for London!), well-located (rail and underground links within 5 minutes' walk) meeting facility, offering full AV in all rooms, tele-conferencing and free WiFi. Catering can be provided at whatever level is required. The rooms may be hired by members for meetings etc at a discount. Members passing the time between meetings, trains, flights etc are welcome to do so at Headquarters, subject to the rooms not being used, and make use of the free WiFi and (also free) coffee. Members overnighting in London may also wish to take advantage of the reduced rate at the Club Quarters (just across the road from Headquarters) negotiated for members and their guests.

Members who have visited the new Headquarters will have seen the many pictures of ships and marine structures of all kinds which have been donated by companies, large and small. in the maritime industry. However, there remains plenty of space on the walls for more pictures. If you or your company would like to donate a framed picture, please contact me.

The move of Headquarters provided an opportunity to update of the facilities at Headquarters, and particularly its IT system. As with most IT programmes, all was not smooth sailing, but the benefits are now being experienced in the management of membership and other activities. The interface between members and the Institution has been improved by the updating and expansion of the members' pages at www.MyRINA.org.uk Each member now has personalised My Membership Record, My Account and My Profile pages, through which members can update their personal details. I would urge members to visit their My RINA pages and make sure their details are up to date.

And finally, may I take this opportunity to commend the RINA group of the professional online network Linkedin. This provides the Institution's technical forum in which the Institution and members of both the Institution and the global maritime community can seek or provide technical information, or to discuss matters of professional interest.

Chief Executive

IN THIS ISSUE

My RINA
Each member now has personalised My Membership Record, My Account and My Profile pages, through which members can update their personal details.

Division & Branch News
The inaugural meeting of the Institution's newest Branch was held at Kochi, India.

RINA Headquarters 1860 –
The Institution's Headquarters before moving to 8-9 Northumberland Street are described.

RINA Headquarters 2013 -
Members are invited to visit the Institution's new Headquarters, and to use its facilities.

Letters to the Editor
The attention of all members concerned with stability is drawn to a recent paper "Backs Against the Wall" by R J Dunworth in the International Journal of Small Craft Technology.

People in the News
The achievements of students at the Universities of Malta and Strathclyde are recognised by the presentation of RINA Student Awards. The Institution congratulates those students on their achievement.

Where to stay in London
Members and their guests are entitled to a discounted rate at the Club Quarters, one minutes walk from RINA Headquarters.

My RINA

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 may update their personal details directly from the page.

Each year, the Institution sends out more than 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 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 access their 'My RINA' pages should contact: webmaster@rina.org.uk

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

News from the Divisions and Branches

Kochi Branch

The official inauguration of the Royal Institution of Naval Architects (RINA), Kochi branch was held at Sree Narayana Gurukulam College of Engineering (SNGCE), Kadayiruppu.

The function was attended by eminent personalities from all the stake holders from maritime sector in Kerala including Indian Navy, shipyards, classification societies, ship design firms, academia and research organisations. The total attendance was more than 175 including student members from CUSAT and SNGCE.

The function commenced with a prayer and Anthony Prince, Chairman RINA branch, welcomed all guests, members, students, media and sponsors to the function. Thereafter Chief Executive, Trevor Blakeley, officially inaugurated the branch by lighting the traditional lamp and delivered the inaugural address. Mr Blakeley presented an overview RINA activities all over the world and the opportunities to its members.

This was followed by presentation by dignatories:-
Mr Syam Kurup Global Vice President of the Aries Group of Companies
Mr Hariraj P, General Manager of SEDS
Dr K. Sivaprasad Head of the Ship Technology Department (CUSAT)
Mr Madhu S. Nair, Chief General Manager of Cochin Shipyard Ltd.
Dr Saji CB, Principal, SNGCE

Chairman of the Kochi Branch, Mr Anthony Price

This was followed by an interactive session in which experts discussed their views on a diverse range of subjects ranging from ship design, shipbuilding, industrial & academic perspective on maritime training and education in India etc. The interactive session also touched upon the various urgent concerns that the stakeholders of the Indian maritime industry currently face.

The official function was concluded with vote of thanks by Prof. P.K Satheesh Babu (Hon. Secretary), and National Anthem. The informal interaction continued during the delicious buffet lunch.

Other elected committee of the branch members are Mr Sandith Thandassery (Treasurer), Dr Sunil Kumar P.G (Membership), Dr Dileep Krishnan , Madhu S. Nair, Hariraj P. Mohammed Shaheel and Jishnu Saji.

Mr Antony Prince
Chairman, Kochi Branch

Australian Division Technical Library

The 190+ papers presented at Section and Division meetings are now available to all members at www.rina.org.uk/AusDiv/TechLibrary

Mr Trevor Blakeley inaugurates the branch by lighting the traditional lamp

Hon. Secretary, Professor. P.K Satheesh Babu, introduces Mr Trevor Blakeley

People in the News

RINA Student Naval Architect Awards

University of Malta

The RINA Student Naval Architect Award for the best final year project was awarded to Ian Hubbard, for his project *Ship Resistance, Propeller* and *Rudder Interaction and Optimisation in the Preliminary Design of Commercial Vessels.*

Certificates of Achievement were awarded to:

Luke Masini
Dennis Dalli
Steven Schembri
Antonio Camilleri
Jan Bonello
Marco Abela
Karl Mizzi
Abigail Muscat
Mitchell Borg
Roberta Vella

RINA – BAE Systems Awards

Strathclyde University

The RINA – BAE Systems Student Award at for the best final year project at Strathclyde University was presented by Alan Rogers, Chairman of the Scottish Branch, to Naveen Sharma for his project *Analysis of Unconventional Artificial Reef System.*

Strathclyde students and judges at the RINA-BAE Systems Awards

Letter to the Editor

Inclining Experiments

Sir: The attention of all naval architects concerned with stability is drawn to a recent paper "Backs Against the Wall" by R J Dunworth in the International Journal of Small Craft Technology, Vol 156, Part B2 2014, page 99, (may be read online at www.rina.org.uk/p/1/IJSCT%20-%20Back%20Against%20the%20Wall.pdf) which exposes inherent inaccuracies of the traditional manner of analysing the results of an inclining experiment. The effect of these inaccuracies can for some hull forms result in the vertical-centre-of-gravity being significantly underestimated, thus giving an optimistic idea of the reserves of stability.

In one example quoted by the author, the KG of a 57m naval patrol boat was underestimated by 12.2cm (about 5 inches) using the conventional approach. The traditional approach is shown to be especially inaccurate for vessels with significant flare anywhere around the waterline, which is very often the case for small craft.

The proposed new method of analysis does not rely on the assumptions implicit in the traditional approach (especially vertical topsides in way of the waterline and absence of movement of the metacentre) but uses KN data to produce a rigorous result.

Most convincing is the analysis given of a proa (a catamaran with grossly different sized hulls) in which the new method achieved a regression coefficient of 1.000 whereas the traditional approach was totally unable to reconcile the different GMs resulting from the different roll stiffness in either direction of heel.

It seems rather surprising that the subject of analysing the results of an inclining experiment is given so little attention in publications generally, but especially its complete omission from the IMO Code on Intact Stability.

There has been a vigorous discussion of this issue on LinkedIn.

A Blythe
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THOUGHT FOR THE MONTH

The ship that will not obey the helm will have to obey the rocks.

English Proverb,

University News

Professor David Andrews Elected Chair of IMDC International Committee

IMDC is the premier marine design conference having commenced at RINA HQ London in 1982 and been as far afield as Trondheim in Norway, Ann Arbor in Michigan, USA and Seoul, Korea. Prof Andrews, leading the large UCL team, co-authored several UCL papers and gave his own paper on systems architecture in ship design plus co-authoring one of two State of Art Reports to the conference, on design methodology, together with Prof Stein Ove Erikstad from Trondheim. The other SoA report was given by Prof Vassalos from Strathclyde University together with Prof Papanikalaou from NTU Athens.

Prof Papanikalaou, who stood down after nine years as Chair of the IMDC International Committee is to be succeeded by Prof Andrews, who will lead the committee as it looks forward to 2018 and the 13th Conference in the series–to be hosted by Aalto University in Helsinki. After such a successful conference at Tokyo (which was delayed from 2012 due to the 2011 tsunami and concluded with a shipyard visit to the Mitsui Shipyard in Tokyo Bay following four days of traditional Japanese hospitality) the International Committee looks forward to another excellent international shop window, in three years time, on cutting edge research across the full range of maritime design, from submarine design to fishing boat design.

Small Craft Surveyors Forum

Annual Conference

The SCSF annual conference at the Seawork Exhibition in Southampton was held on board the "Ocean Scene" with the theme "Workboats and Surveyors". Over 40 interested persons were on board to hear from the distinguished speakers: Richard Morris and Gary Venning on RNLI surveying their lifeboats by condition based maintenance (CBM); Jenny Vines from MCA giving an update on the Workboat Code; and Simon Mockler from DNV-GL on issues of design, propulsion and personnel transfer of offshore wind farm support vessels.

Lifeboats

The RNLI sphere of activity includes 236 lifeboats stations and 430 lifeboats. Traditionally lifeboat refits were calendar based with boats kept afloat having a refit every 3 years and for those 'housed' every 5 years with refits 'gold plated' and taking an average 16 weeks. The decision was taken to change to CBM to better utilise assets, equipment and personnel which would increase reliability and improve the overall condition of essential equipment. Since the introduction of CBM, results so far showed a reduction in refit packages and stock levels, more inspections being carried out and better work planning with resultant annual cost savings. At present 60 – 70 surveys are carried out each year and over half are now CBM based. Surveys are organised to tie in with haul outs and defects recorded, prioritised and programmed. On the Severn and Trent Class boats, these usually take about a week, including sea trials. All processes and documents are continuously reviewed leading to improved working practices.

Wind farms

Simon Mockler described the wind farm industry as being still relatively young, beginning some 24 years ago off Denmark with 11 turbines in shallow water 1 -3 km offshore. Wind farms are now being planned in deeper water up to 100km offshore. Innovations in design have occurred in the meantime – each new generation of workboat being improved from the experience from previous generations. New designs include SWATHs (small waterplane area twin hull vessel) and surface effect ships, e.g. air cushioning, of which there was one example on the quayside at Seawork.

Propulsion of these service vessels, of which there are about 450 in service, is about 50% using fixed pitch propellers with 35% using water jets and about 10% having controllable pitch propellers. Some new vessels use pod drives giving them high manoeuvrability. Suitability of propulsion is highly dependent on site specific conditions and the experience and skill of the Master.

Mockler went on to discuss the industrial personnel carried who are neither passengers nor crew. This SOLAS requirement is still being debated at IMO and recently IMO agreed to develop provisions addressing safety standards for the carriage of more than 12 industrial personnel.

As wind farms become established further offshore, the impact on offshore and onshore logistics, maintenance and operations is considerable, needing larger vessels to service them. Daily trips will be uneconomical and so there will probably be some sort of offshore base with smaller workboats operating from there and floatels for workers.

Access to an offshore wind farm site is the critical measure of a service vessels performance, and the operationally limiting significant wave height is typically the sole parameter. However, investment decisions are difficult and a greater assurance of vessel performance is required.

Mockler concluded that the wind farm sector will continue to make significant innovation in design and operation; continued growth with ever greater focus on cost reduction and changing charterer expectations. Operating environments are becoming much harsher and different to comparatively sheltered waters and geographic focus, which is very much NW European oriented at present, is on China and America where developments are increasing.

Sandwiched between these presentations, Jenny Vines from MCA gave a brief update on the "Workboat Code", saying it is still in consultation stage, but the intention is to have it finalised for publication soon. Answering questions from the audience, Vines noted that existing vessels will still meet the old code requirements, and that the workboat area was now considered mature and regulation would be passed over to other bodies.

RINA Headquarters 1860 - 2015

Adelphi Terrace: 1860 – 1928

Following its formation in 1860, the Institution settled in rooms at Adelphi Terrace, first at No. 7, then at No. 9 and finally at No 5. The proximity of Adelphi Terrace to the Royal Society of Arts where John Scott Russell, a founder member of the Institution of Naval Architects, had been Secretary, and where for many years meetings of the Institution were held, made the choice of the Institution's first headquarters very convenient.

Adam Street: 1928 - 1938

With the reconstruction of Adelphi Terrace after the 1914-1918 war, in 1928 the Institution moved its Headquarters to the south corner of Adam Street nearby.

Upper Belgrave Street: 1938 - 2013

In 1938, the Institution moved to 10 Upper Belgrave Street, and in 1955, the Headquarters were extended to include a Lecture Hall, the building of which was greatly facilitated by the generosity of the late Viscount Weir of Eastwood, an Honorary Vice-President of the Institution, after which the hall was named. The wood paneled Denny Library was named after Sir Archibald Denny, an Honorary Vice-President of the Institution.

Northumberland Street: 2013 –

In 2013, the Institution moved to 8-9 Northumberland Street, not far from both Adelphi Terrace and Adam Street. Maintaining the links with its previous Headquarters, two of the meeting rooms were named the Denny Room and the Scott Russell Room.

THOUGHT FOR THE MONTH

No man will be a sailor who has contrivance enough to get himself into jail; for being in a ship is being in a jail, with the chance of being drowned … A man in jail has more room, better food, and commonly better company.

Samuel Johnson, 1759

LINKEDIN

- Calculating RAO analytically in spreadsheet for all degree of freedom of ship's motion.
- Graphene could revolutionize the yacht and aviation industry
- Canoe Body Draught
- Predicting the strength of sandwich laminates against impact loads from floating objects
- Report of MEPC 68 (11-15 May 2015)
- European Boat Design Innovation Group - Wind Farm Support Vessels (EBDIG-WFSV)
- Analysing an inclining experiment

Just some of the topics discussed recently by the members, now 12,600+, 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 http://www.linkedin.com/groups?mostPopular=&gid=3077992 or follow the link from the RINA website home page at www.rina.org.uk

RINA Headquarters 2015

8-9 Northumberland Street, London

The Scott Russell Room

One of the meeting rooms in the new 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.

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 Scott Russell Room

The Denny Room

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

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 1,500 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.

conferences in the Denny Room

Board meetings in the Denny Room

The Froude Room

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

The Froude Room

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.

Foyer

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

The foyer

THOUGHT FOR THE MONTH

A ship should not ride on a single anchor, nor life on a single hope.
Epictetus