THE AUSTRALIAN NAVAL ARCHITECT

Volume 29 Number 1
April 2025

ASRG Dockmaster Training Course

The ASRG Dockmaster Course is a four-day course which covers the fundamentals and calculations required for all aspects of the safe docking and undocking operations of all vessel sizes and types.

The ASRG Dockmaster Course was developed exclusively for the Australian Shipbuilding & Repair Group to suit the needs of the Australian marine industry. The course is delivered face-to-face in a classroom setting with calculations in metric units

The course is approved by the RINA for Continuous Professional Development

The ASRG Dockmaster Course has previously been approved
for Australia's Defence Industry (SADI) rebate of course fees for eligible SME companies

The next course is scheduled to be conducted at:

Sydney: Tuesday 15 to Friday 18 July 2025

Additional courses are under consideration for Osborne, Henderson and Cairns

Competitive rates are offered on application with further discounts provided for eligible ASRG member companies and also approved serving Defence Force personnel and veterans.

For details: Liz Hay, ASRG Chief Executive, at liz.hay@asrg.asn.au

ASRG Australian Shipbuilding & Repair Group
PO Box 756
ASHMORE CITY QLD 4214

THE AUSTRALIAN NAVAL ARCHITECT

Journal of
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Phil Helmore (Photo courtesy Sally Charity) and John Jeremy (Photo courtesy subject)

Facing Photo:
Ranger class at Australia Day Regatta (Photos John Jeremy collection)

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www.rina.org.uk/publications

From the Division President

Jonathan Binns

To all our Australian RINA members and everyone reading this freely distributed journal, welcome to the first edition for 2025 of your favourite, informative and most relevant publication on Naval Architecture in Australia.

Since last November our technical presentations schedules have been less, but as mentioned in the previous ANA they were replaced with end of year catch ups in the ACT, Victoria and NSW, a Model Solar Boat Challenge in Tasmania, the Fremantle Maritime Day in WA and numerous other catchups in SA and Qld. These have provided great opportunities to connect and reconnect with colleagues and the wider community. And as we find out every time we ask the question, it is the connections made and maintained that make up RINA.

We did have at least two presentations, one by Martin Renilson from University of Tasmania in Adelaide on the "Structural Integrity and Safety of Older Ships in a Seaway" as well as one from Wayne Burns from Anode Engineering delivered in Queensland titled "Marine Corrosion and Protection – Are the anodes working?". These offer an amazing way to find out what Naval Architects are doing around Australia and increase your CPD.

Having a look at what's coming, 2025 is certainly another big year for the maritime industry. We started off with an updated Naval Shipbuilding plan, released in the last few days of 2024 (so it could keep the 2024 year stamp I think). We have seen a lot of this plan before, but this one has previously tightly held timings on all major build programs in Annex A. Looking at the schedule and how each line overlaps, it is clear why the ambitious build program needs to be distributed around the country and why a very deliberate shipbuilding plan is needed.

By the time you're reading this the Australian Wooden Boat festival will have run. RINA members in Tasmania and further afield are, at the time I'm writing, travelling to this festival to start the year inspired by past and present vessel design and construction. Then in March the west will go into the Energy Exchange Australia Exposition (the new AOG). RINA is a key partner in this exposition covering all aspects of the offshore energy industry. Essentially discussions on how this vital section of maritime industry will adapt to the changing needs and aspirations of society.

Then we go into the annual boat shows across the country, highlighting the amazing amount of interest that the maritime industry can muster. The highlight for a lot of the industry is of course the IndoPacific International Maritime Exposition from 4-6 November for which the International Maritime Conference has released the call for abstracts with a submission date of 28 April 2025.

The interest and demand shown in the multitude of events across Australia for maritime engineering (and indeed all disciplines of engineering) is critical to our success as a nation. The Re-Engineering Australia Foundation Ltd (REA) has had an enormous effect at increasing these levels of interest and demand in its 20 year history. We did get notice of a large scaling back of operations for REA and the search for new business models for this vital operation. RINA members have in the past rightly provided valuable numbers to the volunteer base for REA, I really do hope that the new model sticks and we are able to continue to get behind this foundation.

Changes at RINA HQ are coming pretty fast since last October. The CEO position was advertised in January and short listing is going ahead in February. The Naval Architect magazine has been revamped and relaunched to be more member focused. Combining together many of the previous titles including Ship & Boat International, Warship Technology and Shiprepair & Maintenance, the new Naval Architect is set to have more information of greater value.

With support from the Australian Council and the RINA Improvement Working Group, thanks to Warwick Malinowski, Sammar Abbas, Andy Harris and Michael Woodward, I was privileged to be able to host a workshop in Melbourne on 29 November 2024 to discuss and develop realisable and effective plans to help RINA Australian Division adapt to the new challenging environments all professional organisations find themselves in. We have pulled together a report and look forward to presenting it to Council in March.

Finally, and most importantly, we are always on the lookout for more volunteers to assist with how the Australian Division and sections run. The critical positions of Secretary, Treasurer, ANA editors (2) and IMC Organising and Program Committee chairs (6 positions in total) will all need people to contribute to with the same amazing dedication as those currently serving RINA and the profession so amazingly well. Please do get in touch with ideas on how we can continue the amazing work that has been done over many years by the dedicated members in these positions. I really must take the space to shout out and thank right now, Rob Gehling, Craig Boulton, Phil Helmore, John Jeremy and Adrian Broadbent for the many, many hours, days, months, years put in! I've known you for my entire career as a Naval Architect, such is the close knit community

that this industry has always been. RINA and the whole community have been shaped by your work. I've attended three RINA HQ Council meetings so far, and at every one the Australian Division has been held up as an exemplar of how a Division should be run (makes me look great! so thanks.)

Signing off with, please do join your local committee, please do contribute to the activities of the local Sections and indeed those of the Division and the wider Institution, our members are what have made and continue to make us.

Jonathan Binns

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Editorial

This issue of your favourite journal marks the end of an era.

In 1997 Jim Black, David Lugg and Kim Klaka of our Western Australia Section had an idea which resulted in the first four issues of *The Australian Naval Architect*. Having produced those issues, they were unable to continue as outlined by David Lugg in his editorial for the April 1998 issue – refer to *The ANA* archive at https://rina.org.uk/publications/the-australian-naval-architect-archive/.

The following year John Jeremy and Phil Helmore took up the task of producing the journal as Chief Editor and Technical Editor respectively. Over the subsequent 27 years they have teamed to develop *The ANA* by upgrading to A4 size, integration of photos, using colour and last but not least gathering and producing consistently high-quality content; this makes it what we know and love which is, in the eyes of many, one of the most valued features of their RINA membership.

I understand that it was always John and Phil's intention that they would retire from *The ANA* as a team, but no-one could have foretold the events that since the start of this year have led to tragic end of their partnership.

Phil has been bravely and quietly battling mesothelioma for about two years, leading to his passing on 2nd March. Meanwhile John was diagnosed in January with advanced pancreatic cancer, which I know from personal experience to be one of the most deadly of cancers.

I first met Phil in the early 1970s at UNSW Sydney, when Phil was studying for his masters degree and I was an undergraduate. But most of my interaction with him has been through his commitment to RINA. He had been a member of Division Council for a number of years before I joined the Council in 1998. In fact he was Vice-President to Noel Riley in the lead-up to the adoption of the re-written Division by-laws in 1998 which transformed the Division from Sydney-based into a true national body coordinating the activities of all Sections. Phil remained an active Division Council member under the new regime until he reached his maximum term, but thereafter concentrated his efforts on *The ANA* and ensuring the smooth operation of the NSW Section. ANA readers will be aware of his comprehensive summaries of NSW Section technical meetings, while also recalling his regular contributions to the now-discontinued *RINA Affairs* newsletter. These contributions to the Institution should be recognised in addition to his professional achievements outlined in Phil's vale column featured in this issue. He truly personified the Institution's objects which are

> "the improvement of ships and all that specially appertains to them, and the arrangement of periodical meetings for the purpose of discussing practical and scientific subjects bearing upon the design and construction of ships and their means of propulsion, and that relates thereto".

But Phil's influence extended beyond the Institution. His contact with naval architects both within and outside RINA have enabled him to not only insert details of *Naval Architects on the Move* in this journal but also provide a widespread network of relevant job vacancies. I can't envisage anyone else being able to assemble and promulgate such information.

With the assistance of Phil's wife Helen Wortham and Martin Grimm, I have inherited the task of completing John's and Phil's work to see this issue through to publication. Helen has involved herself in fulfilment of Phil's principle of finishing a job properly once committed to it, and we thank her for that at this difficult time.

In recognition of John and Phil's efforts this issue is unique in terms of having their photos on the front cover in place of a marine-related photo, while the inclusion of an extended vale column for Phil doesn't leave space for a technical paper.

This issue also contains vale columns for Alan Taylor and Prabhat Pal, two of our well-known Fellows who have passed away in recent months.

Looking to the future, what is clear is that the Division cannot expect to replicate John and Phil's work into future issues as they have demonstrated over the years a high level of knowledge and skill in not only assembling relevant content for the journal but turning it into a publication. The Division will attempt to assemble a team of volunteers (all are welcome to contact me at rinaaustraliandivision@gmail.com) to do a similar task, but we will be starting from a low base in terms of both contacts providing the information and publication skills. In the absence of enough suitable volunteers the Division may, as a last resort, have to consider ceasing the publication similarly to the situation in April 1998 before John and Phil volunteered to take it on.

I look forward to hearing from volunteers prepared to help save us from such a last resort.

Rob Gehling

STOP PRESS: *As we prepare this issue for publication we learnt that, in addition to the recent loss of Phil Helmore, the end of era mentioned above was completed when John Jeremy finally lost his struggle with cancer on Good Friday 18th April. When we produce another issue it will include an appropriate tribute to John. - Ed*

Letter to the Editor

Dear Editor

I have some comments regarding the article on the docking of James Craig in the November edition of *The ANA*.

The floating dock in Sydney Harbour is owned and operated by the Noakes Group. It was built in 1944 by Morts Dock and Engineering Co in Sydney and operated at Garden Island for around 60 years. When ADI took over from the Naval Dockyard in 1989 the floating dock was transferred, but maintenance literally fell through the cracks with ADI assuming that the Commonwealth was still routinely involved, and none was undertaken except for defects until one of the tanks flooded overnight with a RAN vessel docked, twice. Accordingly the dock was withdrawn from the Facility Qualification for docking RAN vessels. The asset was subsequently sold to the Noakes Group and was totally refurbished at the Yamba slipway.

For a ship leaving the Captain Cook Dock (CCD), there is the East Return Wall and the East Wharf to the right, (and the West Return Wall and West Wharf to the left). Before the East Wharf was expanded in the late 1970s to berth the FFGs, the Floating Dock was moored there, and the East Return Wall was used to moor the Dock Caissons while ships were entering or leaving. But when the FFGs started arriving in the early 1980s the floating dock had to be relocated. The eastern side of GID was considered, having boat pounds and moorings for the destroyer tender HMAS Stalwart plus ships alongside her, but residents across the bay complained and stopped this. As nowhere else could be found the floating dock was moved to the East Return Wall, with floating fenders, where it operated for many years including dockings and undockings. This meant that the caissons had to be berthed elsewhere or held off by the dockyard tugs. However the floating dock partly extended across the entrance of the CCD, so while the smaller vessels could move in and out, any large vessel necessitated the floating dock to move to the East Wharf, which in turn had to be vacant.

The CCD pump outflows are in the East Return Wall. While the drainage pumps work from time to time when the dock is dry, one or two of the three main pumps are used to de-water the dock. Moorings for the floating dock were rigged accordingly.

Facility qualification for docking RAN vessels is based on the USN Military Standard which states that necessary measures for resisting earthquakes shall be routinely applied in seismic areas for all types of dry-docking facilities, including floating dry docks. Sydney is subject to small tremors.

Regarding movement of the floating dock with a vessel therein, in the mid-1980s the Assistant Manager Production forbad this shortly before retiring. A few years later, with the dockyard management changed to ADI, removal of this restriction was considered providing the vessel was sufficiently supported athwartships and fore and aft, and that the floating dock was moved slowly and carefully. Indeed, this is how the larger floating dock in WA operates today, with vessels in docking cradles but with no additional constraints.

Noting the restrictions imposed on operating the floating dock around Sydney Harbour, and its usefulness to the Navy, and noting the precedence of commercial dockings in the CCD, could a more permanent berth be found at Garden Island?

Hugh Hyland

The Dock in use at Garden Island ahead of the FFG HMAS Adelaide
(Provided by Hugh Hyland)

The Internet

RINA Webcasts

RINA has set up a YouTube channel and RINA webcasts can be viewed there. The RINA YouTube channel is at

https://www.youtube.com/channel/UChb1sfHbWfQmG-iwpp_QGJg

Bookmark this website and keep your eye on it!

Video recordings of Australian section presentations should be sent to Klaudia Rogala-Haracz <krogalaharacz@rina.org.uk> at RINA HQ for uploading. Recording files are usually too large to be sent as email attachments; a preferable solution is to load the presentation to Dropbox (or similar) and send the URL to Klaudia.

To find a recording of an Australian section presentation, look under Branch and Section Presentations (usually the top line of presentations). If it doesn't show up there or in the next screen to the right, then click on Playlists in the menu bar. Scroll down and across, and click on View full playlist under Branch and Section Presentations.

If you know the name of the presentation, then click in the search icon in the menu bar, type the title of the presentation you are looking for (or at least the first few words thereof) and press Enter.

No new recordings have been added to the RINA YouTube channel in the last three months.

Further recordings will be added to the RINA YouTube channel as they occur.

NSW Section Technical Presentations

Technical presentations are generally combined with the ACT & NSW Branch of the Institute of Marine Engineering, Science and Technology and held on the first Wednesday of the month (February through October) at the Sydney Mechanics School of Arts, 280 Pitt St, Sydney, or at a yacht club, starting at 18:00 for refreshments and 18:30 for the presentation, and finishing by 20:00. Guests are welcome.

The program of meetings for 2025 (with exceptions noted) is as follows:

5 Feb	Ken Fisher, Principal, Fisher Maritime, and a panel *Misunderstandings of the Roles and Benefits of Classification Organisations in the Marine Industry*
5 Mar	Warren "Skip" Miller, Senior Engineer, Composites Consulting Group *From Naval Architecture Dreams to Composite Engineering Reality* at Royal Sydney Yacht Squadron
5 Mar	RINA NSW Section Annual General Meeting
2 Apr	MAN Energy Solutions Australia *Operating Marine Engines on Alternative Fuels*
7 May	Nigel Mathews, Managing Director, Oceans Rivers Lakes *Stability Assessment of a Catamaran using High-throughput Testing and Sea Trials*
4 Jun	Drew Shannon, Managing Director/Salvage Master, United Salvage *Salvage and Emergency Response*
2 Jul	David Payne, Honorary Research Associate and former Curator of Historic Vessels, Australian National Maritime Museum *Walter Reeks, Naval Architect, Yachtsman and Entrepreneur, and the Vessels he Designed*
6 Aug	IMarEST
3 Sep	Alan Steber, General Manager, Steber International *Steber 43 Hybrid Diesel-Electric Workboat* at Royal Prince Edward Yacht Club
1 Oct	IMarEST
4 Dec	SMIX Bash 2025

Warship 2025

Warship 2025 The Future Fleet: Smart Technology, Sustainability and Autonomy will take place on 16–17 June 2025, with additional optional workshops and activities on 18 June 2025, in Glasgow, UK.

Warship 2025 will build on the momentum from this year's successful event in Adelaide, which saw over 230 delegates join us for an inspiring two days of naval defence collaboration and knowledge-sharing. With keynotes from prominent figures like RADM Rachel Durbin and Austal Limited's Glenn Callow, the event covered cutting-edge topics from autonomous vessel design to disruptive technologies, and welcomed attendees from across the UK, Australia, Canada, the US, and Europe.

Returning to the UK, Warship 2025 is set to be RINA's most ambitious conference yet. This year's theme The Future Fleet: Smart Technology, Sustainability, and Autonomy, will set the stage for a packed agenda of thought-provoking presentations, interactive panels, and hands-on workshops.

The sessions will dive into core topics that are shaping the future of modern fleets, and papers were invited on (but not limited to):

- Technology to improve availability
- Glide path to Level 4 autonomy
- Drive toward net zero
- Blend of crewed/uncrewed – Do future platforms need crews?
- Lean crewing
- Tech advancement
- More sustainable build techniques

At Warship 2025, you will have the chance to collaborate with industry leaders, participate in hands-on activities, and contribute to the evolving landscape of naval defence. Don't miss this opportunity to be part of an event that's shaping the future of warship technology.

Registration for Attendees

Registration is now open on the conference website at https://rina.org.uk/events/events-programme/warship-2025-the-future-fleet-smart-technology-sustainability-and-autonomy/. Early-bird pricing was available until 1 March 2025, and cost concessions are available for RINA members, authors, Navy/MoD personnel and recent graduates; the conference is free for student members of RINA.

From 1 March 2025

RINA Member	£900 + VAT
RINA Non-member	£1,000 + VAT
Author	£200 + VAT
Co-Authors	£800 + VAT
Group Fee (3+ Attendees) — fee per ticket	£700 + VAT
Concession (Navy/Ministry of Defence)	£700 + VAT
Concession (Recent Graduates/Masters and PhD Students/Retired)	£350 + VAT
RINA Student Members (Undergraduates)*	Free

Cancellations received in writing up to two weeks before the event takes place will be subject to administration charge of £200. Cancellations received after this time cannot be accepted and are subject to the full event fee. Delegates may be substituted; however, this must be sent in writing and confirmed with the RINA Events Team. It may be necessary for reasons beyond our control to alter the content and timing of the program. In the unlikely event that RINA cancels the event for any reason, our liability is limited to the return of the registration fee.

Sponsoring and Exhibiting

Special thanks to BMT, RINA's returning sponsor! RINA has a few additional sponsorship and exhibiting opportunities available, offering an excellent platform to build brand awareness in the warship industry and to engage directly with our targeted audience. Sponsorship opportunities are limited, so if this is of interest, please contact Rusne Ramonaite at RINA HQ (rramonaite@rina.org.uk) to discuss the available options.

Indo Pacific 2025

The Indo Pacific International Maritime Exposition is the region's premier commercial maritime and naval defence exposition, connecting Australian and international defence, industry, government, academia and technology leaders, in the national interest. The three-day event is a platform for engagement and incorporates an international industry exhibition, specialist conference program featuring presentations and symposia from leading maritime institutions and networking opportunities. Indo Pacific is strongly supported by the Royal Australian Navy, the Australian Department of Defence and the NSW State Government.

AMDA Foundation in conjunction with the Royal Australian Navy has committed to the future dates of the Indo Pacific International Maritime Expositions. Indo Pacific is a critical platform for engagement where customer and industry connect and commercial maritime and naval defence suppliers promote their capabilities to decision-makers from around the world.

The Indo Pacific International Maritime Conference, organised by The Royal Institution of Naval Architects, The Institute of Marine Engineering, Science and Technology and Engineers Australia allows delegates to be involved in discussions concerning the latest developments in naval architecture, marine engineering and maritime technology; both in the areas of defence and commercial shipping.

The IMC coincides with the prestigious Royal Australian Navy Sea Power Conference.

Collectively, the conferences and exposition offer a rewarding program for all those with a professional interest in maritime affairs. The conference program is designed to allow all delegates to visit the many industry displays in the exposition itself, and to conduct informal professional discussions with exhibitors and fellow delegates. Registration for the International Maritime Conference or Sea Power Conference includes free access to the exposition.

IMC 2025 will be held at the International Convention Centre Sydney on 4–6 November.

The International Maritime Conference program 2025 includes presentations under the following topics:

- Commercial Ship Technology
- Naval Ship Technology
- Submarine Technology
- Autonomous Vehicle Technology
- Shipbuilding and Sustainment
- Maritime Safety
- Maritime Environment Protection
- Maritime Cyber Security

Key dates are as follows:

Call for Abstracts	Wednesday 22 January 2025
Abstracts Submission Deadline	Monday 28 April 2025
Author Acceptance Notification	Friday 16 May 2025
Refereed Paper Submission	Monday 11 August 2025
Full Paper Submission	Monday 13 October 2025

For further information regarding the IMC 2025 International Maritime Conference check the website, or contact the Conference Secretariat at:IMC 2025 Secretariat, PO Box 339, North Geelong Vic 3215 or email <imc@amda.com.au>.

Indo Pacific 2027 is also planned for early November in that year. Put these dates in your diary now and plan to be there!

News From The Sections

News from the New South Wales Section

SMIX Bash

The 24th SMIX (Sydney Marine Industry Christmas) Bash was held on Thursday 5 December aboard the beautifully-restored James Craig alongside Wharf 7, Darling Harbour, from 1730 to 2130. The Bash was organised jointly by RINA (NSW Section) and the IMarEST (ACT & NSW Branch). About 190 guests came from the full spectrum of the marine industry, including naval architects, marine engineers, drafters, boatbuilders, machinery and equipment suppliers, regulators, classifiers, surveyors, operators, managers, pilots, navigators, researchers, and educators. Equally importantly, the full spectrum of age groups was represented, from recent graduates to the elders of the marine community. It was also great to see inter- and intra-state visitors among the guests, including Liz Hay from Brisbane, Gregor Macfarlane, Jon Duffy and Dean Cooke from Launceston, Tristan Andrewartha from Hobart, Ken Goh from WA, Greg Hellessey from Canberra and Trevor Ruting from the Southern Highlands.

The crowd enjoying drinks and finger food on board James Craig (Photo Phil Helmore)

Sydney turned on a beautiful evening, partners in attendance enjoyed the view from the decks of James Craig, and many tall tales and true were told.

Drinks (beer, champagne, wine and soft drinks) and finger food (grilled chicken skewers with sweet chilli and lime dip, mini caramelised tomato and fetta tarts, arancini with truffle dipping sauce, bocconcini cherry tomatoes, fresh basil skewers, blackened corn and mint blinis, avocado salsa and house-made cheese and mushroom quiche) were served on the main deck. A delicious buffet dinner was served in the 'tween decks.

Formalities were limited to a speech from the Chair of the SMIX Bash Organising Committee, Belinda Tayler, who welcomed the guests and thanked the members of the SMIX Bash Committee, the Sydney Heritage Fleet, the caterers and, especially, the industry sponsors, and short speeches by representatives of the Platinum sponsors. These were Tony Armstrong for Teekay Shipping (Australia), Bill Harkin from Beaver Engineering, and Sean Langman for Noakes Group.

The raffle was drawn by Theresa Armstong, wife of Tony Armstrong of TeeKay Shipping (Australia) who donated the hampers, and the winners were:

Third	Sam Solanki	Chandon Celebration Hamper
Second	Michael Hickley	Moet with Australian Sweets and Nuts Hamper
First	Rozetta Payne	Christmas Bites with Moet Hamper

The lucky-door prize was drawn by Sean Langman of Noakes Group, who donated the prize, and the winner was Tom Boicos, who scored a $100 gift voucher for Boat Books Australia.

Theresa Armstrong (C) drawing the raffle prize winners with Belinda Tayler and Adrian Broadbent

(Photo Phil Helmore)

Guests enjoying dinner in the 'tween decks

(Photo Phil Helmore)

James Craig at night

(Photo Phil Helmore)

This year's event was sponsored by the following organisations:

Platinum
- TeeKay Shipping (Australia)
- Beaver Engineering
- Noakes Group

Gold
- Asena
- Ausbarge
- Ausbright
- Bureau Veritas
- Halliday Engineering
- SDS

Silver
- AMC/UTas
- Birdon
- Cummins
- Damen Shipyards
- Eptec
- Lloyd's Register
- MAN Energy Solutions
- Wärtsilä

Bronze
- Lightning Naval Architecture
- Maritime Survey Australia
- One2three Naval Architects
- Polaris Marine
- Twin Disc Pacific

Our thanks to them for their generosity and support, without which SMIX Bash could not happen.

It is rumoured that some of the stayers, who were shown the gangway late in the peace, rocked on to other venues and continued to party until the wee small hours.

Phil Helmore

Misunderstandings of the Roles and Benefits of Classification Organisations in the Marine Industry

Ken Fisher, Principal, Fisher Maritime, and a panel comprising Rob Gehling, Geoffrey Fawcett, and Tim Holt gave a presentation on Misunderstandings of the Roles and Benefits of Classification Organisations in the Marine Industry as a webinar (i.e. streamed live only) on 5 February. The presentation was attended by 14 online.

Ken's Fisher's paper, Limited Meaning: Misunderstanding the Role of Class Org, was published in the February 2024 issue of *The Australian Naval Architect* (see https://rina.org.uk/publications/the-australian-naval-architect-archive/) and won the RINA Australian Division's Walter Atkinson Award 2024 for the best paper published in Australia in 2023–24.

Opening the proceedings, Rob Gehling, Secretary of the Australian Division of RINA, made the presentation of the Walter Atkinson Award, comprising a certificate and a plaque, to Ken. Rob mentioned that Ken had previously also received the Walter Atkinson Award in 1972 for his paper Economic optimisation procedures in preliminary ship design (applied to the Australian ore trade) which was presented to the Australian Division (as it was then) on the results of his PhD thesis at the University of Sydney.

Misunderstandings of the roles, capabilities, standards, and procedures of ship classification organizations have contributed to physical casualties, financial losses, and loss of life of shipboard personnel.

The purpose of this presentation was to shine light on the actual roles of classification organizations and thereby assist the marine industry in understanding why unchallenged reliance on classification standards and assessments may not be suitable in certain instances.

In this webinar, Ken made a presentation of the main points in his paper (despite the 2 am start time in the USA!), which was followed by the members of the panel, Rob Gehling from a national and international regulatory perspective, Geoffrey Fawcett from an engineer and owner's perspective, and Tim Holt from a classification perspective. The floor was then thrown open for discussion.

The presentation was not recorded.

The presenter, Ken Fisher, first came to Australia in early 1969 as a lecturer in mechanical engineering and naval architecture at the University of Sydney. Prior to that, he had been an Assistant Professor of Naval Architecture at the New York Maritime College. He is a graduate of Webb Institute of Naval Architecture, with advanced degrees from the University of Michigan and the University of Sydney. He also has been certified in maritime law and arbitration practice.

After four years as lecturer at Sydney University, and adjunct lecturer at the University of New South Wales, in 1973 he returned to the USA. He headed the Management Sciences division at a large consultancy, assisting clients from several countries in the choice of designs and the subsequent acquisition of tankers, LNG carriers, special-purpose ships, and naval auxiliaries. In 1976 he formed the consultancy, Fisher Maritime Consulting Group.

Motivated by his observations of the frequency of disputes arising in shipyard projects, he developed the professional training course, Contract Management for Ship Construction, Repair and Design. It is accredited by RINA. Over a period of 35 years, he has presented the 3-day course several hundred times to nearly 7000 maritime industry professionals from several hundred organisations world-wide. He is continuing to present the course 60 years after graduating from Webb Institute, anticipating that he will do so for a few more years.

Phil Helmore

Committee Meeting

The NSW Section Committee met on 11 February and, other than routine matters, discussed:

- SMIX Bash 2024: Sponsorships received and accounts paid, and a small has surplus resulted which will be shared with the IMarEST; proceeds of the raffle will be donated to the Sydney Heritage Fleet.
- SMIX Bash 2025: Booking for James Craig pencilled in for Thursday 4 December.
- TM Program 2025: All RINA meetings arranged, with two still to come from IMarEST (see Coming Events in this issue).
- Signatories to Bank Account: One additional signature has been arranged.
- Report on RINA Branch Meeting: Concerning changes from RINA HQ, including new Branch Handbook now live (despite no aligning with how the Australian Division and Sections are run), new RINA communications module, developing careers initiative, and best practice for sharing RINA events.
- NSW Section Committee: Several resignations, so we will be looking for new nominations

The next meeting of the NSW Section Committee was scheduled for 15 April.

Phil Helmore

Operating Marine Engines on Alternative Fuels

Manulal Inasu, Sales Manager Marine for MAN Energy Solutions Australia gave a presentation on Operating Marine Engines on Alternative Fuels to an in-person only meeting of RINA and IMarEST at Sydney Mechanics School of Arts on 2nd April.

The presentation outlined MAN Energy Solutions' vision for sustainable shipping, emphasising technical innovations, regulatory compliance, and economic feasibility in the shift towards a low-emission maritime industry.The presentation analysed future fuel solutions and decarbonisation strategies for MAN Energy Solutions' four-stroke marine engines. It aligned with global emissions regulations, including FuelEU Maritime and IMO targets, emphasising the company's roadmap for transitioning towards low-carbon and zero-carbon fuels.

Key topics included:

- Future Fuels & Emissions
- Regulatory Roadmap
- Technology & Performance
- Retrofit Options
- Decarbonization Strategies.

Rob Gehling (drawing from meeting notice)

News from the Tasmania Section

RINA Tasmania Section Christmas Party

The Tasmania Section held its annual Christmas function on the evening of Friday 15 November, comprising a Derwent River cruise on the beautifully restored and maintained Egeria,

followed by a meal at the Motor Yacht Club of Tasmania.

Richard Boult

Solar Boat Challenge Tasmania 2024

This year a different format was tried, separating the solar boat and car competitions, with the solar car challenge being held on Saturday 2 November 2024 at the Hobart City High School, and the Solar Boat Challenge being held on Monday 2 December at the Friends' Bell St Grounds. The Solar Boat Challenge was run on a weekday so that more schools could attend and this was successful, resulting in a greater field of competitors.

The day started off slightly overcast but the rain held off this year and solar gain increased throughout the day! Marc Iseli and the team of volunteers did a splendid job of getting through the primary and secondary competitors.

A highlight of the day was attendance by special guest Nick Golly, who is a naval architect from the Hobart Office of Artemis Marine. His story is inspirational in that some years ago he competed in the event held at Newtown High, followed by the National event before going on to study at AMC and training in Scotland. He then returned to Tassie. Nick brought along his original catamaran from the Newtown High competition.

The overall winner of the competition was won by Abel Harris, also winner of he 2023 event, who had had some of the design features explained by Nick, resulting in maximum waterline length and stability in the catamaran. He also ran hydrofoils and different combinations of propellers depending upon solar gain and power output. Some serious discussion was had with Abel regarding planning his hull.

Other award winners were Zane Sorell High (Best Engineered), Jonathan Coles (Most Innovative), Ashton Borzak-Bell (Primary Division) and Izzy Borzak-Bell (Secondary Division).

It was a privilege for the Tasmanian Section to be part of the challenge again in 2024.

Chris Davies

Overall Winner, Abel Harris with Nick Golly
(Photo courtesy Chris Davies)

Winner Most Innovative, Jonathan Coles
(Photo courtesy Chris Davies)

Dinner at the MYCT (L to R) Martin Renilson, Annie Wells, Chris Davies, Sussan Renilson, Andrew and Jennifer Ford, Geraldine Boult, Amanda and Nigel Winter, Richard Boult, Scott Blee, Alan Muir, Tim Oxley, Jack McLaren, Shayne Lindsay, Cate Chapman, John Polmear, Nipuna Rajapaksha and Paul Chapman

(Photo courtesy Richard Boult)

2025 Australian Wooden Boat Festival

The RINA Tasmanian Section participated in the 2025 Australian Wooden Boat Festival (AWBF), providing a focal point for marine industry and training providers. The display served as a networking hub, connecting naval architects, industry professionals, and prospective students with career and training opportunities. The aim was to reinforce industry connections and career pathways.

The display was made possible with support from Tas State Growth and an Advanced Manufacturing Grant, with assistance from Aust Div.

The key focus was to promote RINA as the professional body for naval architecture and marine engineering and to support those wishing to enter the profession by providing guidance on where to seek training. Promotional material was provided from AMC and UNSW, with staff from AMC Search to operate a portable ship simulator and engage with visitors.

Special thanks to SOSUB for providing one of their ROVs as a static display, which helped attract interest to the stand.

As part of its activities in promoting STEM careers the Tasmanian Section lobbied the AWBF organisers to include, for the first time, the Tasmanian Model Solar Challenge (Boats). This was held on parliament lawns. If the number of enthusiastic participants translates into graduates, then the profession should have a healthy future.

The event was very successful with many long standing and new colleagues visiting over the four days. Evening drinks provided an informal space for further networking.

The RINA Tasmanian Section appreciates the contributions of all volunteers and visitors who made this another successful event.

Michael O'Connor, Chris Davies, Nick Johnson and Richard Boult at RINA stand

(Photo courtesy Chris Davies)

Larger ships headed by Lady Nelson James Craig at Princes Wharf

(Photo courtesy Martin Renilson)

Andrew Ford (Director SOSUB) with Chris Davies

(Photo courtesy Chris Davies)

Hobart waterfront during Australian Wooden Boat Festival

(Photo courtesy Martin Renilson)

High-Speed Aluminium Craft: Modern Design Approaches

On 18th March Tasmania Section held a technical meeting featuring a presentation on this subject by Dougall Harris of Incat Crowther delivered to physical locations at the Swanson Building at AMC in Launceston and Taylor Bros Marine at Derwent Park in Hobart with live streaming available elsewhere.

From the information in the meeting notice this presentation explored the cutting-edge design processes employed by Incat Crowther in the creation of high-speed aluminium craft a cornerstone of the approach being the transformative power of 3D design and digital twin technologies.

Application of digital twin technology was explored, where a virtual replica of the vessel is created and used to aid in manufacturing, maintenance, and enhanced operational efficiency. Furthermore, a highlight was the crucial role of laser scanning in capturing the precise geometry of the final built vessel. This data allows rigorous verification against the original 3D digital twin, ensuring adherence to design specifications and identifying areas for potential refinement. Importantly this then enable seamless replication of subsequent builds with improved consistency and reduced

manufacturing errors.

The integration of these digital technologies was explored, revolutionizing the design and manufacturing processes at Incat Crowther, leading to faster development cycles, reduced costs, and ultimately, the creation of high-performance, reliable, and innovative high-speed aluminium craft.

Rob Gehling (based on meeting notice)

AMC Careers Fair

The AMC Careers fair was held on Wednesday the 19th of March. This was attended by over 60 organisations, most looking for AMC Graduates. It was very well attended, both with industry and students.

The RINA stand was manned by Alan Muir, Doupadi Mudiyanselage and Martin Renilson

A number of AMC students visited the stand, some enquiring about membership of RINA. This was also a good opportunity to raise our profile amongst the 60+ organisations represented at the Career fair.

Martin Renilson

Alan Muir, Doupadi Mudiyanselage and Martin Renilson at the stand

(Courtesy Martin Renilson)

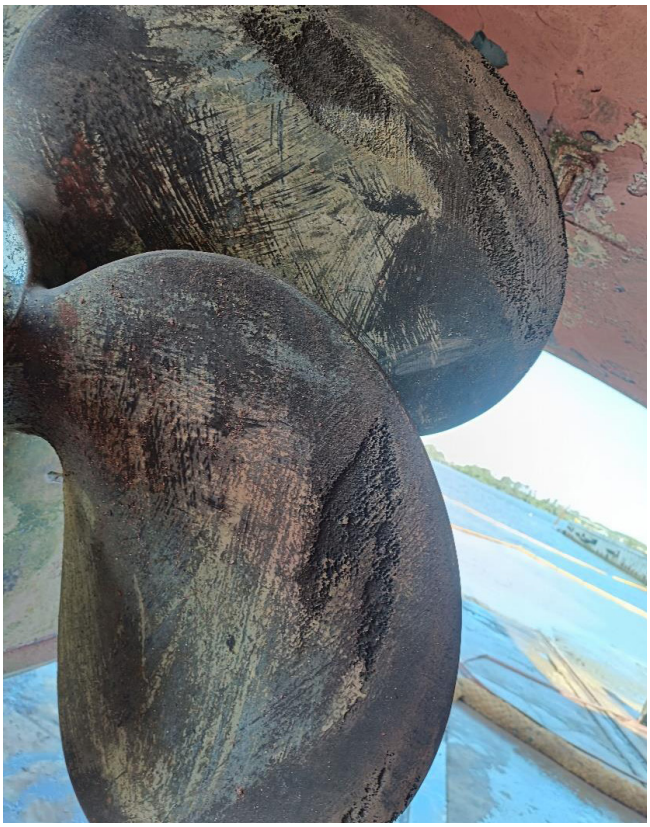
News from the Queensland Section

Marine Cathodic Protection

Wayne Burns, Principal, Anode Engineering gave a presentation on Marine Cathodic Protection—Are the Anodes Working? to a meeting in the Aus Ships Group Boardroom in Murarrie on 11 November 2024.

Wayne presented his experiences in marine cathodic protection and showed current case examples of corrosion. He went over the industry trends in anode materials and explained the best places to place anodes on the hull. He then went through his methods of real-time monitoring of corrosion on the vessels.

The presenter, Wayne Burns, has over 53 years of work experience in the corrosion industry. He began as a cadet metallurgist with ETRS doing all forms of NDT as well as mechanical testing. He later joined Wilson Walton International as a young corrosion engineer. Subsequently, with two partners, he purchased the WWI Australia company which grew to a staff of 30+ across three offices. This business was sold to Corrpro Inc. (USA) in 1998, and he then started Anode Engineering in 2000 as a family company operating from a Brisbane office servicing all of Australia and New Zealand.



An example of propeller corrosion due to electrolysis

(Photo courtesy Anode Engineering)

End-of-year Function

The Queensland Section held its End-of-year Function immediately following the technical presentation on 11 November. This was a low-key Christmas social function nearby the Aus Ships Group in Murrarie at Brew Dog from 7.15 pm. Share platters were provided, with drinks available for purchase from the bar.

Tom Ryan

The SARA: RoPax Ferry Docking and Refit- Lessons Learnt

On 11th March the Queensland Section in cooperation with IMarEST held a virtual technical meeting at which Oscar Tambun of Smit Lamnalco and Jalal Rafieshahraki of SeaTransport Pty Ltd presented on this subject.

The SARA is a 50m catamaran RoPax ferry owned by Rio Tinto operating in Weipa Bauxite mining region transporting personnel and heavy mining equipment. The vessel is managed by Smit Lamnalco Australia, it can accommodate 199 passengers, have 80m truck lanes and 4 car lanes on its deck. Having a bow and stern ramp with good manoeuvring abilities, The SARA is greatly helping the logistics of the large mining operation in Weipa. It is classed 1D and 2C under AMSA, was built and maintained under LR class and designed by SeaTransport Pty Ltd.

During the first 5 year periodic docking in Cairns, apart from the new coatings, new anodes, servicing the piping and valves and surveys, the vessel had some troubleshooting that is worthwhile to hear. The shafts, seawater cooling system and the bow thrusters had or developed some problems where

the presenters took the audience into the process of correctly identifying the cause and solving the problems. The vessel is now back full at service with much improved machinery system.

The lessons learnt in this process, from planning, identifying problems, engaging different suppliers, troubleshooting can help naval architects and marine engineers in designing and building better vessels.

The recording of the presentation is not yet available on the RINA YouTube channel.

Rob Gehling (based on meeting notice)

News from the SA&NT Section

Structural Integrity and Safety of Older Ships in a Seaway

Martin Renilson, Adjunct Prefessor, Australian Maritime College/University of Tasmania, gave a presentation on Structural Integrity and Safety of Older Ships in a Seaway to a meeting in the Engineering South Building at the University of Adelaide on 13 November 2024.

Older ships can suffer from corrosion which results in wastage of hull plating and stiffeners, hence reducing their strength, and increasing the possibility of failure when encountering severe waves. Maintenance is expensive, and the costs of "over maintaining" can be prohibitive. On the other hand, if corrosion in critical areas in the ship are not repaired in a timely manner, then the resulting failure caused by the stresses when operating in a seaway can be catastrophic. It is therefore important to understand how any corrosion influences the residual strength of the ship, and the consequent stresses in structural members as the ship encounters waves.

The presentation discussed how Smoothed Particle Hydrodynamics can be used together with Finite Element Analysis to study the stresses in the ship as it encounters waves. It is considered that this approach can lead to a reduction in maintenance costs and ensure that aging ships can be operated safely beyond their originally-planned lifetime.

The presentation was previously presented to the Tasmania Section on 14 May 2024 and is written up in the August 2024 issue of *The Australian Naval Architect*.

The presentation was not recorded.

The presenter Martin Renilson moved to Tasmania in 1983 to work at the Australian Maritime College, where he established the Ship Hydrodynamics Centre in 1985, and the Department of Naval Architecture and Ocean Engineering in 1996, with the first naval architecture and then ocean engineering degrees at AMC. In 2001 he moved to the UK to work at QinetiQ as Technical Manager, Maritime Platforms and Equipment. In this role he was responsible for all hydrodynamic research for the UK Ministry of Defence. In 2007 he returned to Australia where he now has a position as Adjunct Professor at AMC/UTas. He has recently been involved in a research project on the numerical modelling of ship response under corrosion, fatigue and complex sea-state environments which was funded by the Australian Research Council.

Andrew Harris

Naval Ship Technology – Ice Class Build Experience

SA/NT Section hosted a presentation on this subject by Philip Dovey Senior Surveyor at Lloyd's Register on 19th February at the University of Adelaide Engineering South building.

According to the meeting notice the presentation centred on more robust ships with stronger hulls that are needed for polar navigation to overcome the extra resistance that sea ice presents and to endure the effects of the numerous ice encounters that may emerge.

An ice-class ship needs more power to overcome the resistance when travelling through ice-infested seas because of its increased strength and the additional weight of its structure. Ice-going vessels typically require additional power compared to a regular vessel of comparable size that results in increased emissions of pollutants into the atmosphere, higher original shipbuilding costs, and higher operating expenses.

This presentation looked at one vessel in detail, RNZN Aotearoa, design to Polar Class PC6 (Summer/autumn operation in medium first-year ice which may include old ice inclusions with an ice thickness from 70 to 120 cm). It also looked at several of the technologies onboard to adapt to this requirement, the hull design and survival equipment. Another subject covered was the Polar Code and how it affects ship safety, as well as details with the certification.

Rob Gehling (based on meeting notice)

The Use of Wargaming as a Concept Analysis Tool and Aid to Requirement Development for Maritime Projects

This technical meeting was held at short notice on 12th March in conjunction with the University of Adelaide's Shipbuilding Hub for Integrated Engineering and Local Design (SHIELD) at the University's Engineering South lecture room. The presentation was not recorded.

Based on information in the meeting notice, the presentation covered the use of wargaming in maritime project definition, including some of the work University College London (UCL) has been doing with NATO on the use of wargaming as a concept analysis tool and aid to requirement development for maritime projects. This centres on "A Balanced Fleet" which is UCL's detailed warship design game, and "Cobalt Rocks", which is a game covering the protection of critical undersea infrastructure. It touched on some of the more specialist games that used to advise on and teach more niche subjects such as fleet operational awareness, simple submarine engagement modelling, and close quarter battle against fast boats and one way attack drones.

The presenter, David Manley, is the current MOD Professor of Naval Architecture at University College London, Course Director for the naval architecture MSc and the Submarine Design and Acquisition Course. He is MOD Deputy Technical Discipline Lead of Naval Architecture, Senior Fellow for Maritime Vulnerability Reduction, and Head of Specialism for Platform Survivability. In this role David supports the UK's maritime enterprise in ship and submarine survivability, with involvement and engagement in all naval ship, submarine, and weapon projects. His previous experience includes 30+ years working in UK naval safety and survivability, driving

the development of the UK's maritime survivability strategy, combat safety and naval mission modularity, as well as supporting survivability development through a wide range of international research groups and defence fora. David is a Fellow of RINA and a Constructor Captain in the Royal Corps of Naval Constructors.

Rob Gehling (based on meeting notice)

News from the WA Section

On 25th March WA Section joined with PIANC at The Shoe Bar, Yagan Square, Perth for a series of presentations on Reducing Australia's shipping emissions :Strategies for sustainable solutions.

Speakers were:

- Dr Michaela Dommisse, Managing Director – SOSHA on Overview of shipping emissions,evolving regulations, and Australia's challenges and opportunities in decarbonising its maritime industry;
- Craig Wilson, Chair, Ports Australia Sustainability Committee and Port of Brisbane, Head of Sustainability on The role and challenges of Australian Ports in facilitating the emissions reduction journey of the global shipping fleet;
- Max Van Someren, Founder NZN and Director BioVIS on A Naval Architect's Voyage into the World of Energy -Notes from the Other Side; and
- Matt McGellin, Lead Project Engineer & Naval Architect, Fortescue on Lessons from the Green Pioneer (Fortescue is a metals, energy and technology company with a mission to achieve real zero emissions by 2030. One such initiative is the Fortescue Green Pioneer, the worlds first ammonia powered vessel).

Rob Gehling (based on meeting notice)

The WA Section Annual General Meeting will be held on Wednesday 14th May at the Flying Angel Club, Fremantle, followed by a talk from Austal on their new dual-fuel high speed ferry for Denmark.

Jim Black

THE ROYAL INSTITUTION OF NAVAL ARCHITECTS

THE WALTER ATKINSON AWARD

PRIZE FOR THE BEST WRITTEN PAPER PRESENTED TO A RINA FORUM IN AUSTRALIA IN 2024–25

The Walter Atkinson Award was established in 1971 and its aim is to raise the standard of technical papers presented to the naval architecture / maritime engineering community in Australia.

The Award comprises an engraved trophy or medal, a certificate for each author and a ticket to the event at which the award is to be presented.

The Award will be presented by the President of the Australian Division (or their nominee).

A nomination must be of a written paper, not simply a presentation, first presented either at a RINA Section technical meeting or RINA-supported conference in Australia, or first published in a RINA-supported publication in Australia (eg. *The ANA*). Papers published in *The ANA* are automatically considered to have been nominated but other papers may only be nominated by a Section Committee.

All authors are eligible – Australian or overseas, members or non-members. Papers by multiple authors are eligible.

Visual presentations are not eligible unless they reflect the content of the presenter's written paper. Nominations of papers published in the period 1 July 2024–30 June 2025 must be received by the Secretary no later than 25 July 2025.

For further information refer to the Division's Walter Atkinson Award page on the RINA web-site or contact the Secretary ((m) PO Box 462, Jamison Centre, ACT 2614, (e) rinaaustraliandivision@gmail.com, (p) 0403 221 631)

Classification Society News

ABS Update to Offshore Rules

ABS has introduced new Rules for Building and Classing Offshore Units (Offshore Rules) which bring multiple rule sets into a single, unified document with risk-based approaches for verifying new technologies along with easier navigation to support clients. The forward-looking initiative is part of a multi-year collaboration with industry, shipyards, owners, equipment manufacturers, designers and regulators to support today's fast-moving technology advancements and innovations driven by digitalization and decarbonization.

ABS has consolidated its existing rule sets, including those for mobile offshore units and floating installations, into one easily-accessible publication featuring a new format with enhanced graphics for increased clarity, expanded search capabilities, and greater transparency regarding mandatory and optional notations.

"This is a major step forward in simplifying how our clients and the industry at large navigate ABS rules, allowing any combination of service function and structure type, all under one unified framework. ABS is committed to ensuring that the offshore industry has the most comprehensive, clear, efficient and up-to-date framework for the design, construction, operation and decommissioning of offshore units and assets," said Dan Cronin, ABS Vice President, Class Standards.

These updates follow enhancements made to ABS Marine Vessel Rules in January 2024 and in 2023 where ABS launched industry's only Custom Rule Book application, a powerful new tool which allows users to instantly create tailored rules sets for their specific vessel or project.

ABS Offshore Rules, available at https://pub-rm20.apps.eagle.org/r/Offshore-Rules-OR took effect on 1 January 2025. To support a smooth transition, ABS is allowing a year of grace specifically for users of the current Floating Production Installation and Facilities Rules, where those clients can choose to continue classing their assets under current ABS Rules or transition to the new ABS Offshore Rules. For more information or to ask questions, contact your local ABS office.

ABS News, 2 December 2024

DNV Notations for Autonomous and Remotely Operated Ships

DNV has launched a new family of class notations, Autonomous and Remotely Operated Ships (AROS), providing a framework for how auto-remote vessels can achieve equivalent or higher safety compared to conventional vessels.

Autonomous shipping, ranging from remote-control operation to fully-unmanned vessels, marks a major advancement in the maritime industry. These solutions can deliver a wide range of benefits including improved safety, optimised logistics chains, improved cargo capacity due to reductions in crew, increased fuel efficiency, reduced emissions, and reduced operational and maintenance costs.

While these advancements hold great promise, regulatory frameworks are still being developed. The International Maritime Organization (IMO) is developing a code for Maritime Autonomous Surface Ships (MASS), expected to be voluntary from 2025. However, this will not be mandatory until 2032, driving the need for a developmental framework for related technologies. DNV's AROS notations provide the industry with the necessary structure for the future development of autonomous shipping technologies, in close cooperation with the flag and coastal states which hold ultimate approval responsibility.

> "Autonomous shipping, in all its formats, is a key part of the future development of shipping," says Geir Dugstad, Technical Director Classification, at DNV Maritime. "With the AROS notations, we will see novel autonomous and remotely-controlled pilot projects achieving at least the same safety levels as conventional vessels. When the technology from these pilots becomes available for seafarers, features such as collision and grounding avoidance, vessel lookup support, and remote machinery support can help improve safety and reliability."

The AROS family of class notations covers four specific functions for autonomous ships—navigation, engineering, operational, and safety—and will also be distinguished by category (remote control, decision support, supervised autonomy, full autonomy) and location of ship control (onboard, off-ship, or hybrid). These definitions are in line with the current plans for IMO's upcoming MASS code.

The notations incorporate and build on DNV guideline (DNV-CG-0264) for autonomous vessels, combining the guideline's broad risk-assessment processes for the qualification of autonomous and remotely-operated marine technologies with a set of functional requirements. This approach is deliberately flexible in nature, creating the space for future innovation, while also drawing on DNV's experience with industry partners in project development within the autonomous shipping space over the past decade.

> Dugstad added "This is still early days for autonomous and remotely-operated ships. Advances in research, technology, and legislation, as well as experience from projects, is expected to lead to significant developments in autonomous shipping technology in the future. DNV's guidelines and AROS class notations were designed to remain in step with these developments and will mature as autonomous technologies evolve."

The notation was launched in December and has been available since 1 January 2025.

For more information on the new notations visit www.dnv.com/rules-standards/

DNV News; 15 January 2025

LR OneOcean Launches Risk Manager FuelEU

Lloyd's Register OneOcean (LR OneOcean) has launched Risk Manager FuelEU, an innovative module designed to enable ship managers, owners, operators, and charterers to seamlessly manage their FuelEU compliance and strategy within a single platform.

CALL FOR ABSTRACTS NOW LIVE

IMC INTERNATIONAL MARITIME CONFERENCE 2025

4–6 NOVEMBER
INTERNATIONAL CONVENTION CENTRE
SYDNEY, AUSTRALIA

INTERNATIONAL MARITIME CONFERENCE IS BACK FOR 2025!

IMC International Maritime Conference, organised by The Royal Institution of Naval Architects, The Institute of Marine Engineering, Science and Technology and Engineers Australia allows delegates to be involved in discussions concerning the latest developments in naval architecture, marine engineering and maritime technology; both in the areas of defence and commercial shipping.

The conference coincides with the prestigious Royal Australian Navy Sea Power Conference and the Indo Pacific International Maritime Exposition which is organised by AMDA Foundation Limited.

KEY DATES

EVENT	DATE
Call for Abstracts	Wednesday 22 January 2025
Abstract Submission Deadline	Monday 28 April 2025
Author Acceptance Notification	Friday 16 May 2025
Refereed Paper Submission	Monday 11 August 2025
Full Paper Submission Date	Monday 13 October 2025

INDO PACIFIC
INTERNATIONAL MARITIME EXPOSITION

IMC 2025 is held in conjunction with Indo Pacific 2025
For more infomation: **www.indopacificexpo.com.au/IMC2025**
Contact the IMC Secretariat: **imc@amda.com.au**

SCAN FOR
MORE INFO

The Risk Manager FuelEU module, alongside Risk Manager's existing EU ETS module, allows users to simulate, plan, and monitor their compliance with the EU's FuelEU Maritime Regulation and EU ETS requirements.

By integrating these capabilities, Risk Manager offers a comprehensive solution to emissions management, saving users' time, reducing costs, and helping them avoid financial penalties for non-compliance.

The launch of Risk Manager FuelEU coincides with the start of the EU's FuelEU Maritime Regulation, which requires vessels over 5000 GT trading in the EU and European Economic Area to meet greenhouse gas (GHG) intensity reduction targets. Risk Manager FuelEU simplifies this complex compliance process, connecting stakeholders for easy management of FuelEU exposure from start to finish.

Risk Manager FuelEU brings together in-house ship models, multi-objective route optimisation, and high-quality weather forecast data to help users simulate future exposure and implement robust emissions strategies.

The new module actively manages and optimises the GHG intensity and compliance balance of vessels by simulating and monitoring fuel types and consumption. Users can make informed decisions about fuel choices, enabling them to holistically manage their FuelEU strategy while optimising the commercial outcome of voyages. Automatic import of Noon Reports to provide real-time emissions data and exposure profiles is also available through the Risk Manager software.

Risk Manager is integrated with LR tools such as LR Emissions Verifier, providing easy access to voyage validation statements, while tiered user permissions allow expanded access for users across the business based on company needs.

Barry Hooper, Vice President of Product and Technology, LR OneOcean, said "With its unique approach, wide breadth of functionality, and engaging user experience, Risk Manager FuelEU provides the industry with a complete toolset to actively manage the impacts of FuelEU regulations from start to finish.

"This, combined with Risk Manager's EU ETS module, provides the industry with the complete solution for emissions management under the European Unions 'Fit for 55' legislation, making LR OneOcean and LR the industry's emissions management partner of choice."

LR News, 15 January 2025

(FuelEU appears to be an optimisation program – the name presumably means Fuel Energy Utilisation - Ed)

Wind-assisted propulsion system in a nutshell

Wind-assisted propulsion system (WAPS) technologies have gained significant attention in the shipping industry as a means of reducing fuel consumption and emissions. These technologies harness the power of wind to supplement the propulsion of a vessel by generation of aerodynamic forces. They have the potential to significantly improve the efficiency of shipping operations and make a meaningful contribution to the decarbonization of the industry, as wind is an inexhaustible, free, zero-carbon energy source.

Several different sailing technology concepts have been or are being developed, including rigid or soft wing sails, Flettner rotors and ventilated foils, or kites. Most modern systems now utilize state-of-the-art intelligent control and automation systems to operate in a safe manner and without the requirement for additional crew. A combination of advanced aerodynamics, automation, computer modelling and modern materials is unlocking a new generation of innovative sail systems for ocean-going ships.

WAPS have already delivered fuel savings of between 4.5% and 9%, according to vessel owners and operators, and have the potential to achieve savings of 25% if installed as a retrofit. The margins are potentially higher if newbuilds are particularly designed to carry sail systems.

In the energy efficiency indices, WAPS is categorized as an "energy harvesting" technology, due to its physical principles of utilizing wind to directly provide additional thrust. Uncertainties in operational cost remain with the weather, but the advantages of sailing can be enhanced with weather routing algorithms to generate optimal routes for individual vessels. There are also several challenges to the widespread adoption of WAPS, such as the need for reliable and efficient technologies that can operate in a variety of conditions.

DNV News

New global team of 150 experts will help the sector navigate decarbonisation and digitalisation challenges

This week, at Singapore Maritime Week, Lloyd's Register (LR) will unveil its newly structured LR Advisory service, designed to help address escalating regulatory demands, rising decarbonisation costs, and the increasing influence of digitalisation.

The move sees LR consolidate its Technical Advisory and Business Advisory divisions into a single, integrated LR Advisory team reflecting its broader transformation from a classification society to a maritime professional services organisation.

The launch of LR Advisory marks a pivotal shift. No longer just a compliance support service, LR Advisory now offers shipowners, charterers, and financiers comprehensive guidance on regulatory adaptation, energy efficiency, and operational performance. The new service extends beyond traditional class clients, providing strategic support to alternative fuel suppliers, port authorities, and governments looking to future-proof their maritime strategies.

James Frew, LR Advisory Director, said "Shipping is facing an unprecedented transformation. Historically, the industry has been reactive, but the scale and complexity of today's challenges—from fuel transition strategies to digital performance optimisation—demands a proactive, strategic approach. "It's about fundamentally rethinking how ships are designed, built, and operated. This involves embracing new technologies, exploring alternative fuels, and optimising performance to reduce environmental impact and improve profitability. We are now proactively shaping the future, rather than simply reacting to it."

Lloyd's Register 24 March 2025

Printing the future: Could additive manufacturing revolutionise shipbuilding?

Additive manufacturing has the potential to reshape the very foundations of maritime engineering, offering a sustainable path to lighter, fuel-efficient vessels, supporting the industry's need to decarbonise.

Additive manufacturing (AM), often referred to as 3D printing, could transform the landscape of shipbuilding and maritime operations with the potential to redefine production processes, reduce environmental impact, and enhance supply chain resilience. LR has been at the forefront of certifying this technology for a number of years, combining its extensive technical and regulatory expertise with the industry's need for innovative solutions.

Unlike traditional manufacturing methods, which typically involve subtractive processes – where the material is removed and shaped into parts – AM builds components from the ground up layer by layer, based on digital design blueprints. This technology allows for tailored designs and minimises waste by using only the material required for each part. While AM has been well established in sectors like aerospace and automotive, it is relatively new in maritime, where traditional practices and regulatory challenges have slowed its adoption.

Decarbonisation in maritime is not just about alternative fuels or energy-saving technologies; it also extends to the materials and processes used throughout a vessel's lifecycle – these are factored into a company's Scope 3 emissions (a reporting requirement for European companies from next year).

This is where the potential of AM becomes transformative. By enabling the production of lighter components through processes like topology optimisation – where the material layout is optimised to maximise performance – AM could potentially reduce a vessel's overall weight, leading to improved fuel efficiency.

Another environmental benefit of AM is the potential for on-demand, localised production. By digitally sending blueprints and producing parts closer to their point of use, shipping costs and related emissions are reduced. "Printing a part at a port facility, rather than shipping it from a centralised factory, has clear sustainability benefits," notes Adam Saxty, LR's Lead Additive Manufacturing Technologist. This localisation is especially relevant in regions with limited access to traditional manufacturing supply chains, such as remote ports or offshore installations.

AM technology can also manage obsolescence by reverse-engineering outdated parts, reducing the need for high-inventory storage and improving the overall supply chain resilience."

LR's guidance documents cover multiple aspects of AM, from material specifications to performance testing. LR collaborates closely with both established manufacturers and AM specialists, acting as a bridge between traditional maritime production and innovative, AM-based techniques.

Adopting AM on a larger scale in maritime is not without its challenges. The industry needs to address a number of hurdles, including upscaling AM processes to meet the size and durability requirements of maritime components and aligning production with marine safety standards. Additionally, LR and other stakeholders are working to standardise AM certification processes, especially for large-scale components like propellers or other structural ship features.

As Saxty explains, AM's benefits go beyond environmental impact, supporting the digitalisation of manufacturing, reducing lead times, and potentially cutting costs in the long term. "In the next five to ten years, I see AM establishing itself as an alternative manufacturing approach in certain maritime segments, especially in regions or sectors where traditional supply chains are less established," he predicts.

Lloyd's Register December 2024

Bureau Veritas Joins LOWNOISER Project to Advance Underwater Noise Reduction in Shipping

Bureau Veritas Marine & Offshore (BV) is participating in the LOWNOISER project, a European Union-funded initiative aimed at reducing underwater radiated noise (URN) from ships and protecting marine ecosystems. Bringing its expertise in ship performance analysis, regulatory development, and stakeholder engagement, BV is working alongside industry and research partners to explore innovative solutions that minimize the impact of maritime noise pollution.

With €6.3 million in EU funding, the four-year LOWNOISER project unites 15 international partners to develop and test new noise-reduction technologies, establish regulatory frameworks, and promote industry best practices. Underwater noise generated by ships can interfere with marine species that rely on sound for navigation, communication, and survival. In response, the European Commission's Marine Strategy Framework Directive has set clear objectives to limit biologically harmful noise levels in marine habitats.

Since the project's inception, BV has been contributing its expertise in ship energy modelling, safety assessment, regulatory development, and stakeholder engagement through its active involvement in a number of work packages. This includes using its Ship Energy Efficiency Calculation and Analysis Tool (SEECAT) to model ship energy efficiency and GHG emissions, conducting safety assessments to ensure noise-reduction technologies align with vessel performance, developing regulatory guidelines in line with IMO URN regulations, and engaging stakeholders to promote knowledge sharing and disseminate project findings across the maritime industry.

For more than a decade, BV has been actively engaged in URN-related research and regulatory efforts, contributing to discussions at the International Maritime Organization (IMO) and International Association of Classification Societies (IACS) on URN harmonization. Through its involvement in multiple key R&D projects, including AQUO, PIAQUO, and SATURN, BV has worked closely with industry and academic partners to advance noise-mitigation strategies. These collaborations have brought together key stakeholders, including long-standing partners TSI, UPC, and Kongsberg Maritime. Building on BV's extensive experience, the LOWNOISER project represents a step toward translating research into practical solutions for the industry.

Bureau Veritas 19 March 2025

Bureau Veritas Grants AiP to University of Queensland for "SeaFisher" Offshore Fish Pen

Bureau Veritas Marine & Offshore, a global leader in testing, inspection, and certification, has delivered an Approval in Principle (AiP) to The University of Queensland for its novel "SeaFisher" offshore fish pen, funded by Blue Economy Cooperative Research Centre (CRC).

The SeaFisher is designed to enable cost-effective, robust fish farming in deeper ocean areas, addressing the growing global demand for seafood. Its modular cubic pen design is constructed with a durable High-Density Polyethylene (HDPE) frame, forming a 2 × n array. This material allows flexibility and resilience in harsh marine environments, while specially designed connection brackets and pods securely assemble the structure.

The SeaFisher incorporates features to optimize its performance. A single-point mooring system minimises environmental impact and collision loads while enhancing waste dispersal. Ballast tubes on the structure's top surface allow it to submerge to specific depths, enabling the pen to avoid strong surface waves during severe weather conditions.

Bureau Veritas Marine & Offshore conducted a design review for the issuance of an AiP Certificate of the SeaFisher, based on its NR 387 Rules for the Classification of Fish Farms and other applicable rules and regulations.

This design enables fish farms to meet the rising global demand for seafood while ensuring affordability and sustainability.

The SeaFisher project is funded by the Blue Economy CRC, led by University of Queensland in collaboration with industry and research partners Huon Aquaculture, National University of Singapore, Tassal Group, Technology Centre for Offshore and Marine, Singapore (TCOMS), Maccaferri Corporate, Griffith University and University of Tasmania. Blue Economy CRC is established and supported under the Australian Government's CRC Program to undertake industry focused research and training to support the growth of the Blue Economy with a focus on two new, emerging, and transitioning ocean industries for Australia: offshore aquaculture and renewable energy production.

Bureau Veritas 3 February 2025

EODev Receives Type Approval Certificate from Bureau Veritas for its REXH2® Marine Fuel Cell System

Energy Observer Developments (EODev) has received the Type Approval Certificate (TAC) from Bureau Veritas Marine & Offshore (BV) for its REXH2® hydrogen fuel cell system.

Building on Toyota's advanced PEM fuel cell technology, the REXH2® is a scalable, "plug & play" power solution designed to meet the most stringent safety and performance standards required by the maritime industry, while reducing reliance on fossil fuels. This certification makes EODev one of only three companies worldwide to receive such certification, and it cements the REXH2® as a viable, reliable, and safe alternative for clean energy onboard ships.

Yann Darmaillac, Technical Director at EODev, said "The Type Approval Certificate represents a significant step toward making hydrogen a cornerstone of maritime decarbonization. It validates the reliability and safety of the REXH2® system while opening new opportunities for its deployment across a broader range of vessel types."

EODev's fuel cell technology has already been integrated into innovative maritime projects, including the Bluegame Hydrogen Support Vessels (HSV) for the America's Cup teams Orient Express Racing and American Magic, as well as the recently launched training vessel Alba in Corsica.

The REXH2® represents the culmination of years of collaboration between EODev and Toyota, combined with BV's technical expertise and safety validation.

Bureau Veritas Marine & Offshore is committed to supporting the safe integration of hydrogen technologies in the maritime industry. The Type Approval Certificate for EODev's REXH2® system is a testament to the growing maturity of hydrogen solutions and their potential to transform shipping.

Thiebault Paquet, Vice President R&D and Head of Toyota Hydrogen Factory Europe, added "This certification validates the adaptability and reliability of Toyota's fuel cell technology in marine applications, demonstrating the potential of hydrogen to revolutionize clean energy solutions across industries"

The first project leveraging the certified REXH2® system is PROMETEO, a 24-meter passenger vessel developed by Green Navy. Scheduled for deployment in Brittany, this innovative ship will carry 200 passengers with zero emissions, offering a sustainable and scalable solution for regional maritime transport.

Bureau Veritas 30 January 2025

ACKNOWLEDGEMENT

The Australian Division of the Royal Institution of Naval Architects gratefully acknowledges the generous support of the AMDA Foundation Limited for the conduct of the International Maritime Conferences organised by RINA, the Institute of Marine Engineering, Science and Technology and Engineers Australia in conjunction with AMDA's Indo Pacific Maritime Expositions.

Without such support the International Maritime Conferences and the publication of *The Australian Naval Architect* would not be possible.

From The Crows Nest

Order of Australia Honours

While also noted in the vale column, RINA Australian Division acknowledges the award of the Medal of the Order of Australia (OAM) to Phil Helmore on Australia Day this year for service to naval architecture.

Including Phil, the ANA is aware of the following RINA members, past and present, who have been awarded Order of Australia Honours. We take this opportunity to once again acknowledge these honours:

Fred Ellis AM	In the Queen's Birthday honours list of June 1990 Fred was made a Member of the Order of Australia (AM) in recognition of service to Marine Engineering and to Naval Architecture.
Alan Payne AM	In the Queen's Birthday honours list of June 1993 Alan was made a Member of the Order of Australia (AM) for service to naval architecture as a designer of racing and cruising yachts.
Alan Mitchell OAM	In the Australia Day honours list of 1998 Alan was awarded the Medal of the Order of Australia (OAM) for service to the profession of Naval Architecture through the Australian Division of the Royal Institution of Naval Architects.
Alan Taylor OAM	In the Queen's Birthday honours list of June 2002 Alan was awarded the Medal of the Order of Australia (OAM) for service to maritime engineering, and the protection of the marine environment.
Bob Herd OAM	In the Queen's Birthday honours list of June 2003 Bob was awarded the Medal of the Order of Australia (OAM) for service to naval architecture and ship safety, and to the community through the 'Polly Woodside' Maritime Museum.
Ian Williams AM	In the Queen's Birthday honours list of June 2006 Ian was made a Member of the Order of Australia (AM) for service to transport through contributions to the improvement of international maritime safety, and to professional organisations.
Don Gilles AM	In the Australia Day honours list of 2010 Don was made a Member of the Order of Australia (AM) for service to marine engineering and naval architecture, particularly through education and the development of professional standards, and to the community.
John Jeremy AM	In the Australia Day honours list of 2015 John was made a Member of the Order of Australia (AM) for significant service to the preservation and celebration of naval and maritime history.
Gordon MacDonald OAM	In the Queen's Birthday honours list of June 2022, Gordon was awarded the Medal of the Order of Australia (OAM) for service to naval architecture.
Rob Gehling AO	In the Australia Day honours list of 2023 Rob was made an Officer of the Order of Australia (AO) for distinguished service to the maritime transport and safety industries, and to naval architecture.
Len Randell OAM	In the King's Birthday honours list of 2024 Len was awarded the Medal of the Order of Australia (OAM) for service to sailing, and to naval architecture.
Phil Helmore OAM	In the Australia Day honours list of 2025 Phil was awarded the Medal of the Order of Australia (OAM) for service to naval architecture.

Bluebottle USVs BB 712 and BB Tahi Christened

The official christening of the first two grey bluebottle (or 'greybottle' in view of their colour) uncrewed surface vessels (USV). BB 712 and BB Tahi, took place at Ocius Technology's UNSW Randwick Campus site on 26 November 2024.

These are the first of Ocius Technology's larger Beth 2.0 class vessels, designed by One2three Naval Architects, which are about 6% larger than the original Beth-class vessels, with more capability ad longer endurance. BB Tahi is the first of two bluebottles recently bought by the Royal New Zealand Navy, and BB712 is the first Royal Australian Navy grey vessel, with the bluebottles being recently approved as official Navy Registered Vessels.

The attendees were welcomed by the new Chair of Ocius Technologies, Andrew Aitken, replacing long-time Chair, Mark Bethwaite. Robert Dane, Chief Executive Officer of Ocius, then gave a summary of the development of the bluebottle USVs, some of their achievements, and some of the new orders which have been placed. Apart from the capabilities of the vessels, a big selling point is the fact that they can be launched from a launching ramp anywhere, something which isn't always possible with USV's, many of which require cranage for launching.

The vessels were christened by:

BB 712 Commodore Mick Turner CSM and Bar, Director General Maritime Integrated Capablity (MIC) Branch, Royal Australian Navy

BB Tahi Commodore Shane Arndell, Maritime Component

Commander, Royal New Zealand Navy

The traditional ceremony was changed slightly in the naming: I name this vessel [BB 712 or BB Tahi]; may God bless her and all those who don't sail in her!, and the champagne was poured over the bows to avoid damage to the sleek composite hulls from broken bottles.

Those gathered for the ceremony included Ocius board members, shareholders, staff, personnel from both navies and UNSW, partners, and many friends. Preceding—and following—the christening ceremony, there were the traditional drinks (champagne, red and white wines, orange juice and mineral water) and wood-fired pizzas, sandwiches, muffins and a cheese board under the fig tree.

BB 712 and BB Tahi and some of the crowd under the fig tree (note the red kangaroo and black kiwi logos on the respective hulls) (Photo Phil Helmore)

Andrew Aitken, Chair of Ocius Technologies, welcoming the attendees with other speakers Robert Dane (Ocius), CDRE Shane Amdell and CDRE Mick Turner (Photo Phil Helmore)

More of the crowd under the fig tree (Photo Phil Helmore)

Unfortunately, Ocius has outgrown the space available at the UNSW Randwick Campus site and so, over the Christmas break, moved to new larger premises at 190 Bourke Rd, Alexandria.

Phil Helmore

WSR Bluebird K7

Donald Campbell's Bluebird K7 hydroplane was destroyed in 1967 when Campbell crashed in the Lake District as he attempted to push his own water speed record past 300 mph (480 km/h).

Having been recovered from the bottom of Coniston Water 34 years later, it was rebuilt by a team of engineers on Tyneside.

After a long-running ownership row, it was handed over to the Ruskin Museum, and now it is intended that Australian Dave Warby, son of the late water speed world-record holder Ken Warby, will be in the cockpit when it returns to the lake in 2026.

Mr Warby, a current world water speed record challenger, described it as a "tremendous honour". Calling Bluebird "the most iconic water speed record boat in the world", he said that its exploits with Campbell at the controls had been the "inspiration" for his father to set his own world records in 1977 and 1978. His latter mark of 317 mph (511 km/h) still stands. There is a BBC interview with Mr Warby shown at:

https://youtu.be/bz53S8hHTG8?si=C1e0XqU-ylvxfsu3

Mr Warby's reserve will be RAF Flight Lieutenant David-John Gibbs, from Grantham, Lincolnshire, who is the designated pilot for the Longbow speed record attempt being led by Dave Aldred. Two Orpheus jet engines are to be refurbished as part of the plans to have Bluebird K7 running again.

Setting seven world water speed records between 1955 and 1964, it was last on water in 2018 at Loch Fad, on Scotland's Isle of Bute, following a restoration led by North Shields engineer, Bill Smith.

A legal row then ensued after Mr Smith claimed part-ownership due to the work he and his Bluebird Project (BBP) team had carried out. In the settlement agreed in January, when he relinquished his claim, Mr Smith paid £25,000 towards the Ruskin Museum's legal costs. It was also agreed he would have no "further right, title or interest" in the craft.

However, since then the Bluebird Project's social media account has repeatedly called for the museum to put aside those terms and enlist the group's volunteers to help with maintenance and any future running.

BBC News, 22 November 2024

WSR Spirit of Australia 2

On 8 October 1978, over 46 years ago, Ken Warby set his second (and still current) Unlimited World Water Speed Record of 317.6 mph (511.1 km/h) with Spirit of Australia

The restored Bluebird K7 running on Loch Fad, Isle of Bute, on 9 August 2028 prior to handover to the Ruskin Museum (Photo courtesy the Bluebird Project)

on Blowering Dam in NSW.

Ken's son, Dave Warby, and the Warby Motorsport team are attempting to break this record with the current Spirit of Australia 2.

Remaining away from Blowering Dam during the summer months while fishers and recreational boaters use the lake for their various pursuits, the team returned for further trials on the weekend of 22-23 March 2025. The dam was only at about 30% of capacity, which limited the area which could be used for trial runs. None the less, David Warby was still able to test out his latest rudder geometry on Spirit of Australia 2 as the team seeks to find a rudder that has the desired handling characteristics and response as trial speeds are increased. He managed to achieve runs at up to 220mph.

The team now looking forward to returning when there are higher water levels in the dam.

SoA2 passes an exposed area of the dam near The Pines campground that is usually deeply submerged.
(Photo from Warby Motorsport Facebook page)

Phil Helmore

Martin Grimm

WSR Longbow

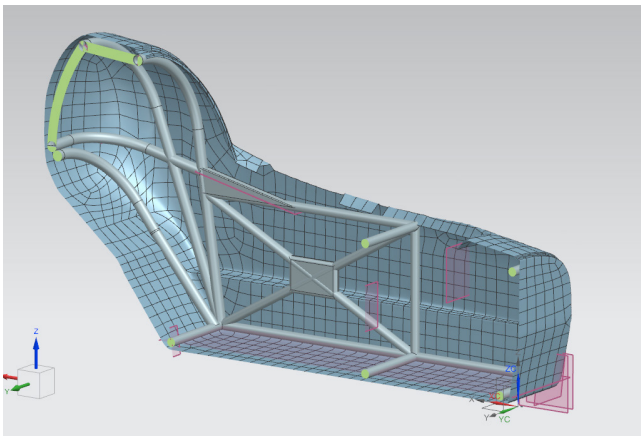
One of Britain current contenders for the Water Speed Record, Longbow, commenced construction in April 2018.

Physical progress on the boat remains held up by the design of the driver's cockpit which must meet the requirements of the UIM Cockpit Safety Committee. The team have decided to have the cockpit/capsule detach from the hull in the event of an accident, and the calculations involved with that scenario have been undertaken to ensure that the driver's capsule is able to withstand those loads and remain intact and floating on the water surface. Elements such as steering, fuel tanks and air intakes for Longbow's engines are all built around her cockpit, and so all they can do is keep the build on hold until the critical design of the cockpit is agreed with the UIM.

Their design engineer has been spending all of his time getting into the finer details of the driver cockpit design. For example, ensuring that the loadings on the pilot harness mounts in that cockpit are within limits in the event of a crash. For the capsule itself it is impossible to predict where the peak loadings will be in all the permutations of any and all crash scenarios that could occur. Accordingly, he has had to design the cockpit to withstand those peak loadings, not just in specific areas, but everywhere.

Whilst their design engineer concentrates on the outer composite shell analysis, he has meanwhile provided the team with a provisional layout for the tubular steel cage that he has designed for the driver to sit within.

SoA2 launching site showing low water levels in December 2024
(Photo from Warby Motorsport Facebook page)



View of provisional cockpit cage for Longbow
(Image from Longbow website)

For further details, see https://www.jet-hydroplane.uk/.

Longbow News, November and December 2024

SP80 Aims for World Sailing Speed Record

The world sailing speed record is currently held by Australian Paul Larsen in Vestas Sailrocket 2 at an average speed of 65.45 kn (121.1 km/h) over a 500 m distance.

SP80 is the vessel being designed and built by engineering students from the Swiss engineering school École Polytechnique Fédérale de Lausanne (EPFL) to attempt to achieve an new world sailing speed record and take it back to Europe. They are aiming for a speed of 80 kn (148 km/h) using a boat with shaped hulls, propelled by the usual kite wing, while the overall stability is achieved via a super-ventilating hydrofoil.

The team were aware of a structural issue and so, after reaching a speed of 43 kn (80 km/h) in October 2024, they decided to carry out a load test for higher speeds. Back in the workshop they fixed the boat to the ground and pulled (very hard) on it: on one side at the foil, on the other simulating the pull of the kite. During these tests, the team was on constant alert, watching out for the slightest suspicious creak and filming

the most sensitive areas. They then put the boat through an ultrasonic inspection to ensure that no internal cracks had formed in any parts, and none were found.

They also took advantage of having the boat back in the workshop to fit a new appendage: their unique superventilating foil, specifically optimised for high speed. Unsurprisingly, this optimisation for higher speed has one drawback: it penalises the boat at low speed. The additional drag makes it harder for the boat to plane. After a meticulous fitting phase, the foil was installed on the boat and everything was ready for testing on the water.

Back at Leucate, France, the winds were fickle in November, and it wasn't until December that they could test the performance of the new foil. However, they now have the data which they need, and they will be modifying the shape of the floats to make it easier to plane from low speeds, and they are busy doing that now.

For more details, visit the SP80 website at https://sp80.ch/.

SP80 Newslettter 44, December 2024

Sail GP

The Australia SailGP Team has now won the coveted SailGP Trophy three times, winning it in Seasons 1, 2 and 3, and came second to Spain in the most-recent Series 4.

SailGP continues to expand with competing teams now representing Australia, Brazil, Canada, Denmark, France, Germany, Italy, New Zealand, Spain, Switzerland, United Kingdom and the USA.

Season 5 started in Dubai, UAE, on 23–24 November 2024, and featured new events in Brazil, Germany, Switzerland and Auckland, as well as a return to Great Britain and New York. Unfolding over a 12-month period, this season will be the league's most expansive to date, with 14 events planned across an increased five continents.

Events so far this season have been:

23–24 Nov 2024	Dubai, UAE
18–19 Jan 2025	Auckland, NZ
8–9 Feb	Sydney, Australia
15–16 Mar	Los Angeles, USA
22–23 Mar	San Francisco, USA

Unfortunately the Australian Sail GP team suffered a wing sail collapse in Race 7 of Round 5 in San Francisco(see https://www.youtube.com/watch?v=w5yO8BKy81Q) so despite having been in 3rd place in fleet racing, they were unable to compete in the event final, with Spain taking first place in that round.

The leaderboard currently has Australia in first place with 39 points, Emirates GBR in second place with 38 points, Spain in third place with 36 points and New Zealand in fourth place with 35 points.

Subsequent events will be held in:

3–4 May	Rio de Janeiro, Brazil
7–8 Jun	New York, USA
19–20 Jul	Portsmouth, Great Britain
16–17 Aug	Sassnitz, Germany
6–7 Sep	Taranto, Italy
12-13 Sep	Saint-Tropez, France
20–21 Sep	Geneva, Switzerland
4–5 Oct	Cadiz, Spain
7–8 Nov	Middle East
29–30 Nov	Abu Dhabi, UAE

It is noteworthy that the highest speed recorded in any event this season has been 52 knots achieved by the Australian team during the Sydney round in February where they finally placed third.

For all the details, visit the Sail GP website at https://sailgp.com.

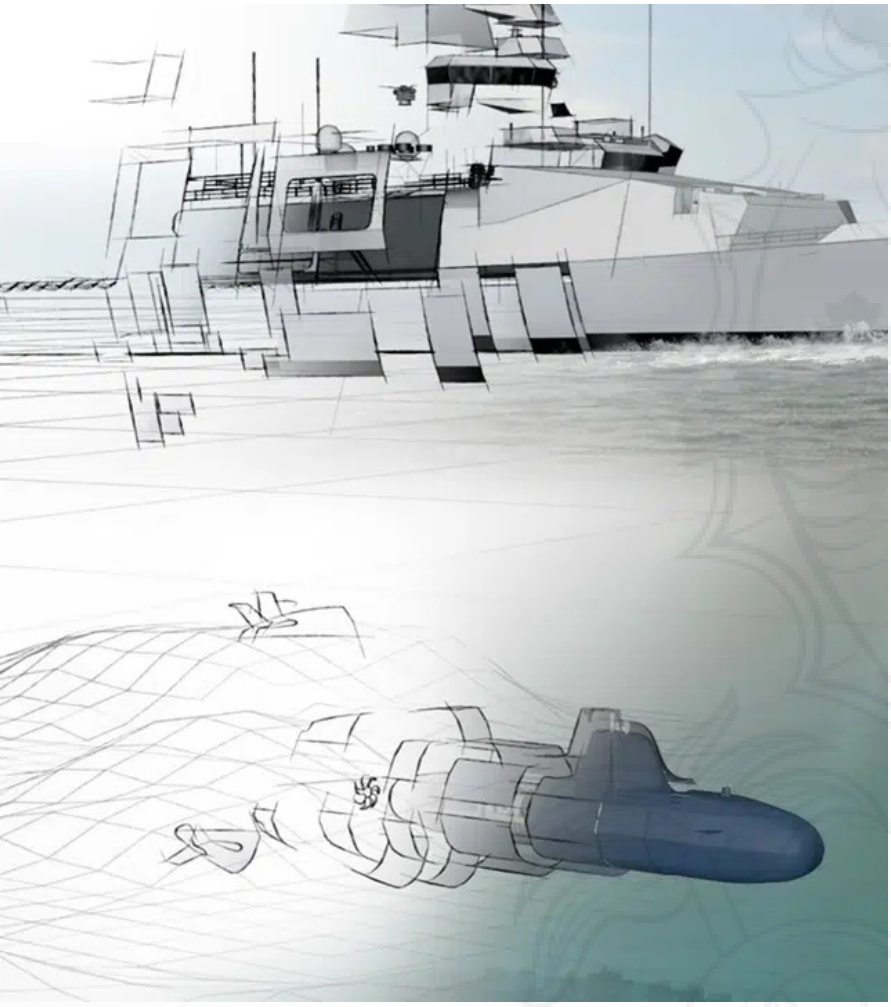
Phil Helmore, updated Martin Grimm

SP80 trials in December 2024
(Photo from SP80 website)

WARSHIP 2025

THE FUTURE FLEET: SMART TECHNOLOGY, SUSTAINABILITY AND AUTONOMY

Returning to the United Kingdom, Warship 2025 is set to be our most ambitious conference yet. With the theme "The Future Fleet: Smart Technology, Sustainability, and Autonomy," the event will offer a rich agenda featuring insightful presentations, dynamic panel discussions, and hands-on workshops. This year's sessions will explore core themes that are essential to the advancement of modern fleets:



- **Technology to improve availability**
- **Glide path to level 4 autonomy**
- **Drive toward net zero**
- **Blend of crewed/uncrewed – Do future vessels need crews?**
- **Lean crewing**
- **Tech Advancement**
- **More sustainable build techniques**

At Warship 2025, you'll have the opportunity to collaborate with thought leaders, participate in hands-on activities, and contribute to the ongoing transformation of naval defence. Don't miss your chance to be part of this landmark event, where the future of Warships takes shape.

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Incat to Launch World's Largest Electric Ship in early May

On 2 May 2025, Incat Tasmania will launch their Hull 096, the largest battery-electric ship ever constructed. This ground-breaking vessel, bound for South America, stands as one of the most significant export achievements in Australian history.

"We have been building boats for more than 40 years, but this is the most important launch in Incat's history by far," said Incat Chairman Robert Clifford. "Hull 096 is more than just a vessel – it's a turning point for the maritime industry. The launch of the world's largest battery-electric ship is a monumental achievement and a defining moment, not just for Incat, but for Tasmania, for Australia, and for sustainable transport worldwide."

Commissioned by South American ferry operator Buquebus, the ferry has the capacity to transport over 2,100 passengers and 225 vehicles between Argentina and Uruguay powered entirely by battery-electric energy.

With a 40-megawatt energy storage system carrying over 250 tonnes of batteries, Hull 096 will quadruple the battery capacity of any other existing ship.

At Incat's Hobart shipyard, progress on Hull 096 is advancing with waterjet units installed, and major equipment, including propulsion and energy storage systems continuing to arrive for installation. Fit-out is said to include the largest retail shopping space on any ferry in the world, spanning 2,300 square metres.

Following the launch in May, work will continue on completion of the interior fit-out and the installation of the battery system. Once fully equipped, Hull 096 will undergo sea trials in Hobart's River Derwent later this year.

Incat Tasmania

CAD render of Incat 096 for Buquebus
(Image courtesy Incat Tasmania)

General Purpose Frigate down-selection of two shipbuilders

In May 2024, the Department of Defence had released an approach to market to five shipbuilders from Germany, Japan, the Republic of Korea and Spain following the Independent Analysis of Navy's surface combatant fleet.

In November 2024, the Federal Government had down-selected two shipbuilders, Mitsubishi Heavy Industries and Thyssenkrupp Marine Systems, to progress designs for Australia's future general purpose frigates. This was based on an evaluation by Defence that identified these two designs as likely to best meet Australia's capability requirements.

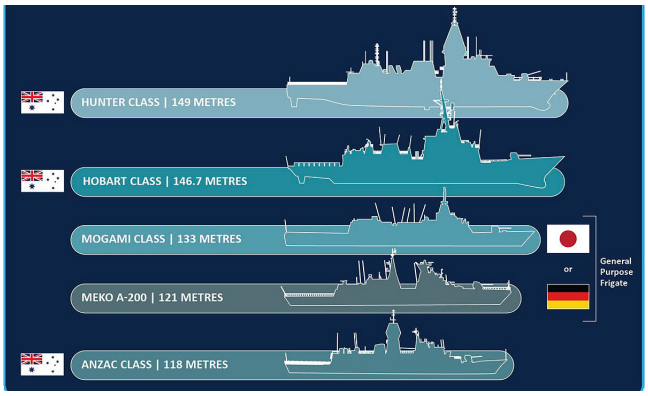
The Department of Defence is now working with Mitsubishi Heavy Industries, Thyssenkrupp Marine Systems and Australian industry to further develop the proposals for the Mogami and MEKO A-200 frigates.

An investment of up to $10 billion in the general purpose frigate project is forecast over the next decade. The general purpose frigates will replace the Anzac Class frigates and be equipped for undersea warfare and local air defence in order to secure maritime trade routes and Australia's northern approaches.

The first three general purpose frigates are planned to be built offshore and, on the basis of timely consolidation of the Henderson Defence Precinct, the remainder of the class would be constructed at Henderson, Western Australia. The Federal Government aim is to have the first of the general purpose frigates delivered this decade.

Regarding the project timeline, the Minister for Defence Industry and Capability Delivery, the Hon Pat Conroy MP has remarked: "The rapid, accelerated work of the general purpose frigate program to date underpins the next stages of the acquisition to ensure this capability is delivered this decade, providing our Navy with enhanced anti-submarine and anti-air warfare capabilities."

Department of Defence



Profiles of shortlisted GPF Options Compared with Existing Classes
(Courtesy Department of Defence)

MEKO-A200 frigate Al-Aziz (Image courtesy Thyssenkrupp Marine Systems via Department of Defence)

Mogami frigate on sea trials in Nagasaki port in 2021 (Image courtesy Mitsubishi Heavy Industries via Department of Defence)

First Arafura class Offshore Patrol Vessel delivered

During January, the Department of Defence accepted the first Arafura class Offshore Patrol Vessel (OPV), NUSHIP Arafura, for further test and evaluation ahead of delivery to the Royal Australian Navy.

NUSHIP Arafura, to be delivered under project SEA 1180, has been built by Luerssen Australia at the Osborne Naval Shipyard in South Australia. It was launched in December 2021 and since then further fit-out and set to work has been undertaken.

The project was originally planned to deliver 12 OPV's however following the Defence Strategic Review 2023 and the subsequent Surface Fleet Review, in February 2024 the project scope was reduced to only deliver six of the ships to the RAN. The first two are being constructed at Osborne with the remainder under construction at Henderson in Western Australia.

The Arafura class vessels will support civil maritime security and enhanced regional engagement in the Southwest Pacific and Southeast Asia.

Deputy Secretary Naval Shipbuilding and Sustainment Jim McDowell said the delivery of the first Arafura class Offshore Patrol Vessel was an important milestone in the Australian Government's investment in Naval Shipbuilding and Sustainment.

"The delivery of the first of class vessel to Defence highlights Defence's commitment to working through complex projects to deliver critical capability to our Australian Defence Force, built here in Australia," Mr McDowell said.

NUSHIP Arafura will now sail to its homeport at HMAS Stirling in Western Australia, before commissioning into the Royal Australian Navy fleet later this year.

Department of Defence

The first Arafura class Offshore Patrol Vessel, NUSHIP Arafura, conducting Sea Trials in August 2024 at the Osborne Naval Shipyard.
Image courtesy Department of Defence.

Multiple RAN Ship Commissioning

On Thursday 12 December 2024, four Evolved Cape Class Patrol Boats (eCCPB) were commissioned in a single ceremony at their home port of HMAS Coonawarra, Darwin, Northern Territory. A commissioning ceremony is a traditional naval ceremony marking a warship's formal entry into service by hoisting its colours (flag) for the first time. HMAS Ships Cape Pillar, Cape Naturaliste, Cape Woolamai and Cape Capricorn had been operating as Australian Defence Vessels (ADV) since their delivery and will now operate as His Majesty's Australian Ships (HMAS) after their intended service life was extended. The Evolved Cape Class Patrol Boats had been planned as an interim leased capability until the Offshore Patrol Vessels (OPVs) entered service.

However, their utility in meeting the Royal Australia Navy's operational requirements combined with the planned reduction in numbers of OPVs to be built has meant the eCCPBs will now be in service for 20 years. The four vessels will continue to play a major role in Navy's contribution to the nation's fisheries protection, immigration, customs and drug law enforcement operations.

Department of Defence

The Ships Companies of HMA Ships Cape Pillar and Cape Capricorn "cheer ship" during the during the multi-ship commissioning ceremony held at HMAS Coonawarra in Darwin, Northern Territory.
(Photo courtesy Department of Defence)

Austal Australia awarded further contract extension for Evolved Cape-Class Patrol Boats

Austal Australia has been awarded a contract extension for the construction of two additional Evolved Cape-class Patrol Boats, to be delivered to the Australian Border Force (ABF). The A$137.02 million contract brings the total number of Evolved Cape-class Patrol Boats to be constructed by Austal to 12, with eight delivered to date.

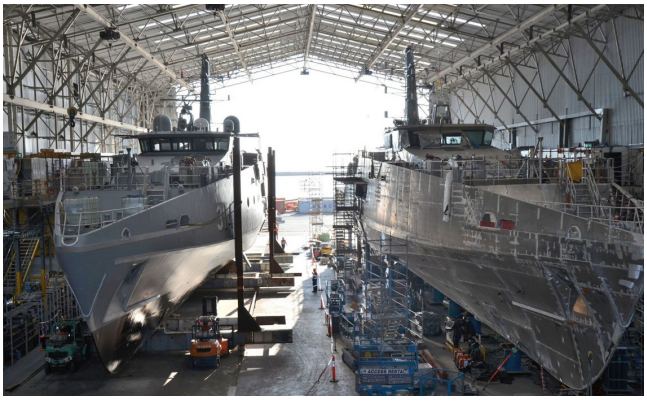
Austal originally delivered eight Cape-class Patrol Boats to the Australian Border Force from 2012 to 2015. The SEA1445-1 Evolved Cape-class Patrol Boat (ECCPB) project, initially constructing six 58-metre aluminium monohull patrol boats for the Royal Australian Navy from May 2020, was extended by two vessels in April 2022, and a further two vessels in February 2024. Austal has delivered eight of these boats to date with two vessels currently under construction at Austal's shipyard at Henderson in Western Australia. The latest contract extension for the Evolved Cape class will provide the ABF with their first Evolved Capes to expand their capabilities.

Designed and constructed by Austal Australia, the Evolved Cape-class Patrol Boats feature amenities to accommodate up to 32 personnel. The patrol boats are utilised for a variety of constabulary and naval missions across both the Royal

Australian Navy and Australian Border Force.

In-Service Support for the Cape, and Evolved Cape Patrol Boat fleets operated by the Australian Border Force and the Royal Australian Navy is provided by Austal Australia through dedicated service centres located in Henderson, Western Australia; Cairns, Queensland; and Darwin, Northern Territory.

Austal Australia



Evolved Cape-class Patrol Boats under construction at Austal shipyard at Henderson
(Image: Austal Australia)

Austal delivers 22nd Guardian-class Patrol Boat

Late last year, Austal Australia delivered the 22nd Guardian-class patrol boat, RFNS Timo, to Australian Department of Defence at a ceremony held at their Henderson shipyard. The boat will be operated by the Republic of Fiji Navy.

The Pacific Patrol Boat Replacement Project (SEA 3036-1) was awarded to Austal Australia in May 2016, with subsequent contract options awarded in April 2018, November 2022 and June 2024, taking the project to 24 vessels, valued at more than A$400 million, in total. The first of class was delivered in 2018.

The program aims to enhance practical maritime security cooperation across the South Pacific and further strengthen the region's capability to provide fisheries protection, perform search and rescue operations and respond to trans-national crime.

The Guardian-class patrol boats are 39.5 metres long with a beam of 8 metres and a loaded draft of 2.5 metres. They are capable of a speed of 20 knots and have a 3,000 nautical mile range travelling at 12 knots. Each vessel can accommodate 23 people.

The Guardian-class Patrol Boats have been constructed at Austal's dedicated Pacific Patrol Boat Replacement Production Facility at Naval Base in Western Australia [this is news to me? That is a separate locality further south than Henderson]. The vessels will be operated by twelve Pacific Island nations as well as Timor Leste.

In October this year, Austal handed over the 21st Guardian-class boat, Te Mataili III. The vessel was then delivered to Tuvalu.

Austal / Naval Today

Guardian Class patrol boat RFNS Timo handed over to the Government of Fiji by the Australian Government, as part of the Pacific Maritime Security Program. Credit: Austal

Austal contract for 130 metre 'hydrogen ready' high speed ferry

Austal Australasia has been awarded a contract valued at approximately A$270 million by Gotlandsbolaget of Sweden, for the design and construction of a 130-metre combined cycle, 'hydrogen-ready' vehicle passenger ferry.

Part of Gotlandsbolaget's 'Horizon X' program, the high-speed ROPAX catamaran will be the largest vessel ever constructed by Austal, and feature a unique combined cycle propulsion system that includes both gas and steam turbines – a first for high-speed craft, worldwide. Austal Limited Chief Executive Officer, Paddy Gregg said "Horizon X is an incredibly exciting project that is going to re-define commercial ferry capabilities, with a multi-fuel and hydrogen-capable combined cycle powerplant".

Gotlandsbolaget Chief Executive Officer, Håkan Johansson expressed his enthusiasm for the Horizon X project, saying "Thanks to the great collaboration between Gotland Tech Development and Austal, we can now move forward in supplementing our existing fleet of larger passenger and cargo vessels with a high-speed, multi fuel-catamaran, which is also hydrogen-ready."

With a capacity to transport up to 1,500 passengers, cargo and 400 vehicles, the 'Horizon X' multi-fuel catamaran will be designed by Austal with construction at the Austal Philippines shipyard commencing the first half of 2026 and construction scheduled for completion in mid-2028.

Austal and Gotlandsbolaget first announced plans for the development of the 130-metre multi-fuel high speed vehicle passenger ferry design in April 2023. Since then, Austal and Gotland Tech Development, a part of Gotlandsbolaget, have engaged with technology providers from around the world to select preferred main equipment, and to define system arrangements. This has included the development of the unique propulsion system arrangement that utilises heat from engine exhaust to contribute to vessel propulsion power and reduce emissions.

In October 2024, the project gained approval in principle from DNV, with the vessel design being confirmed as complying in principle with rules relating to gas-fuelled ship installations (hydrogen) and the International Code of Safety of Ships Using Gases or Other Low Flashpoint Fuels.

Austal Australasia

Render of the Austal 130m high-speed, hydrogen-ready catamaran for Gotlandsbolaget of Sweden
(Courtesy Austal)

Thales 2087 Sonar System for Hunter Class Frigates

The UK Government has confirmed that Australia will equip its Hunter-class frigates with the Thales 2087 sonar system. This sonar, manufactured in the United Kingdom by ThalesUnderwater Systems, is a towed array sonar that replaces the older Sonar 2031 in the Royal Navy. It equips a number of Type 23 frigates and is also set to feature on the Royal Navy's Type 26 frigates currently under production. A low-frequency active sonar (LFAS) system, the 2087 consists of both active and passive sonar arrays.

Thales describes the Sonar 2087 as a system that enables frigates to hunt the latest generation submarines at considerable distances and locate them beyond the range at which the submarines can launch an attack.

The sonar has already proven its operational capabilities during major exercises like Auriga 2010, where HMS Sutherland, the first British ship equipped with the system, successfully acted as the Anti-Submarine Warfare Commander during multinational drills involving British, American, Canadian, and French naval forces.

In October 2022, the UK launched a programme named Spearhead to modernise the Sonar 2087 further. The enhancements will include new active and passive variable depth sonar capabilities to ensure continued superiority in anti-submarine warfare.

The decision to integrate this advanced British system onto Australia's Hunter-class frigates reflects the deepening strategic defence cooperation between the two nations.

According to a UK Foreign Office statement, "The UK and Australia are also developing strategic undersea warfare cooperation. This will see both the UK and Australia working together to develop underwater capability and share information.

UK Defence Journal

Babcock to deliver lift and hoist systems for Hunter-class frigates

Babcock Australasia has been awarded a $30 million lift and hoist systems contract for the Royal Australian Navy's first three Hunter-class frigates.

The design of the stores lifts will be based on the system developed for the UK's Type 26 frigates used for movement of general stores, equipment and ammunition between decks inside the frigates. The food hoists transfer meals from the ship's galley to dining areas. The modification and maintenance aspects of the contract will involve close collaboration with BAE Systems Maritime Australia and the Department of Defence.

This latest contract follows Babcock winning the contracted to design, assemble and set to work the Hunter-class frigate air weapons handling systems last year.

Both programs will be managed from Babcock's new facility at Woodville North in Adelaide, which officially opened in October last year to support the delivery of land and naval programs. Other programs to be run out of the facility include Collins-class submarine in-service sustainment and future Life of Type Extension as well as Counter Chemical, Biological, Radiological, Nuclear and Explosive (C-CBRNE) asset management.

Babcock

L3Harris Technologies to deliver integrated platform management system for Hunter-class frigates

L3Harris Technologies has received a contract from BAE Systems Maritime Australia for the Integrated Platform Management System (IPMS) on the Royal Australian Navy's (RAN) Hunter class frigates.

L3Harris will design and deliver the IPMS to manage the ship's propulsion, power generation and auxiliary systems. L3Harris also developed the IPMS for the Royal Navy's Type 26 frigates, which the Hunter class is based on.

L3Harris' IPMS incorporates functionalities and capabilities derived from years of working with partners such as the Royal Australian Navy, UK Royal Navy, Royal Netherlands Navy and Royal Canadian Navy. Since its inception, L3Harris has progressively enhanced its IPMS technology and has exported and delivered systems for more than 300 vessels in 27 navies around the world.

L3Harris

Hybrid Ferries for HKKF from Incat Crowther

Hong Kong & Kowloon Ferry Limited (HKKF) has taken delivery of two new state-of-the-art hybrid ferries, designed by Incat Crowther and built by Hong Kong-based Cheoy Lee Shipyards. The new 40 m ferries can transport up to 450 passengers and will service the busy commuter routes between Hong Kong and the islands of Lamma Island, Peng Chau, and Hei Ling Chau.

The two new ferries, one of which is a carbon-hulled vessel and the other an aluminium-hulled vessel, are part of a nine-vessel order and will form part of a trial by the Hong Kong Government as it seeks to reduce emissions from the local shipping sector. Each of the vessels boasts a hybrid drive-train and lithium-ion energy-storage systems allowing them to operate in zero-emissions mode during slow-speed transit, berthing and manoeuvring.

In a further bid to reduce the environmental footprint of the new vessels, each ferry is fitted with exhaust-treatment technology and approximately 30 m2 of solar panels supported by battery technology to provide zero-emissions onboard power.

The operational and sustainability performance of both the carbon-hulled and aluminium-hulled vessel will be measured over the coming years.

In addition to sustainability benefits, each of the new vessels has been designed to provide an elevated customer experience. Each vessel is capable of transporting 300 passengers on its main deck and another 150 on the upper deck, while they also include bike hangers, lavatory facilities, a 10 m2 cargo hold on the main deck and additional luggage storage on the upper deck.

Sam Mackay, Technical Manager at Incat Crowther, said the delivery of the two new vessels was a key milestone in the project. "The successful on-budget delivery of these two hybrid vessels is a testament to the strong collaboration between the teams at Incat Crowther, Cheoy Lee Shipyards, and Hong Kong & Kowloon Ferry. This project continues our 20 year relationship with Hong Kong & Kowloon Ferry, and we are proud to be playing a role in helping to modernise and transition their fleet toward lower-emission solutions," said Mr. Mackay.

"Together, we've brought a future-focused ferry platform to life, helping to meet Hong Kong's growing demand for more sustainable maritime transport options. As operators like HKKF look to reduce their environmental footprint, projects like this showcase the potential of hybrid technologies to contribute to the sustainable expansion of fleets around the world," said Mr. Mackay.

Incat Crowther and Cheoy Lee Shipyards will deliver HKKF nine new vessels as part of this project—seven 40 m (two of which are hybrid vessels) and two 35 m vessels. The successful delivery of the two hybrid vessels comes after the delivery of two conventional diesel-powered 40 m vessels. The final five vessels in the fleet are under construction and expected to be delivered by 2025.

The new ferries will modernise HKKF's conventionally-powered fleet, also designed by Incat Crowther in the late 1990s.

Principal particulars of the two new hybrid vessels are:

Length OA	39.8 m
Length WL	39.2 m
Beam OA	10.5 m
Depth	3.40 m
Draft (hull)	1.57 m
(propeller)	2.10 m
Passengers	450
Crew	5
Fuel oil	6600 L
Fresh water	1000 L
Sullage	1000 L
Main engines	2×Cummins QSK50 each 1529 kW @ 1800 rpm
e-Motors	2×Danfoss EM-PMI375-T1100
Propulsion	2×propellers
Generators	1×Perkins Stamford 120 ekW
Batteries	AYK Energy 414 kWh
Speed	(service) 23 kn
Speed	(maximum) 25 kn
Construction	Carbon composite (1 vessel)
	Marine-grade aluminium (1 vessel)
Flag	Hong Kong Local Craft
Class/Survey	Bureau Veritas I + Hull + Mach

Stewart Marler

Port side of the composite-hulled HKK 32
(Photo courtesy Incat Crowther)

Austal Philippines delivers Incat Crowther designed 'Ocean Master' to Rottnest Fast Ferries

Ocean Master, a new 32 m aluminium catamaran designed by Incat Crowther and constructed by Austal Philippines, successfully completed sea trials last year and completed its delivery voyage to Perth in late December where it joins Rottnest Fast Ferries' growing fleet. Commissioned by Rottnest Fast Ferries early in 2024, Austal Philippines completed the catamaran less than twelve months after commencing construction in Balamban, Cebu.

The catamaran was officially accepted by representatives from Rottnest Fast Ferries following the successful completion of sea trials in November 2024 with a delivery voyage completed before Christmas, coincided with the peak tourism season for the operator.

President of Austal Asia, Wayne Murray said the delivery was another demonstration of the capability of the Austal Philippines shipyard to construct vessels of high-level design quickly, efficiently and to the highest quality. He continued: "The Austal Philippines team have delivered this impressive new catamaran in less than 12 months, exceeding expectations for productivity while maintaining the highest construction standards and product quality".

With this latest delivery, Austal Philippines has delivered 22 ships to 13 operators from around the world, including catamarans and trimarans ranging in size from 21 metres through to 118 metres. The shipyard also has the capacity and capability to provide through-life support for commercial and defence vessels - including vessel repairs, maintenance and refit services utilising their 100-metre floating dock, Lewek Hercules.

The vessel, with a capacity of 400 passengers and five crew across three decks, will allow Rottnest Fast Ferries to optimise its operational efficiency while providing an elevated passenger experience. Ocean Master features spacious seating arrangements, a flexible configuration to accommodate wheelchair users, extensive luggage and bicycle storage

areas, a large bar and kiosk, and five bathrooms including an accessible facility.

Designed to complete the 30 km journey from Hillarys Boat Harbour to Rottnest Island in just 45 minutes, Ocean Master is powered by two 1029 kW MAN D2862 diesel engines driving fixed-pitch propellers, achieving an operating speed of 25 kn.

The vessel's design and construction process saw close collaboration between Incat Crowther, Austal Philippines and Rottnest Fast Ferries, to ensure that Ocean Master meets all operational and regulatory requirements, while achieving a precise design and construction schedule.

Dan Mace, Technical Manager at Incat Crowther, said "Successfully achieving design, construction, sea trials, delivery and operation in less a year is a great outcome for all involved. This vessel has been truly customised for Rottnest Fast Ferries. It's a testament to the project team that we have been able to complete this project successfully and on-time. We are delighted to see it ready to enter service."

Luke Crispin and James Mulholland, Directors of Rottnest Fast Ferries, said "We're thrilled that this vessel has been completed so quickly and will enter service in time to help meet demand during our busiest period of the year. Incat Crowther and the project team were attentive and responsive throughout, and we couldn't be happier with the process and the final result. Ocean Master will deliver a first-class experience for passengers travelling to Rottnest Island and we are excited to have it in service this summer."

Incat Crowther's collaborative design and delivery process involved working closely with Austal Philippines during construction. This collaboration, which saw Incat Crowther provide accurate and timely guidance to the shipbuilder, ensured a prompt and on-time build schedule for the vessel.

With an operating speed of up to 25 knots the catamaran will be able to complete the journey between Hillarys Boat Harbour in Perth and Rottnest Island in Western Australia in 45 minutes.

Principal particulars of *Ocean master* are:

Length OA	32.0 m
Length WL	31.5 m
Beam OA	10.0 m
Depth	3.00 m
Draft (hull)	1.41 m
Passengers	400
Crew	5
Fuel oil	7400 L
Fresh water	2500 L
Sullage	2790 L
Main engines	2×MAN D2862 LE466 each 1029 kW @ 2100 rpm
Propulsion	2×fixed-pitch propellers
Generators	2×Zenith/Isuzu 6BG1QW 70kVA each
Speed (service)	25 kn
(maximum)	28 kn
Construction	Marine-grade aluminium
Flag	Australia
Class/Survey	NSCV Class 1C/1D

Austal & Stewart Marler

Starboard bow of Ocean Master
(Photo courtesy Incat Crowther)

Hydromover 2.0 from Incat Crowther

Incat Crowther has been commissioned to design an ultra-efficient all-electric light cargo transfer vessel for Singapore's marinEV, a business of Yinson GreenTech. The vessel, Hydromover 2.0, will transport light cargo such as stores, food and maintenance items to vessels anchored in the Singapore Strait, waiting to dock at the Port of Singapore. Hydromover 2.0 builds on the success of the prototype Hydromover 1.0.

Hydromover 2.0 will feature Incat Crowther's efficient hullform, maximising the vessel's operational range and making the vessel highly effective for transporting light cargo. This technology ensures smooth navigation in rough seas while optimising energy use. The 24 m vessel will be designed to carry a payload of 25 t via its large 65 m² cargo deck and will be powered by a lithium-ion battery system.

Part of marinEV's innovative line of zero-emission electric vessels, Hydromover 2.0 will contribute to the Maritime and Port Authority of Singapore's decarbonisation target to have all new harbour craft fully electric or operating on lower carbon fuels by 2030.

Hydromover 2.0 features comfortable accommodation for up to four crew while the main deck features a spacious wheelhouse, comfortable mess seating for up to seven people, a fully-equipped food-preparation area and pantry, and a generous-sized bathroom. The wheelhouse features dual touchscreen displays which offer real-time updates to the crew, enhancing safety onboard. Hydromover 2.0 also incorporates advanced decision-making features such as energy optimisation, waypoint calculation, collision detection, and the ability to coordinate remote and autonomous functions. These capabilities ensure efficient and safe operations, reducing the risk of human error.

"This collaboration with Incat Crowther marks a significant step forward in sustainable shipping in Singapore. Hydromover 2.0 builds on the success of Hydromover 1.0 which has

recently completed successful commercial trials. Hydromover 2.0 is a testament to our commitment to innovation and a crucial step in our mission to drive sustainable practices in maritime transport. We're looking forward to Hydromover 2.0 joining our fleet in 2025 as we continue to accelerate the industry's transition to net zero," said Jan-Viggo Johansen, Managing Director of marinEV.

"Incat Crowther has a proven track record of delivering bespoke zero-emissions solutions to operators around the world and we are looking forward to bringing our expertise to this groundbreaking project. Low and zero-emission vessels are the future of shipping, and Hydromover 2.0 exemplifies the power of combining cutting-edge expertise and technology to deliver outstanding operational performance, safety and efficiency," said Sam Mackay, Technical Manager at Incat Crowther. "As Hydromover 2.0 progresses toward sea trials in 2025, Incat Crowther is pleased to be partnering with marinEV to help bring their commitment to transforming maritime transport with innovative, sustainable solutions to life," said Mr Mackay.

The final stages of designing Hydromover 2.0 are now underway with the selection and evaluation of key equipment in progress. Hydromover 2.0 will be classed by Bureau Veritas with the Battery System notation. Incat Crowther's project scope also covers design assessment for the battery system functionality and safety features, including fire protection and system certification.

Principal particulars of Hydromover 2.0 are:

Length OA	23.40 m
Length WL	23.25 m
Beam OA	7.60 m
Depth	3.15 m
Draft full load (hull)	1.38 m
Passengers	12
Crew	4
Fresh water	3000 L
Sullage	250 L
Propulsion	2×electric motors
Propulsion	2×azimuth thrusters
Speed	(service) 10 kn
	(maximum) 14 kn
Construction	Marine-grade aluminium
Flag	Singapore
Class/Survey	Bureau Veritas I + Hull + Mach , Battery System

Starboard side of Hydromover 2.0
(Image courtesy Incat Crowther)

Stewart Marler

Students immerse in digital shipbuilding environment

In late 2024, students and staff from the Australian Command and Staff College (ACSC) – Capability Management (CM) program had an opportunity to experience shipbuilding technology utilised for the design and construction of the Hunter-class frigates (HCF) in South Australia.

The ACSC-CM provides a master's program for O4/O5 level officers in the area of capability acquisition. On graduating, staff officers are typically posted to a capability development or delivery role within the Department of Defence. One of the goals of ACSC-CM is therefore to expose course members to the latest maritime technologies.

Organised by Commander Shanker Singh, one of the directing staff at the ACSC-CM program at the Australian Defence Force Academy in Canberra, program participants visited the HCF project facilities to gain exposure to design and production methods. This included a visit and briefing on the Visualisation Suite (VisSuite), the 3D interactive model of a Hunter-class frigate provided by the Hunter Explorer (HuX) Team, part of the BAE Systems Maritime Australia Innovation Centre. The 3D visualisation platform aims to support the workforce that constructs the HCF by making shipbuilding information more accessible and understandable across the business.

HuX has the entire Osborne South naval shipyard modelled and includes integration to facilities databases, site performance analytic dashboards, simulations of planned production output and live operating states of equipment.

HCF Program Director Captain Leigh Benning said the visit was a valuable opportunity for Defence personnel to engage with innovative maritime technologies before they join acquisition projects at the end of the ACSC program. All vowed to assist the course with future sessions on technologies in the maritime domain.

Department of Defence

Sydney Harbour Ferry Norman Selfe

Readers may recall the news item in our December issue on the ferry John Nutt, the second of a series of seven. The last of that series is to be named after Norman Selfe, an engineer and naval architect in Sydney in the latter half of the 19th century and into the 20th century. It is due for delivery in June.

For the benefit of those interested in his connection with our profession, the following brief outline of Selfe's life may spark further reading, for which his Wikipedia listing is a useful starting point.

Selfe arrived in Sydney from England with his parents in 1855, looking to get an engineering education that they could not afford in England. Having commenced an apprenticeship to PN Russell & Co, with whom he became chief draughtsman even before completing his articles. His work included many types of engineering projects including flour mills, ice-making machines wharves and dredges. Having left PN Russell in

1864 and worked on various projects by 1869 Selfe was chief engineer and draughtsman at Mort's Dock and Engineering Company in Balmain. According to Catherine Freyne (Sydney Journal, June 2009) he had claims to have "designed the hulls or machinery of some 50 steam vessels" both with Mort's and as a consultant. My investigations indicate that, despite all his maritime work he was never a member of RINA's predecessor body. This is hardly surprising since he was developing his career in the years when RINA was being formed in London.

Most of Selfe's work after he left Mort's seems to have been away from the maritime area. He travelled the world had grand visions for a Sydney underground railway and was winner of a 1902 competition for a harbour bridge (for which he never received the prize). It wasn't until after his death in 1911 that Bradfield was appointed Engineer-in-Chief of Sydney Harbour Bridge and City Transit.

In his latter years he was a key figure in the history of technical education in NSW. He was a proponent of and "industrial university" and in fact gave regular classes in mechanical drawing at the Sydney Mechanics' School of Arts, venue for some of NSW Section's technical meetings. Some refer to him as one of the founders of what is now Engineers Australia.

Rob Gehling

Naval Architects On The Move

The recent moves of which we are aware are as follows:

Ryan Arscott has moved on within the Royal Australian Navy and has taken up the position of Maintenance Manager—Systems in Sydney.

Nathan Chappell has moved on from Woodside Energy and, since then, has been contracting to Shell, most recently as the OCR Marine Lead on the Prelude FLNG, but based in Perth.

Ben Corden-McKinley has moved on from BMT Defence and Security to take up a position with the Australian Maritime Safety Authority, where he has now taken on the role of Head of Technical, Vessel Safety Unit, in Melbourne.

Dan Curtis has moved on within Bastion Defence Consulting and has taken up the position of Northern Australia Regional Manager in Tanby, Queensland.

Peter Dandy has moved on from Expleo Group in the UK and has taken up the position of Engineering Manager UK with ASC Pty Ltd in Longton, England.

Peter Gawan-Taylor has moved on from Austal Ships in Cebu, The Philippines, and has re-located to Canberra where he is now evaluating opportunities.

Siobhan Giles has moved on from BMT Design and Technology and, after some time at Naval Group Australia, Southern Launch and ASC, has taken up the position of Network Planning Engineer with SA Power Networks in Adelaide.

Jordan Glanville has moved on from Oceanex Energy and is now the co-founder and CEO of Ocean Energy in Melbourne.

Alan Goddard has moved on from Ellis Engineered and, after some time at Whitewater West industries and Taiga Motors, is now consulting in the area of product design and composite structures in Toronto, Canada.

Gary Goetz has moved on within Navantia Australia and has now taken up the position of DDG Design Engineering Manager in Melbourne.

Riley Graham has moved on from Navantia Australia and, after some time at Thales Defense & Security and Logistic Engineering Services, has taken up a position as an ILS Engineer, contracting to JVAT in Melbourne.

Keegan Graham-Parker has moved on within Thrust Maritime and has taken up the position of Operations Manager in Melbourne.

Kristoffer Grande has moved on from Jacobs Australia and is now a member of the consulting staff with Amentum in Canberra.

CMDR Geordie Grant has moved on within the Royal Australian Navy and has taken up the position of Project Managers Representative for both SEA5000 (Hunter Class Frigate) and DCE (Destroyer Capability Enhancement) Projects with the Naval Construction Branch, Naval Shipbuilding and Sustainment Group, in Adelaide.

Anthony Gray has moved on from OSD-IMT and, after some time at Seaspan ULC, has taken up the position of Principal Naval Architect with Longitude Engineering in Bideford, England.

Gillian Gray has moved on from Gray Naval Architecture in England and is now the owner of Gray Marine Consultancy and the Principal Marine Specialist with Hydrosurv in Vancouver, Canada.

Suzanne Hutchison has moved on from AMOG and is now evaluating opportunities in Perth.

Thomas McLean has moved on from Lateral Naval Architects in the UK and has taken up the position of Naval Architect with BMT in Melbourne.

Brett Ryall has taken up the position of an AMSA-accredited Marine Surveyor with Maritime Survey Australia in Sydney.

This column is intended to keep everyone (and, in particular, the friends you only see occasionally) updated on where you have moved to. It consequently relies on input from everyone. Please advise the editors when you up-anchor and move on to bigger, better or brighter things, or if you know of a move anyone else has made in the last three months. It would also help if you would advise Rob Gehling when your mailing address changes to reduce the number of copies of *The Australian Naval Architect* emulating boomerangs.

Phil Helmore

Jonathan Binns

Industry News

Australian Naval Infrastructure Board Chair and Non-Executive Director appointments

In late December 2024, the Federal Government announced the appointment of the following Directors to the Australian Naval Infrastructure Pty Ltd (ANI) Board:

- Mr Ronald Finlay AM as Chair, for three years, from 11 December 2024
- Major General Kathryn Toohey AM CSC (Retd) as Non-Executive Director, for three years, from 11 December 2024
- Mrs Andrea Hall as Non-Executive Director, for three years, commencing on 14 February 2025

Mr Finlay brings significant experience with over 40 years working on major construction and engineering projects, including many high-profile Defence projects. He was a member of both the Australian Naval Shipbuilding Advisory Board and its replacement the Naval Shipbuilding Expert Advisory Panel. An experienced Board Chair and Non-Executive Director, Mr Finlay is currently the Independent Chair of WestConnex.

Major General Toohey (Retd) has three decades of experience in Defence, with her last position as the Head of Force Integration Division within the Vice Chief of the Defence Force Group. At the time of the announcement, Major General Toohey (Retd) was a Non Executive Director on the Boards of Austal Ltd, Defence Health Pty Ltd, Cylnet International Pty Ltd, GWS Giants, and Basketball ACT.

Mrs Hall is an experienced Non-Executive Director and Chair of audit and risk committees, with more than 35 years' experience in the financial services industry. Mrs Hall is a Chartered Accountant and at the time of the announcement was a Non-Executive Director and Audit Chair for both the Commonwealth Superannuation Corporation and Evolution Mining Boards, and Non-Executive Director and Chair of the Audit and Risk Committees for Perenti Ltd and Western Power (Electricity Networks Corporation).

The government thanked Mr Lucio Di Bartolomeo and Ms Janice van Reyk for their valuable contributions to the ANI Board since 2017. ANI has undergone significant growth during their time on the Board, including the 2020 completion of the state-of-the-art Osborne South Yard supporting the Hunter Class frigate project, and which is expected to be used into the future to build the Hobart Class destroyer replacement. Mr Di Bartolomeo has served as Board Chair while Ms van Reyk's served as Chair of the Audit and Risk Committee of the company.

Department of Defence

Delivering a plan for continuous Naval Shipbuilding and Sustainment in Australia

In late 2024, the Federal Government reaffirmed its commitment to continuous naval shipbuilding and sustainment, delivered by an Australian workforce and supported by a sovereign supply chain, through the release of the 2024 Naval Shipbuilding and Sustainment Plan.

The Plan outlines the Government's investment of up to $159 billion over the next decade through the Integrated Investment Program that will see a significant boost to Australia's maritime capabilities. It articulates a 30-year pipeline of construction and sustainment projects, predominantly in South Australia and Western Australia, including conventionally armed, nuclear-powered submarines, an expanded surface combatant fleet and landing craft for the Australian Army.

The Deputy Prime Minister detailed the steps being taken by the government to grow the required workforce. The workforce growth will be overseen by the newly established Maritime Workforce and Skills Council in collaboration with partners from federal, state and territory governments, industry, trade unions and academia.

The Government is also progressing detailed design and enabling works to deliver multi-billion-dollar infrastructure upgrades for Australia's maritime industrial base, including for the new Defence Precinct at Henderson in Western Australia and the Submarine Construction Yard at Osborne in South Australia.

To ensure the Government's approach to shipbuilding keeps pace with the changing strategic environment, the plan will be updated on a biennial basis, with the next iteration scheduled for release in 2026. A copy of the 2024 Naval Shipbuilding and Sustainment Plan can be found at: https://www.defence.gov.au/about/strategic-planning/2024-naval-shipbuilding-sustainment-plan.

Department of Defence

BAE Systems commits to Lot Fourteen precinct in Adelaide

In late 2024, BAE Systems Australia has announced a commitment to establish its head office on North Terrace in Adelaide at the Lot Fourteen innovation district. BAE Systems will move into Lot Fourteen alongside more than 160 other innovation and technology-focused companies, and Commonwealth and State Government- funded agencies specialising in Defence, space, critical technologies, and cyber capabilities.

The Company will take up the anchor tenancy at the Innovation Centre, the first new build at Lot Fourteen, with plans for around 500 employees to be located in the new building.

BAE Systems has more than 6500 employees across Australia in all states and territories working in domains including maritime, aerospace, cyber, autonomous systems, electronic warfare, and high frequency surveillance programs.

In addition to its customer-facing office in Canberra, BAE Systems has a large footprint in Adelaide with key locations including the Osborne Naval Shipyard, the manufacturing hub for the Hunter Class Frigate Program, and the future site for the construction of the SSN AUKUS submarines. BAE Systems also operates a large technological and manufacturing

Artists impression of the planned new head office of BAE Systems at Lot Fourteen development in Adelaide. Their office will be in a new multi-story building as seen behind the existing heritage buildings on the site (Photo courtesy BAE Systems / Lot Fourteen)

precinct at Edinburgh Parks, close to RAAF Base Edinburgh and the Defence Science Technology Group, as well as a site at the Tonsley Innovation District in Adelaide's southern suburbs and a skills and training partnership with Findon Technical College.

Craig Lockhart, CEO of, BAE Systems Australia said: "Over the next 12 months we expect to recruit 800 new employees across our operations, and Lot Fourteen is a key enabler to achieving our growth ambitions. Our decision to become an anchor tenant in Lot Fourteen's new Innovation Centre reflects our enduring commitment to a strong partnership with the South Australian Government and continuing journey for economic development and sustainability."

BAE Systems

Selection of Landing Craft Heavy Design

In November 2024, the Department of Defence selected a design by Damen Shipyards Group as the preferred option for the Australian Defence Force's new Landing Craft Heavy under a program that will renew its littoral fleet. This acquisition of new littoral manoeuvre capabilities and associated infrastructure has been identified as a priority in meeting the aims of the National Defence Strategy and is the next stage in the transformation of the Australian Army to one focused on littoral manoeuvres.

The Damen Shipyards Group's Landing Ship Transport 100 (LST100) will provide a capability which is essential to the restructure and re-posture of the Army. The vessels, along with Landing Craft Medium and amphibious vehicles, will support a strategy of denial which includes deploying and sustaining land forces with long-range land and maritime strike capabilities in littoral environments.

Eight Landing Craft Heavy vessels, based on the LST100, will be built by Austal at their Henderson Shipyard in WA, subject to acceptable commercial negotiations and demonstrated performance. Construction of the first Landing Craft Heavy is expected to start in 2026.

The LST100 vessel design has a 3,900-tonne displacement, is 100 meters long and 16 meters wide. It will be capable of operating with other vessels to undertake a range of tasks including troop insertion and extraction, logistics movements and humanitarian assistance and disaster relief.

The vessel will be capable of carrying more than 500 tonnes of military vehicles and equipment. Loads carried could include six Abrams Tanks,11 Redback Infantry Fighting Vehicles or 26 HIMARS. The landing ships will be fitted with self-defence weapons and Australian military communications systems.

Department of Defence

Artists impression of an LST100 discharging military vehicles
(Image courtesy Department of Defence)

Australian Government and industry partners sign SSN AUKUS Agreement

The Australian and UK Governments have announced a significant milestone between the Australian Submarine Agency (ASA) and industry partners which will support the delivery of the SSN AUKUS fleet of conventionally armed, nuclear-powered submarines for the Royal Australian Navy.

The ASA, BAE Systems and ASC Pty Ltd have signed a Tasking Statement, a contractual agreement that supports the joint development of a build strategy, supply chain management plans and a workforce development strategy.

Stuart Whiley, Chief Executive Officer and Managing Director of ASC, said: "The Tasking Statement is an important step in establishing a sovereign nuclear submarine build capability in Australia. The program is anticipated to generate thousands of highly skilled jobs over its lifetime.

"SSN AUKUS is a multi-national, multi-generational programme through which ASC will invest in developing the critical skills required to build a nuclear submarine fleet in Australia. It's hard to imagine, but the children at school today will be the ones building our submarine fleet of tomorrow."

Steve Timms, Managing Director, BAE Systems' Submarines business, said: "SSN AUKUS is our contribution to the critical tri-national security partnership between Australia, the UK and the US. The safe build, test and commissioning of nuclear submarines is a hugely complex engineering endeavour and through these agreements, we're able to share our vast experience of nuclear submarine capabilities with our industry partners to support the build of submarines in Australia.

"We have a long history of delivering sovereign capability and security in Australia and the UK and the Tasking Statement underpins further support to essential delivery capabilities in Adelaide, with support from Barrow."

Craig Lockhart, Chief Executive, BAE Systems' Australia, said: "Focused on stealth and endurance, the SSN AUKUS submarine will integrate cutting edge technologies and advanced materials to enable it to operate the full spectrum of underwater missions, from advanced intelligence and

Profile of the LST100 design
(Image courtesy Department of Defence)

surveillance through to underwater warfare.

"It is a complex build challenge that industry partners are coming together to deliver. Work is underway on defining the delivery schedule, the enablement environment for future information transfer between the UK, US and Australia, as well as design of the new yard at Osborne to accommodate the build."

Over the past eight months, government and industry partners have made progress across a number of areas for delivery of the SSN AUKUS. In November, the ASA, BAE Systems and ASC signed an AUKUS Mobilisation Deed, which provides a framework to contract with the Australian Government through the ASA. That followed the Heads of Agreement and the tri-lateral announcement of the Commonwealth of Australia's shipbuilders in March.

Integrated Project Teams are now working to oversee tasks such as nuclear stewardship, infrastructure functional requirements, business enablement and build preparation. Underpinning business functions, such nuclear safety and assurance, engineering and build operations have also been established.

Department of Defence

US Navy delays next-gen attack submarine SSN(X) program to 2040

The U.S. Navy has announced a delay in its Next-Generation Attack Submarine (SSN[X]) program, pushing the first procurement from Fiscal Year (FY) 2035 to FY2040. This decision stems from budgetary pressures, prompting concerns over the Navy's ability to maintain its undersea dominance.

The SSN[X] is envisioned as a successor to the Virginia-class nuclear-powered attack submarines, which have been in production since 1998. While the Virginia-class submarines are equipped with advanced payload modules, the SSN[X] is intended to deliver superior capabilities than its predecessor, integrating the speed and payload of the Seawolf-class, the acoustic stealth of the Virginia-class, and the operational longevity of the Columbia-class ballistic missile submarines. The ambitious design is expected to result in a larger and more advanced submarine than the Virginia-class.

As well as the budgetary pressures, the program faces significant industrial challenges. Estimates from the Congressional Budget Office suggest a cost between $6.7 billion and $8.0 billion per unit, higher than the Navy's projections. The projected costs, combined with the extended timeline, risk creating a gap in the U.S. submarine construction industrial base, which relies on two primary shipyards: General Dynamics Electric Boat and Huntington Ingalls Industries Newport News Shipbuilding. Maintaining workforce readiness and supply chains will be critical to the SSN[X] program.

Strategically, the SSN[X] is intended to ensure the U.S. Navy remains ahead in underwater warfare capabilities. The submarine's design focuses on enhanced speed, greater payload capacity, and the ability to integrate with unmanned systems. However, the procurement delay raises questions about the Navy's ability to sustain its undersea superiority.

The program also faces debate over the type of nuclear fuel to be used. While low-enriched uranium could align with non-proliferation goals, the Navy has emphasized the disadvantages of transitioning away from the highly enriched uranium used in its current fleet. Concerns include reduced reactor endurance, increased costs, and longer development timelines, with estimates suggesting a transition could take decades and cost billions.

Congress is likely to scrutinize the program closely, given its potential impact on other Navy priorities and its high costs. While the Navy requested $586.9 million in research and development funding for FY2025, this represents a reduction from earlier projections, reflecting the delayed timeline. Some lawmakers have proposed further reductions, citing program delays and cost uncertainties.

https://armyrecognition.com/news/navy-news/2024/

Cruising Ships Visiting NSW

The summer cruise season has moved into high gear, with visits to Sydney in late November by Pacific Adventure, Royal Princess, Queen Elizabeth, Westerdam, Celebrity Edge, Ovation of the Seas, Carnival Splendor, Silver Muse, Crown Princess, Europa 2, and Viking Orion.

December saw return visits by most of these vessels and added visits by Regatta, Silver Nova, Diamond Princess, Sevven Seas Explorer, Disney Wonder, Viking Venus, AIDAsol, and Azamara Pursuit. January saw return visits and added visits by Norwegian Sun and Seabourn Quest, and early February saw return visits and added visits by Asuka II, Viking Sky and Zuiderdam.

The number of scheduled cruise-vessel visits to Sydney is now back at the pre-pandemic level.

Cruise vessels operating out of Sydney and Melbourne have continued to call at Eden, NSW, with vessels berthing at the Cruise Ship Wharf and passengers going ashore to visit local sights, shops and museums.

Silver Nova, Silver Muse(twice), Disney Wonder (twice), Crown Princess, Azamara Pursuit, Diamond Princess, Seabourn Quest (twice), Norwegian Sun and Regatta all visited between mid-November and mid-February.

The Port Authority of NSW has recently increased the limits on size of vessels which can berth at the Eden Cruise Ship Wharf, and the limits are now

Length OA	325 m
Beam	50 m
Draft	9.5 m (for dredged depth 10.5 m)
Displacement	70 000 t

It is proposed to add more berthing and mooring dolphins to further increase the size of vessels calling there.

Phil Helmore

UNSW Canberra

Well, we have made it to 2025 and look forward to all that it will bring, both within and outside the classroom. Classes start on Monday 24 February, and we will welcome a new intake of students, discovering who has accepted offers to study with us.

Since the last issue of *The ANA*, graduation ceremonies in December 2024 were a highlight. In November I reported on end-of-academic-year design presentations as the year approached its end. The readership can probably relate to the stresses felt by the students around that time associated with completing final year thesis project deliverables, dotting i's and crossing t's, completing and delivering last assignments, and walking in and out of final exams. Well, I am proud to report the profession has three new graduates launched from our UNSW Canberra "grey ship" program:

Scarlett Locker: Thesis Investigation of the Impact of Sail Arrangement on the Fuel Saving Capabilities of Multi-Sail Systems

Thandi Murada: Thesis Developing a Mathematical Model to Predict Ship Lifecycle Costs, to Assess the Monetary Feasibility of a Titanium Hull Cape Class Patrol Boat

James Scotson: Thesis Evaluating the Feasibility of Liquid Organic Hydrogen Carriers as a Future Naval Fuel

In the crowd that gathered for UNSW Canberra graduation ceremonies on 11 December 2024 was our program sponsor, HNE, RADM Rachel Durbin. While out of uniform, she also played a special role in the life of this graduating trio, providing Scarlett (and the others vicariously) with a host family during Scarlett's years at the Academy. Scarlett, in addition to earning her degree, was also the recipient of the RINA Australian Division Prize for her thesis and the David Carment Medal and Prize for the best overall performance by a student in the final year of the BE degree in naval architecture.

SBLT Scarlett Lockyer presented with her awards by David Lyons (L) and Warren Smith (R)
(Photo courtesy Rachel Durbin)

Class of 2024: (L-R) RADM Rachel Durbin, David Lyons, SBLT Scarlett Lockyer, SBLT Thandi Murada, SBLT James Scotson and Warren Smith
(Photo courtesy Kane Kasemchainan)

While not directly a part of our academic program, another milestone occurred on the following day, 12 December, when our third-year cohort MIDN's marched in their ADFA Graduation Parade in front of the Governor General and a range of other dignitaries, staff, family and friends. As representatively depicted in the photo, four of them in MIDN's Archie Gumley, Kelvin Hepburn, Aaron Kearns and Rian Klinger were out there somewhere on the parade ground. They were subsequently promoted, and we will meet them again in 2025, in their fourth year of studies, now as SBLT's and graduates of ADFA. Congratulations gents!

A significant acquisition and addition to our infrastructure is a large-format Modix 180X 3D printer with a print volume of 1800×600×600 mm. Several students over the summer, including Sasha Apelt, destined to be our first civilian graduate in December 2025, have been working to commission it and produce models for open-water testing. This activity is being led by Sean McCracken, and he has been providing work-integrated learning opportunities across a range of related projects. Our first significant hullform is designed to be fitted with a small waterjet propulsion system (see the photo). In parallel, we will soon be commissioning a "BlueROV2" and a remotely operated "BlueBoat USV", both from Blue Robotics. These projects will allow us to grow our open-water testing capabilities alongside what we can do in the laboratory with the flume.

As stated in previous reports on our activities, the supply of naval architects is not in equilibrium with assessments of national demand. We invite all who may be interested to consult with us to support workforce planning and naval architectural growth needs.

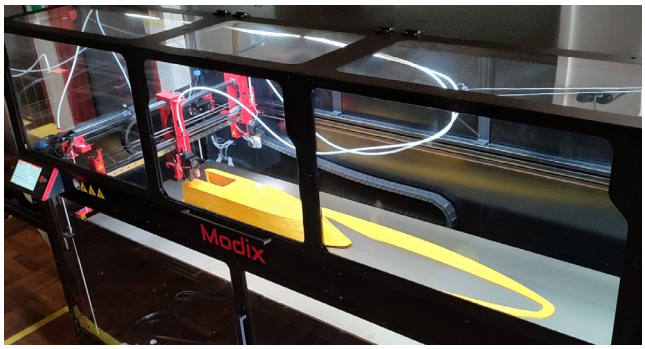
A/Prof. Warren Smith

Naval Architecture Program Coordinator

School of Engineering and Technology

UNSW Canberra at ADFA

ADFA Graduation Parade 12 December 2024
(Photo courtesy Warren Smith)



UNSW Canberra's Naval Architecture Group large-format ship hull Modix 180X 3D Printer displaying test prints of waterjet project hull form
(Photo courtesy Sean McCracken)

University of Newcastle

Simulating Ship Structural Response to Wave Action

Understanding the overall dynamic response of ships and offshore platforms under wave action is important for the design of new ships or platforms. But it is even more important for the assessment of existing ships or platforms, particularly those which have been in service for many years. The expected response under unexpected or even extreme sea states is critical. Such conditions cannot always be avoided and could affect the longer-term continued operation of a vessel. Also, the safety of the vessel could be at risk as well as the safety and comfort of those on board. A greatly improved understanding of the response of the ship or platform and, thus, the risks likely to be involved will support advanced vessel management, including the need for intervention or preventive measures such as pre-emptive repair and maintenance.

Predicting likely vessel response under various sea-states with waves up to 6 m in height and 10% steepness has been the focus of an industry-led research project involving software house Pacific-ESI based in Sydney, the University of Newcastle, the Maritime Platforms Group with the Defence Science and Technology Group in Melbourne and the University of NSW Sydney. Supported also by two Australian Research Council Linkage Grants, the team has completed two detailed reports which are publicly available outlining the numerical modelling and its calibration against physical results.

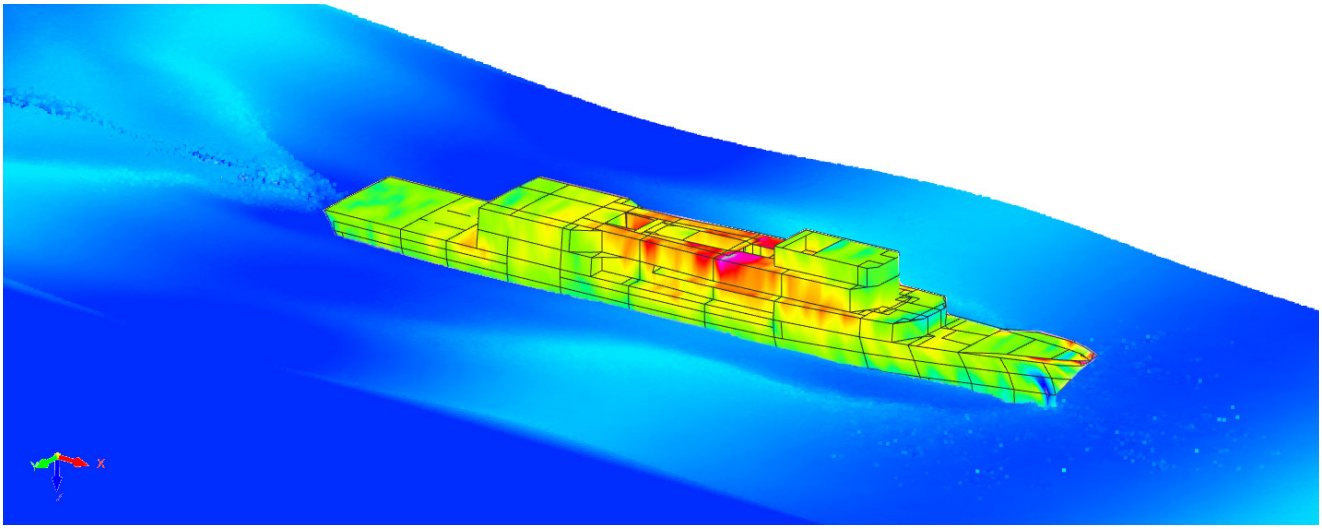
For the numerically minded, the modelling uses a hybrid SPH-FEA (Smoothed Particle Hydrodynamics–Finite Element Analysis) algorithm to simulate the structural response of the ship or platform including its overall motions (such as heave and pitch) and the detailed stresses at various nominated locations within the hull of the vessel. As outlined in the various reports, the simulation is based on a mesh-free Lagrangian 'ocean' made up of (SPH) particles interacting directly with a conventional (i.e. also Lagrangian) but detailed elastic Finite Element model of the ship or platform.

To date, the project has shown a high degree of consistency between model predictions and physical test results obtained from models in a wave tank. This includes nonlinear responses of the ship or platform. Although computationally demanding, recent progress shows that this can be reduced by optimal SPH modelling, as this is the most demanding numerical part of the simulations. While the underlying software being used are industrial-grade software tools, the next stage of the project includes further calibration and validation and some specialised commercialisation of the software. Expressions of interest in contributing to and collaborating in these next steps of this project are welcome; please contact the Pacific ESI team at <research@esi.com.au>.

Em Prof. Rob Melchers

Centre for Infrastructure Performance and Reliability

The University of Newcastle



Stresses in ship model among waves
(Image courtesy Rob Melchers)

Australian Maritime College (UTas)

New underwater collision research facility will help keep submariners safe

A new, state-of-the-art facility at the Australian Maritime College (AMC) will advance scientific understanding of the "crashworthiness" of submarines, autonomous underwater vehicles, and other marine vessels, according to researchers.

The Underwater Collision Research Facility (UCRF) was developed in partnership with Defence Science and Technology Group as part of the Defence and Maritime Innovation and Design Precinct at the University of Tasmania's Newnham Campus in Launceston.

AMC Principal Malcolm Wise AM said the UCRF would provide a controlled environment to study the complex interactions between fluids and structures during underwater collision events.

"About 22 per cent of major submarine incidents involve underwater collisions, so it's vital for us to understand what happens during these collisions in order to keep the crews of all vessels safe," Mr Wise said. "The UCRF represents a significant leap forward in ensuring the safety of critical maritime operations, and we are proud to do this work as Australia's national maritime institute."

The facility will also be used to improve the performance of submarine and autonomous underwater vessel designs for both Australia and the AUKUS partners.

The Deputy Prime Minister and Minister for Defence, the Honourable Richard Marles MP, in visiting the new facility noted: "There is world leading research taking place right here in Launceston which at its heart is about the safety of our submariners. The research at the Australian Maritime College is giving us a greater understanding of maritime operations and how we can improve the performance of our underwater capabilities."

Deputy Vice-Chancellor Research at the University of Tasmania, Professor Anthony Koutoulis said this was the latest collaboration in the longstanding partnership with Defence Science and Technology Group, which has spanned more than 30 years. He continued "Together, we have created a world-class research environment and infrastructure, where our researchers will be able to generate new knowledge, develop new technologies, and advance marine safety standards for the benefit of everyone in the sector, making a lasting impact not just in Tasmania, but across Australia and around the world."

University of Tasmania

Students dive into a world of maritime possibilities with AMC immersion program

Seventeen Tasmanian high school students swapped the classroom for the high seas late last year as part of the Australian Maritime College's (AMC) Maritime Immersion Program.

Now in its third year, the program offers students in Years 10 to 12 a rare opportunity to immerse themselves in maritime careers, experiencing everything from ship simulations to engineering challenges.

Over the three days, participants explored career paths in logistics, vessel operations, and marine engineering through hands-on activities designed to spark interest in the growing maritime industry.

The students put their new skills to the test at AMC's Newnham campus, tackling a logistics challenge before stepping aboard the college's advanced ship and tug simulators.

The event culminated in a power simulator demonstration and a presentation on AMC's pathways into further study, showcasing the range of opportunities available in the maritime industry.

Brendan Sinnamon, AMC's Student Recruitment Coordinator, said the program offers young Tasmanians invaluable exposure to an industry that plays a vital role in both the local economy and global trade. "The Maritime Immersion Program is about giving students a hands-on experience that not only highlights the importance of the maritime sector but also shows them the exciting career opportunities available

L-R: Professor Jonathan Binns (Defence Science & Technology Group), Dr Roberto Ojeda (AMC), Malcolm Wise AM (Principal, AMC), Jess Teesdale (Labor candidate for Bass), Lucy Barr (AMC student), Honourable Richard Marles MP, Professor Anthony Koutoulis (Deputy Vice-Chancellor, Research – UTAS), Professor Natalie Brown (Pro Vice-Chancellor, Launceston - UTAS)

in this field," Mr Sinnamon said.

In addition to its practical components, the program aims to inspire students to consider studying maritime science and engineering at the University of Tasmania, helping to ensure the state continues to produce skilled professionals ready to lead in this critical industry.

University of Tasmania

AMC Maritime Engineering Technical Forum and Reunion 2025 – Save The Dates!

Every five years, it is the aim of the AMC Centre for Maritime Engineering & Hydrodynamics (MEH) to host a Technical Forum and Reunion where all graduates of our maritime engineering degrees and related industry contacts/ collaborators are invited to attend. After this year's event, the next of these reunion gatherings at AMC will be held in 2030, which will coincide with AMC's 50th Anniversary.

The events and dates for 2025 are as follows:

Thursday 30th October 2025 (day):

Current final-year students Research Projects

Thursday 30th October 2025 (evening):Reunion Dinner

Friday 31st October 2025 (day): Technical Forum

All those who attend the annual presentations of Research Projects by current final-year BEng and Meng students on the Thursday are invited to be an external assessor (optional).

The Reunion Dinner on the Thursday evening is a golden opportunity to network, make new friends, catch up with former classmates and lecturers, and relive great memories. Partners are very welcome to attend. One of several features planned for the Reunion Dinner will be a slideshow of photographs of students (and staff) during their time as a student at AMC. When registering your interest to attend, please indicate if you are willing and able to provide some photos for this slideshow.

The Technical Forum on Friday 31st October 2025 will consist of a keynote speech, technical presentations, alumni achievements, and panel discussion sessions on relevant topics.

2025 marks AMC's 45th anniversary and the 35th year since the first students graduated from our Bachelor of Maritime Engineering program.

AMC are also keen to hear from any potential sponsors of these event/s.

We look forward to seeing you at AMC in late October 2025 and making these events very informative and enjoyable.

Gregor MacFarlane

AMSA Survey Matters

Survey Matters is AMSA's e-Newsletter relating to domestic commercial vessel (DCV) survey and is published approximately six times per year. You can request placement on the mailing list by emailing DCV Survey <dcvsurvey@amsa.gov.au>. The e-Newsletters are now also available online at https://www.amsa.gov.au/news-community/newsletters#collapseArea612

Items included in the December 2024 e-Newsletter included:

- Lightship Declarations and the Law
- New Surveyor Accreditation Guidance Manual Part 2 now available
- Ensuring Compliance of Fixed Fire Systems on Transitional Vessels: Type Approval vs Service certificates
- Electrical issues able to be identified by non-electrical periodic surveyors
- Timber boat surveying - with a focus on inspection of metallic fasteners
- Upcoming peak period for Accreditation renewals
- Float-free EPIRB maintenance: HRU and batteries
- New builds - Duties of builders, designers and surveyors
- Survey Matters suggestions

The articles on *Lightship Declarations and the Law and New Surveyor Accreditation Guidance Manual Part 2 now available* are reproduced below.

Items included in the March 2025 e-Newsletter included:

- High volume of applications expected for renewal of marine surveyor accreditation
- Certificate of survey (CoS) and certificate of operation (CoO) requirements for domestic commercial vessels (DCVs)
- Marine safety incident – Person overboard (due to bulwark gate failure)
- New Exemptions
- Safety recall notice (manual lifejacket inflators, flares)
- Proposed Generic Equivalent Solution (GES) to allow ISO 12215 for vessels up to 24m
- Bringing a new build domestic commercial vessel into Australia: Key requirements
- Summary of Audits 2023-24
- Reminder to submit suggestions on survey matters – such as on the surveyor accreditation scheme

Phil Helmore, updated Rob Gehling

DCV Lightship Declarations and the Law

The rationale underpinning the use of lightship declarations in Surveyor Accreditation Guidance Manual (SAGM) Section 4.9, for Class 1 vessels less than 12 m as well as Class 2, 3 and 4 vessels, has been raised several times in recent years. It has been argued that all vessels should perform a lightship check at 5 year intervals. While this may be attractive on a purely technical level there are other considerations at play.

While a lightship declaration might not have the same level of technical rigour as a lightship check, the latter was conservatively estimated to have a circa $50M impact on the DCV fleet collectively. This is a cost that was not previously imposed. An increase in the order of tens of millions would be exceptionally hard to justify without substantive incident data - particularly for vessels not previously subject to such an impost.

The requirement to perform a lightship survey has existed in the USL code since the early 1980s. USL Code Section 8A Annex A Section A.5 required Class 1 vessels to perform a lightweight survey at an interval not exceeding 5 years, though in practice this was rarely enacted. Such a requirement did not exist for Class 2 & 3 vessels at the time.

During the development of NSAMS/SAGM, a decision was made to permit declarations for small Class 1 vessels as well as Class 2 and 3 vessels. At first glance, this might appear to be inconsistent, but the reality is that such a risk-based approach is more onerous than that of comparable jurisdictions worldwide, or in Australia previously under the USL Code.

The declaration is an important process to assist private marine surveyors to identify changes to a vessel which they may not have previously surveyed. Other countries (or class societies for that matter) do not require any periodic lightship declaration or measurement for non-passenger vessels.

Vessels undergoing modification are now captured in the transitional vessel process in Marine Order 503, which acts to prevent the stability-related incidents of the past. Modifications which affect stability require that a lightship check be performed, and stability information updated as required. This is one of the primary reasons that lightship declarations are not accepted in alternate survey approvals when existing vessels undergo initial survey under Marine Order 503 Section 9.

Class 2 and 3 DCV's which have perished in the past are often cited as reasons for conducting a full lightship check in lieu of a declaration. In most cases these vessels had undergone a significant change and would likely have transitioned under the current arrangements of Marine Order 503 and had their stability re-assessed.

As an example, the Canadian fishing vessel Tyhawk perished in 2021. Tyhawk had added an additional deck. Were it a DCV, the addition of a deck is a change listed in item 7 (c) of Schedule 1 of Marine Order 503 and, under Section 9 (1)(c), would have required that the vessel undergo full initial survey including a lightship check and reassessment of stability.

AMSA requests that accredited surveyors explain the importance of the lightship declaration to an owner. In providing a false or misleading declaration, an owner would potentially contravene section 13 and/or section 18 (General Safety duties for an Owner and Master) of the National Law Act 2012. Furthermore, the Owner or Master risks contravening section 137.1 of the Criminal Code Act

1995, by giving false or misleading information, or omitting detail without which the information is misleading to a Commonwealth entity.

The message is that failing to declare pertinent changes (thus omitting to perform an act) is a serious offence. If the vessel were to later face a situation where a loss of stability leads to an incident, the connection between the false declaration and the incident would not be difficult to prove.

If the Owner or Master cannot be sure of any changes made to the vessel since the last inclining or practical stability test, or since the last Certificate of Survey was issued, they should engage the services of a competent person, such as a naval architect or an accredited surveyor. A lightship check and re-assessment of the stability against the relevant stability criteria may be subsequently required under SAGM 4.9.

The message to Owners or Masters in this case is, if you don't know, don't sign. To assist the AMS community in conveying this message, the AMSA 752 form will be altered to emphasise the legal importance of the declaration.

In summary, this is a risk-based solution. To require a lightship check at each renewal survey for every vessel would come at enormous expense to the industry and would vastly exceed standards applicable to the domestic fleet globally. The declaration system under SAGM 4.9 (6) serves as an additional safety benefit and correctly highlights the duties that apply to owners of domestic vessels to inform surveyors and the national regulator when making changes that affect vessel stability.

New DCV Surveyor Accreditation Guidance Manual Part 2 now available

AMSA has released the updated Surveyor Accreditation Guidance Manual Part 2 (SAGM) which came into effect on 1 Jan 2025, and updated survey forms. This manual outlines the standards and criteria required for the survey of domestic commercial vessels by Accredited Marine Surveyors and recognised organisations.

SAGM includes detailed technical, safety, and operational benchmarks established by AMSA, guiding surveyors in maintaining high standards of vessel safety and compliance.

1. *Increased owner control and flexibility with survey cycles*

Owners of high-survey-frequency vessels can now choose to conduct their out-of-water survey in either Year 2 or Year 3 of the survey cycle.

Owners of medium-survey-frequency vessels can choose to conduct their Year 3 survey either in or out of the water.

2.*Simplified dual 2/4 class certification for leisure-type vessels*

Class 2 vessels engaged in leisure-type activities (up to Area C waters) can now use the same CE certification for structural certification as Class 4 vessels, reducing regulatory burden for skippered Class 4 operations.

3.*Clearer reporting obligations for repair and damage surveys*

A definition has been added for "partial" surveys, along with a process described to allow reporting to AMSA.

4.*Use of own forms*

The SAGM now allows any AMS to use their own survey reporting forms, provided these forms contain sufficient detail.

5.*Easier entry survey for restricted C class vessels*

Design documentation requirements for restricted C class vessels have been made less burdensome.

6.*Significant detail added to the description of each survey type*

A significant level of increased detail has been added to the descriptions of each survey type within Table 2 and Table 6.

Surveyors and organisations are encouraged to review the manual and to ensure familiarity with the changes which came into effect on 1 January 2025.

Updated forms, which can be put into use immediately, can be accessed at https://www.amsa.gov.au/vessels-operators/domestic-commercial-vessels/forms-conducting-survey

Survey Matters, December 2024

Vale – Phillip Helmore OAM

It is with sadness that *The ANA* records the passing of Phillip John Helmore on 2 March 2025. Phil was born to John and Noela on 20 November 1947. The oldest of five children, Phil grew up in a loving, supportive, hard-working multigenerational home in Eden. Their beloved family home, *Dar El*, was built by Phil's great grandfather in the late-1890s and is still in the family.

In the fifties and sixties, Eden was a significant NSW fishing port. Phil's father, John, operated the slipway at Eden jointly owned by John, Charlie Peel, Captain David Williamson and Owen Allen. That facility is currently known as Eden Slipway Services. Phil and his brother, Charles, lived and breathed fishing boats, sailing and fishing.

Initially being taught at Eden Central School between 1953 and 1959, with his parents keen for Phil to receive a good ongoing education, he attended Canberra Grammar as a boarder between 1960 and 1964. Phil was one of four Canberra Grammar School boys of his year to receive a Gold Award under the Duke of Edinburgh youth-award scheme recognising the attainment of "a high level of achievement in enterprise, rescue training, public-service, craftsmanship and physical fitness". This was presented to him by Prince Philip at Government House in Sydney in 1965. Interestingly, for Phil's Duke of Edinburgh Silver Award:

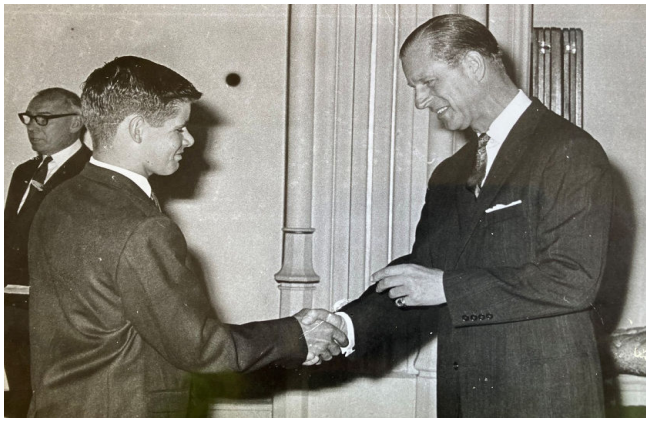
> "I built a full waterline model, with layers of alternating light and dark wood, of *Gretel*, Australia's first challenger for the *America's* Cup in 1962. I obtained the lines plan from Alan Payne, Gretel's designer and, with Dad's guidance, made the templates for each of the ten stations along the waterline, built the model in the workshop at *Dar El*, and wrote a history of the America's Cup."

Model of Gretel
(Courtesy Helen Wortham)

Phil loved his time at Canberra Grammar School and has coordinated class of '64 reunions every five years for the last 40 years.

Noel Riley recounts his first association with the Helmore family around this time. It was a Saturday morning in November 1962:

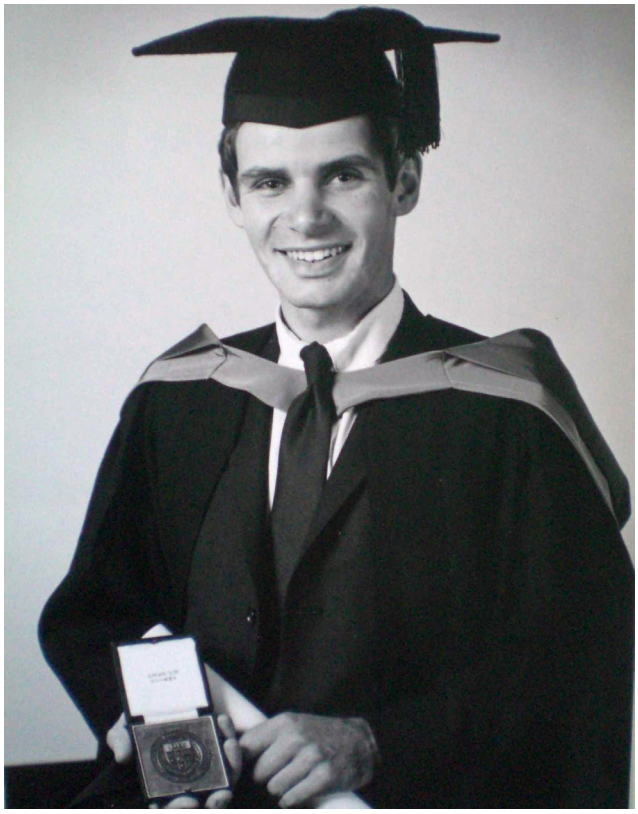
> "I was working for Alan Payne at the time and in the seventh year of my five-year diploma. I had two children, under three, so used to go to Alan's on the weekend to study. On that particular Saturday morning John Helmore, Phil's dad, came up from Eden to talk to Alan about the path his son should take to become a naval architect.
>
> Alan introduced me to John and I explained to him the two paths that were available to Phil. One was to do his time as a shipwright and then do the degree part time and the other was to take up a bonded cadetship with Navy Office. He chose the latter".



Phil being presented with the Gold Duke of Edinburgh Award awards by HRH Prince Philip, Duke of Edinburgh, at Government House in Sydney in 1965
(Courtesy Helen Wortham)

Phil commenced his BSc (Tech) Naval Architecture course at The University of New South Wales (UNSW) in 1965 under a cadetship with the then Department of Navy. This was to be completed during two years full time followed by three years part-time study. He spent the 1965 Christmas vacation working in the ship drawing office at Garden Island Dockyard (GID), returning the following vacation and continued for a further 15 months while completing his first part-time year, getting four afternoons off to attend university. He quickly developed a reputation for participating very intensely in his classes by challenging his lecturers on any technical point that was not perfectly clear. In 1968 a Bachelor of Engineering Naval Architecture course was introduced, which extended Years 3 and 4 to be full-time, so Phil changed over, ultimately gaining top marks. By the final year in 1969 he had caught up to some of the part-timers, including some who had been upgrading from diploma courses elsewhere, and those with outstanding subjects, resulting in the largest ever graduation to that time with six students. Phil received first class honours for this degree in 1970. He was also awarded the University Medal for his work.

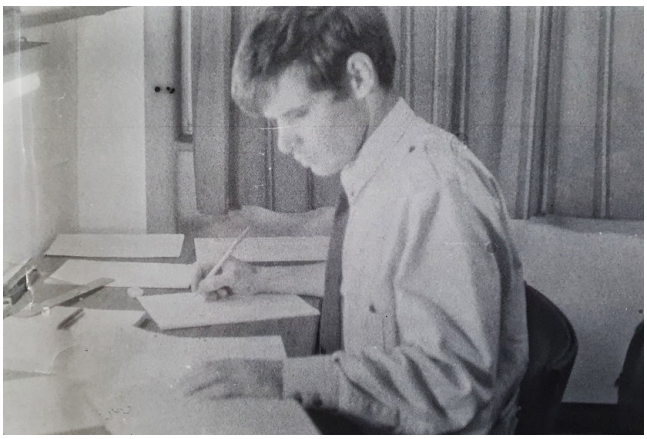
Richard Dunworth recalls meeting Phil when both were undergraduates at UNSW. Phil would baby-sit for Richard and Marilyn so they could have the occasional evening out. Phil was an early adopter of computers and software to aid in naval architectural analysis. There had been no use of computers in any subjects in the naval architecture course up until 1969, though Professor Tom Fink had arrived in 1968 and was introducing new course material including hydrodynamics by 1969. Phil also pricked Richard's interest in computing. When Richard was periodically unwell, Phil would check his code before punching the cards, submitting the deck for running and passing back the output (if any!) to



Bachelor of Engineering, Honours Class 1 and University Medal
(Courtesy Helen Wortham)

Richard. At the time, the naval architecture students were taken on excursions to ships and events of interest. While the other students were keeping out of the cold, wind or heat, Phil would be dashing around taking photographs of anything that caught his attention.

Phil continued straight on from his undergraduate degree to commence a Master of Engineering Science (Mechanical Engineering) from 1970, again at UNSW. His thesis had a naval architecture focus and he completed that degree in 1972.



Phil Helmore, studying at night at Basser College, 1969.
(Courtesy Helen Wortham)

While also studying, Phil spent three years working for the Naval Technical Services Annexe of the Department of Defence in North Sydney, followed in 1973 by five years working his way around Australia as a deckhand on various fishing vessels and coming ashore with Master Class V (Fishing) and Marine Engine Driver Grade II certificates. Phil's desire to spend time at sea on fishing vessels is thought to relate to his family ties to that industry but likely also as Phil wanted to balance the theory that he absorbed at UNSW with some practical experience before settling back into naval architecture.

Soon after settling in Sydney, Phil met Helen Wortham. Interestingly their first date was at RINA's annual dinner! They made their home in leafy South Turramurra which is where they raised their four children.

Between 1978 and 1991 Phil took on a naval architect role with Commercial Marine Design (CMD), where Phil once humbly noted that Noel Riley, as the principal of the company, "taught me all I know about propeller design". He was also heard to say that he and Noel were "joined at the hip". Noel Riley recounts their association in the lead-up to this role and Phil's time at CMD:

"I first met Phil in 1969 when he came to see me about certain aspects of his fishing boat design project.

Over the following years I used to ask John when was Phil coming ashore (he was fishing at the time) to put his theory into practice.

Phil phoned me from Western Australia in December 1977 to let me know that he was coming ashore but wanted to get his fishing boat Master's certificate. He estimated that this would take about a month.

I replied that it was OK with me and that I would see him at the end of January 1978.

Phil phoned me at the end of January, mentioned that he had passed his Master's certificate, but wanted to get his Engineer's certificate. He estimated that this would take about a month also.

I replied that it was OK with me and that I would see him at the end of February.

Phil phoned me at the end of February, mentioned that he had passed his Engineer's certificate, but wanted to get his Refrigeration Engineer's certificate.

He joined CMD in March 1978.

We worked together for fourteen years and during that time authored a number of papers on fishing boat stability and propeller design.

We kept in touch in the years following and met up again, professionally, when he was full time at UNSW and I was part-time.

His mix of academic achievements and practical experience -fishing for five years- was of great value to CMD. Our range of work was diverse during my tenure as consultant to Australian Development Assistance Bureau. In 1981, Phil, his father and I did a survey of a dredge in Western Samoa.

In 1988 he and I spent a month in Burma doing the condition survey of a fishing fleet that had been built in WA and gifted from the Commonwealth of Australia.

We had a mutual interest in propeller design and between us were responsible for in excess of 200 propeller designs. Before computers it used to take a week from when we first got out the slide rule on Monday morning until the

drawings went out the door on Friday afternoon. However, after getting our first Apple 2C computer in 1983 (48 KB of memory - expanded to 64 KB) and computer drafting we cut the time down to half a day".

Noel concludes by emphasising that Phil was, for many years, a professional colleague but was also a mate, and one that could be counted on.

As an industrial trainee working at Commercial Marine Design in the late 1980s, Jennifer Knox recounts:

"While we had been taught propeller design at UNSW, I first really learned, in a practical sense, about propeller design at CMD and I remember that Phil introduced me to the concept of 'entrained water' and the effect of the entrained water on the mass moment of inertia of the propeller"

Notwithstanding his full-time positions in industry, Phil maintained his close contact with UNSW by volunteering his time and expertise to assist the naval architecture students in using a computer program to perform calculations of ship hydrostatics (buoyancy, stability of a ship and similar). In the early years of his career this was still a very novel concept, because all calculations had previously been done by hand. Phil provided this service to the university as a professional gesture of good will and without charge. He would frequently arrive at the University in the evening and work on the UNSW computer system until late at night.

Following his time at CMD, Phil took up a naval architect surveyor role within the Maritime Services Board of NSW (MSB) between 1991 and 1993. Mori Flapan worked with Phil at the MSB Commercial Vessels Branch during this time and recalls him as:

"a practical, methodical and knowledgeable assessor, well respected by those both, within the branch, and clients submitting plans and stability booklets".

Phil was missed within the MSB after he left to join UNSW. Mori subsequently worked with Phil again on the inclining tests of the Sydney Heritage Fleet's tugs, *Bronzewing* and *Currawong*, that were used to produce stability booklets for their subsequent service with that organisation. These inclining tests became an annual practical exercise for UNSW naval architecture students. Also they were of great assistance to the Heritage Fleet.

When UNSW was expanding its Naval Architecture activities at Kensington, Phil accepted the offer of a position as Senior Lecturer in the School of Mechanical and Manufacturing Engineering in 1993.

Jonathan Binns has a sharp recollection of that time:

"I first met Phil in 1993 in the same way many did afterwards as the first face of Naval Architecture, after my years of searching for exactly what is a naval architect, because it sounds like me. Neat, but casual clothes (cable knit jumper in the winter), thick head of hair and equally thick black beard, he was then perhaps what you might think should be the face of naval architecture, but he was then and always will be to us, so much more than that also. As a teacher he is something to strive for in terms of making sense. As a champion of the profession he is a wonderful example of carefully considered hard work. I would not be

Phil supervising reading of draft marks on Currawong at The Sydney Heritage Fleet with UNSW Canberra naval architecture students, April 2022.
(Courtesy David Lyons)

me without Phil. I know of many others who also would lack essence without the influence of Phil".

Lawry Doctors recounts his time with Phil at UNSW:

"Phillip proved that he was a wonderful asset to the university. He became one of the most conscientious academics in the School. He very quickly turned into one of the mainstays of the Naval Architecture Program. On occasion, he would take on some of the management activities that should have been the duties of the convenor of the program. He would politely apologise for doing this; however, his assistance was always greatly appreciated.

He quickly developed a reputation for being an outstanding senior lecturer. As a mark of respect for his teaching efforts, Phil received the Vice-Chancellor's Award for Teaching Excellence at UNSW in 2002. At that time, this award was only given to a maximum of 12 academics; often fewer than 12 awards were given. The magnitude of this achievement can be judged from the fact that the number of academics at UNSW at that time was of the order of 2000, meaning that the recipient had to be in the top one-half percent.

Some of his particularly noteworthy teaching achievements at UNSW include the introduction of the course "Naval Architecture Practice" into the degree program. This involved visiting industry partners and conducting technical experiments on full-size ships. This course was run on a high-level basis; after the appropriate industrial visit, the students were required to submit a professional engineering report on the visit with a detailed account of what they had learned from the activity. This feature is still used today in the naval architecture program at UNSW Canberra.

It was no doubt a consequence of Phillip's reputation in teaching that he was appointed to the important position of Director of Undergraduate Teaching at UNSW in 2002. He performed this task in a most able fashion through to 2015.

Phil was also an active member of the Faculty of

Engineering Program Committee at UNSW. He impressed the other participants with his commitment to students and to quality education, as well as the deep technical knowledge and attention to detail that is so characteristic of engineering colleagues".

Craig Boulton was a part-time lecturer at UNSW for 18 years and recounts:

"it was easy to see how all students of every year revered his knowledge and appreciated the way he taught the naval architecture course. Like many of us, we regarded Phil as a friend…"

Phil became the Naval Architecture Stream Coordinator at UNSW in 2005. He held this position until 2015. He had started to plan for retirement in 2014, actively seeking out a successor with David Lyons taking over the coordinator role in 2016. Thereafter, Phil remained as a Senior Lecturer until the controversial closure of course in 2019. His final year of teaching at Kensington was 2018, with a retirement celebration that December thereafter taking his well-earned long-service leave from UNSW into the following year.

No inclining experiment of the Currawong would be complete without a break in the Sydney Heritage Fleet tea room to enjoy "Helen's scones"! (Courtesy David Lyons)

In recounting Phil's approach to tasks, Martin Renilson noted:

"When Phil reviewed a paper for me for the International Journal of Small Craft Technology he was extremely thorough. Not only that, but he was always willing to do a review for me, and I could rely on him not only to do the review, but to meet the deadline for the review. His comments were always very insightful".

Richard Dunworth greatly appreciated the support and encouragement Phil provided in the preparation of technical papers, even into 'retirement'.

Levi Catton sums up the sentiment of our wider community nicely:

"I think perhaps more than any other individual, Phil has been responsible for the current Australian naval architecture community, by having so much influence on so many who passed through his classroom, or were impacted in some way by his work. I only knew Phil briefly but his impact on my career has been significant, because of all the secondary effects of his work and the shaping of the people he taught and worked with, who have gone on to shape me and many others. A great loss".

With the re-establishment of the UNSW Naval Architecture program in Canberra, Phil lectured part time on applied propeller design in 2022 and 2023 at the invitation of Warren Smith and David Lyons. He attended again last year in a voluntary capacity. David Lyons would collect him from the Murrays bus depot at the Jolimont Centre.

In 2023 Warren Smith and David Lyons travelled Turramurra to collect Phil's UNSW notes. They were joined by Lawry and Helen Doctors as well as "honorary naval architect" Diane Augee. (Courtesy Helen Wortham)

In retirement Phil and Helen maintained an active outdoor life: bushwalking, cycling and kayaking. They regularly visited their children and family in Europe and went on three Camino de Santiago pilgrimages in Spain and Portugal. Phil continued to enjoy riding and maintaining his beloved BMW motorbike having accumulated over 400,000 km including his daily commute to work over many years.

Phil was an active and longstanding member of RINA, joining in 1974 and thereafter becoming MRINA. He had been a Member of the Australian Division Council between 1994 and 2008 including as Vice-President between 1997 and 1998. Following revision of the operation of the Australian Division, Phil became an inaugural member of the NSW Section Committee from 1998. With Phil Hercus as Chairperson, he served as the Section's first Deputy Chairperson between 1998 and 2000, then as Chairperson between 2003 and 2007, followed once again as Vice-Chairperson between 2018 and 2023. Never idle, he served as Technical Meeting Program Coordinator between 2007 and 2023 and since 2024 had been the section Assistant Secretary.

As a fellow member of the Australian Division Council and NSW Section committee with Phil for many years, Craig Boulton recounts his contribution to the NSW Section:

"I have known Phil for over 40 years and our fathers knew each other from the 1960s. I can say the NSW committee would not have been as strong without Phil's skill of organising all the speakers and the actual running of the committee".

He also served on a number of technical committees including as a member of the Lloyd's Register Australian Technical Committee from about 2004 through to 2021 and also on their Australian Advisory Committee. Graham Taylor recounts Phil's involvement in the Technical Committee:

"As a member he would review and comment on proposed rule changes received from London once or twice a year. Although the changes often extended to several hundred pages Phil always requested a paper copy because he said, "he could think better in hard copy", so he would make pencil notes all over the pages and then pulled it together into his final comments.

He had a reputation for reviewing the proposed changes in minute detail, providing technical input and also correcting the grammar and punctuation for the benefit of the staff in

London who seemed to have problems with the 'Queen's English'."

While in an overseas role, Martin Renilson recalls a Lloyd's Register representative complimenting how thorough the rules review by the Australian Technical Committee had been.

Phil likewise contributed comment to the National Marine Safety Committee's work creating the National Standard for Commercial Vessels, and always encouraged the presentation of papers during its development at RINA meetings to keep the profession in the loop and encourage their participation in public comment.

His contribution to the Institution and Division though the encouragement he gave to students at UNSW to become members of RINA has undoubtedly also helped the organisation in its continued renewal and growth.

Phil had also been a longstanding Member of the Society of Naval Architects and Marine Engineers (SNAME), joining as a student member in 1968 and retaining membership until his death. A valued contribution that many of his students would recall is the comprehensive "Suggested Errata" sheets Phil had prepared for the 1988 three-volume edition of *Principles of Naval Architecture (PNA)* by SNAME which were provided to each UNSW student, as PNA was a suggested reference book at UNSW. Phil likely started identifying errata as a student since receiving his 1960's edition of PNA.

Phil will be very much remembered for his role as Technical Editor of the journal, *The ANA*. Following the inspired publication of the first four issues of *The ANA* from 1997 by WA Section members, Phil took on this task with John Jeremy as Editor from the fifth issue, in July 1998, and continued this arduous and time-demanding activity over 27 years until his untimely passing in 2025.

The ANA serves as the official journal of the Australian Division of RINA. Under the stewardship of John and Phil, *The ANA* has evolved from a newsletter to a journal, expanded from A5 format to A4 and from black and white to full-colour and increased its graphic content. In expanding its coverage to reflect the full Australian maritime engineering industry, its length has progressively increased to around 60 pages. It is a most interesting, detailed and varied journal which complements the official international journal of RINA, *The Naval Architect*, produced in London.

Phil split responsibility for preparation of the various columns of *The ANA* with John and invariably he also provided the comprehensive accounts of NSW Section meetings. Every issue also contains additional specialist technical papers. Since 1998 it has consistently been produced quarterly and requires a considerable investment of skill, effort and time. In the lead up to each issue, Phil would actively seek input from across the Division extending to encouraging his UNSW students to craft Letters to the Editor. It has become an important element in uniting the widely-spread membership of the naval architecture community. Various Australian members have said it is the best part of being a RINA member. Phil himself would joke with contributors/readers about *The ANA* being "your favourite journal", but we are sure he really felt this as we in the local industry do. Phil remained active preparing material for the current issue until shortly prior to his passing. Phil's greatest contribution to the Division and to RINA generally would indeed be *The ANA*. Its success will be a fitting legacy to his work in partnership with John.

Phil was known and admired by everyone in the maritime field in Australia. For all his work in furthering the Institution and our profession, Phil was most deservedly awarded an Order of Australia in the General Division on Australia Day in 2025. Fortunately, he survived long enough so that he could be informed of this most significant achievement and acknowledgement by his peers. It was often remarked that, "when they made Phil, they threw away the mould". Phil is irreplaceable.

Phil had been fighting mesothelioma for about two years and maintained a positive spirit notwithstanding the difficulty in treating this form of cancer. He died on Sunday, March 2, 2025. He leaves behind his wife Helen Wortham and three children: Kieran, Olivia and Declan. His daughter Rachael tragically predeceased him.

A private funeral was held for Phil in Canberra on 7 March 2025 and a public memorial is planned in Sydney thereafter.

Phil will be sorely missed by his many friends and colleagues in the naval architecture community in Australia and beyond. He personified the Institution's objectives. We have lost a true pillar of our community and more importantly a wonderful and kind person. Our condolences to Phil's wife, Helen Wortham, and his extended family.

Phil at his retirement gathering at UNSW on 7 December 2018 with his gift, a coffee table incorporating a propeller, made by David Lyons and Richard Cawse. (Courtesy David Lyons)

The plaque reads:

"Of all the things that man has made, none is so full of interest and charm, none possesses so distinct a life and character of its own, as a ship" (Henry van Dyke's book, Ships and Havens)

Presented to Phil Helmore

In gratitude for a lifetime of service to UNSW and the profession of Naval Architecture

Lawry Doctors, Noel Riley, Helen Wortham and Martin Grimm with contributions from too many others to list, many of whom are quoted

Vale - Alan Taylor OAM

It is with sadness that *The ANA* records the passing of Alan Henry Taylor OAM on 5 November 2024.

Alan was born on 1 April 1940 in Lithgow, NSW, to parents Arthur Gerard (Mick) and Sarah Iris (Sadie) Taylor. Alan had an older brother, Michael, and a younger brother, Stephen. The family moved from Lithgow to Albury in 1942 and then, in 1954, to Newcastle. Alan completed his Leaving Certificate in 1956 at Saint Francis Xavier, Hamilton and immediately commenced an apprenticeship at BHP Newcastle as a Fitter and Turner—Marine Engineer Trainee. He received his Marine Engineering Technology Certificate in 1960 from Newcastle Technical College and completed his apprenticeship in February 1961.

On completion of his apprenticeship, he began a seagoing career with BHP lasting till 1964 and, during this period, he sailed in the capacity of 7th engineer to 2nd Engineer on steam ships.

He resigned from BHP in 1964 to obtain overseas experience, and joined the Indochina Steam Navigation Co. whose General Managers were Jardine Matheson in Hong Kong. Here he worked as a ship's Engineer Officer, Assistant Superintendent Engineer, Superintendent Engineer, Engineer and Technical Superintendent and Assistant to the Operations Manager. During this period he sailed in the capacity of 3rd Engineer, 2nd Engineer and Chief Engineer on various steam- and diesel-powered vessels. He was promoted ashore as the Assistant Engineer Superintendent where his main function was to superintend a fleet of 18 ships.

He resigned from Jardine Matheson in November 1974 and joined the Indochina Steam Navigation Co. in Hong Kong as Engineer and Technical Superintendent. He was promoted to the operations Department as an Assistant to the Operations Manager and, at the same time, was Superintendent Engineer and Operations Manager for special project ships under management agreements with Jardine Matheson, US Lines and other outside companies.

He resigned from ISNC in 1974 and took up a position as Assistant Superintendent Engineer with BHP Transport in Newcastle. His career path then proceeded to Superintendent Engineer, Technical Superintendent and Technical Manager. In 1985 he was seconded to Australian LNG Shipping Operation Company (ALSOC) as part of the North West LNG Project as Technical Superintendent and subsequently was appointed as the Technical Manager where he led a technical team of over 40 engineers and marine personal completing the on-going design and development of the seven LNG carriers which, to this day, carry export cargoes from the north-west shelf to Japan. In 1989 he signed for and took delivery of the first ship, NW Sanderling (all the vessels are named after birds which migrate between Australia and Japan), and attended the first discharge of 120 000 m3 of LNG in Japan under a 19 year contract. At the completion of the first discharge in Japan he returned to BHP Transport as Manager Project Development, with subsequent appointments as Environmental Manager, Manager Crisis and Emergency Systems (Business Continuity Management) until his retirement.

Other Australian ships which Alan had direct involvement in the design and construction of include Matthew Flinders, James Cook, Iron Shortland, Iron Sturt, Iron Prince, Iron Whyalla, Iron Spencer, Iron Newcastle, Iron Kembla, Iron Pacific, Iron Gippsland and Iron Chieftain. When built in 1986, Iron Pacific was the largest twin-engined bulk carrier in the world at 231 850 dwt.

Alan's CV lists a total of 45 BHP vessels on which he sailed, worked on for repairs or dry dockings, superintended the design, or represented the company during construction.

In his time at BHP he was exposed to asbestos, carcinogenic materials and chemicals, the processing of steel, nickel, chrome and coal gas, and carcinogenic gases such as diesel particulate matter, all of which increase the risk of lung cancer!

In 2000 Alan resigned from BHP Transport and set up his own consultancy, Alan H. Taylor and Associates in Melbourne until 2004, and then moved to Sydney. He consulted in shipping, environment, crisis management, and risk profiling, until 2024.

He has acted as a technical advisor to the Australian Delegation at the International Maritime Organization, participating there for over nine years in the writing of international regulations for ships specifically relating to issues such as:

- Enhanced Survey Requirements of Tankers and Bulkers,
- Revision of regulation 13F & 13G of Annex I of MARPOL 73/78 relating to double hull tankers and alternate designs and the phasing out of existing tankers,
- Oxides of Sulphur and Nitrogen, VOX and the Sulphur content of Fuel Oils and other regulations relating to the new Annex VI to MARPOL 73/78 Prevention of Air Pollution from Ships", and
- The proposed new Annex to MARPOL 73/78 Prevention of the Introduction of Unwanted Aquatic Organisms and Pathogens from Ships' Ballast Water and Sediment Discharges (Ballast Water Management Convention).

He was also extensively involved in Tributyl Tin Antifouling Paint and Ship Recycling issues as well as Green House Gases and Ozone-depleting substances.

Alan was awarded the Medal of the Order of Australia (OAM) in the Queen's Birthday Honours List of June 2002. The citation reads "For service to maritime engineering, and the protection of the marine environment." He was invested by John Landy AC MBE, Governor of Victoria, at Government House, Melbourne, in May 2003.

Alan was an Honorary Fellow of the Institute of Marine Engineers (IMarEST) and a Fellow of Royal Institute of Naval Architects (RINA), and served both institutions. He was a continuous Committee Member of branches of the IMarEST in Hong Kong, Newcastle, Melbourne and Sydney for the last 48 years, including Chairman of the Victoria/Tasmanian Branch, Treasurer of the Hong Kong and Newcastle Branches, and was the first non-UK-based President of IMarEST. He was Chair of RINA NSW Section for 2013–16 and on the SMIX Bash Committee for 2017–24, and a Member of Engineers

Australia. He was also Chair of the Australian Technical Committee of Lloyd's Register for many years.

Alan joined the Hash House Harriers during his time in Hong Kong and, on his return to Australia, was instrumental in the set up of the Hash in Newcastle, and becoming one of the founding members. He had a lifelong interest in aircraft and was a devotee of Porsche cars, owning several and becoming a leading light in the Porsche car club.

Alan married Margaret Fernance in 1967, and they had three children, Kristina and then twins David and Simon. He was a dedicated family man, delighting first in their children, and then the grandchildren.

The family held a private cremation in November 2024, and a memorial was held on 16 January 2025 at the Customs House Hotel in Newcastle, and the place was packed with friends, colleagues, naval architects, marine engineers, and even Porsche car club members!

Alan is survived by younger brother Stephen, daughter Kristina, sons David and Simon, and grandchildren Joshua and Alicia.

Kristina Green

Graham Taylor

Rob Gehling

Phil Helmore

Alan Taylor OAM
(Photo courtesy Kristina Green)

Vale – Prabhat Pal

It is with sadness that *The ANA* records the passing of Dr Prabhat Kumar Pal on 5 February 2025 in Perth, Western Australia.

Prabhat was born in Manickpore, a village on the banks of river Hooghly near Kolkata, West Bengal, India on 1 March 1930. Coming from humble beginnings, he was one of 15 siblings. He was the first in his family to gain a higher level of education.

He obtained his BME (Mechanical Engineering) from The Jadavpur University in 1951 with his initial career commencing in Mechanical Engineering and he joined Calcutta Port Commissioners at their Garden Reach Workshops as a trainee apprentice to gain industry experience. Here, he learnt the basic hands-on approach to repairing ships' machinery and equipment with the bare minimum tools and parts.

In 1954 he commenced as a Junior Research Assistant at the Indian Institute of Technology (IIT), Kharagpur in the newly formed Department of Naval Architecture and Marine Engineering. He later taught various subjects and topics from Ship Design, Machinery etc ultimately rising to becoming a professor.

At the time Prabhat was involved in establishing an indigenous ship model testing facility. In that period constructing towing tank test models using wax was common. Realisation that such wax test models wouldn't be successful when subject to the heat encountered in the test facility in India, he went about developing a more suitable alternative method of model construction.

At IIT Kharagpur he studied the Naval Architecture subjects with the third batch of students to be taught this new course and graduated with a Bachelor of Technology (Naval Architecture) in 1959. As a prerequisite to the course, he was offered a scholarship to undertake practical training for a year in a shipyard in Hamburg under an Indo-German Industrial Training scheme. His trip to Hamburg, Germany and his time at the shipyard led to his life-long love of the country, their culture and the German language.

IIT Kharagpur is a residential college being 120 kilometres away from Kolkata, where Staff and students lived. While Prabhat had his academic life at the Department, the campus life led him to pursue his social, cultural aspirations and hobbies such as gardening, angling, playing bridge, and health and fitness activities. These led him to close bonding with his peers and students earning mutual respect and admiration throughout his life and career.

After spending many weekend hours on trains between Kharagpur to Kolkata to study computing for his PhD research, as well as travel to IIT Madras to meet his supervisor, Professor S.D. Nigam, Prabhat was awarded his PhD in 1983 on "Optimum Design of Trawlers" from the Department of Naval Architecture, Indian Institute of Technology Kharagpur in India.

As Farrokh Mistree was transitioning from teaching at UNSW to the University of Houston, he was tasked by Owen Hughes and Tom Fink to interview Prabhat for a position as a Senior Lecturer at UNSW Kensington. Prabhat was hired as a result. At the age of 51, with his wife and sons, he moved from India to start their new life in Sydney. Prabhat arrived at UNSW in mid-1981, lecturing in Ship Design within hours of touchdown in Sydney!

Prabhat Kumar Pal
(Courtesy Pal family)

As one of Prabhat's first UNSW Year 3 Naval Architecture students Rob Dunbar recounts that, along with Mark Smallwood, Steve Quigley and Malcolm Rowe, over that year and the next they formed a close bond with Prabhat:

> "We were a cheeky bunch of students and it may have been a bit of a shock to him at first, but it was not long before a strong mutual respect led to a positive and a fun experience of us all working together, and importantly learning from your PK's experience… Our different personalities presented interesting scenarios for PK and he was always gracious and supportive in his dealings with us. An example being Mark's habit of coming to Uni in bare feet, with Prabhat's kind comments that he enjoyed him attending Uni bare foot as he reckoned Mark was connecting to the earth, he was at one with the earth.
>
> Another strong memory is of us all being invited to dinner at PK's place after we finished our final year – such a wonderful thing to do, such gracious company and a beautiful traditional Indian meal cooked by Anjali.
>
> PK was a great lecturer who became a good friend to us students, a teacher who was deeply committed to the best outcomes in so many ways, for his students".

At UNSW, Prabhat lectured primarily in the field of ship design and likewise published in that field. Subjects he taught student included "Principles of Ship Design" and "Ship Management Economics" and he supervised the student ship design project. At the same time. he made a name for himself with his research in optimisation.

He undertook a sabbatical at the University of Houston, USA with Farrokh Mistree during the period 1986-87. Prabhat had earlier been Farrokh's undergraduate thesis advisor at IIT Kharagpur. He returned to lecturing at UNSW in 1988.

Prabhat's research interests were in the field of Computer-aided Ship Design, Shipping Economics and Concurrent Engineering in Ship Design. Prabhat attended and presented at various conferences around the world on these subjects.

During the 1990's, as a member of the Australian Maritime Engineering Co-operative Research Centre (AMECRC) Sydney Node at UNSW, Prabhat was instrumental in organising several UNSW Sydney workshops involving interstate and international guest speakers including "Seakeeping of High Speed Ships", "Design of High Speed Marine Vehicles", "Structural Design & Analysis of Composite boat hulls".

Following his years of full time lecturing at UNSW, Prabhat became an Honorary Visiting Fellow which he continued until 2001. He fully retired from UNSW in November 2001 and soon afterwards, Prabhat and Anjali moved to Perth to be closer to their grandchildren.

Once in WA, Prabhat forged and continued his engagement with Curtin University until 2021 as a Honorary Visiting Academic where he continued his interest in developing software and ultimately converting his past work from FORTRAN to Matlab. He enjoyed being amongst the academics and students until he was unable to attend due to his failing health.

Prabhat was a Fellow of The Royal Institution of Naval Architects, a Fellow of The Institution of Engineers, Australia, a Member of the Schiffbautechnische Gesellschaft, eV, Germany and a Member of the Institution of Naval Architects in India.

Naval Architecture graduates from IIT Kharagpur will remember Prof. Pal as a jovial, gregarious and good-natured personality. Former UNSW students will also recall his photocopied hand written lecture notes with their neat running-writing. Santi Pal recounts that a love of PK's life was writing instruments. He firmly believed that handwriting should only be done with a fountain pen! If pens were human, they would have been his soulmates.

Prabhat passed away at an age of 94. A memorial service for P.K. was held at Karrakatta Cemetery Brown Chapel on 18 February 2025. He is survived by his wife Anjali and their sons Sunny and Santi Pal and their grandchildren.

Lawry Doctors, Rob Dunbar, Martin Grimm, Phil Helmore, David Lyons,Pal family, Warren Smith

With UNSW 3rd and 4th year Naval Architecture students on a visit to a RoRo ship and containership in Sydney during 1988. Left to Right: Bill Greenwood, Prabhat Pal, Geoff Wilhelm, Don Gillies, Tim Speer, Horden Wiltshire, Murray Makin, Peter Samarzia, Peter Gawan-Taylor, Mark Williamson, Peter Goodin.
(Courtesy Martin Grimm)

Membership

Australian Division Council

The Council of the Australian Division of RINA met on the afternoon of Wednesday 11th December 2024 by zoom-conference under the chairmanship of our President, Prof Jonathan Binns in Melbourne with links to Gold Coast, Sydney, Canberra, Melbourne, Hobart, Launceston, Adelaide and Perth. Prof Martin Renilson, a member of the Institution's Council and nominee as Pacific Region Vice-President attended as an observer.

Among the items discussed were:

Improvement Working Group

The President reported that the working group had held a successful workshop in Melbourne on 30th November. He would present its' report to Council early in the new year following finalisation by participants.

Career Presentation to Secondary Students

The Secretary reported on a successful presentation in November to year 11 students at Hawker College in ACT. This would be followed-up with presentations to other secondary colleges.

Australian Division Handbook

The drafting of this plain-English guide to the operation of the Division and Sections is being held back pending further development on the Institution's corresponding document which deals primarily with Branch rather than Division operations.

Succession Planning

Recognising the need to make provision for the retirement of vital personnel in the coming months and beyond, Council undertook to expedite its search for volunteers for these positions which have been instrumental to the smooth and successful running of the Division. In order of highest priority these positions include ANA Editor, ANA Technical Editor, IMC Organising Committee Chair, Division Secretary, Division Treasurer and IMC Program Committee Chair. The President is actively seeking volunteers for all of these positions but anyone interested should contact either him or the Secretary.

General Purpose Frigates

Council noted that a letter had been sent to the Deputy Prime Minister pointing to the need to consider Australian buildability and maintainability in the selection of the successful design for this project**.**

Developing Careers Initiative

Council briefly discussed the email on this subject which had been sent by RINA HQ to all members. Whilst the arrangements put in place are currently focused on UK members, Council agreed to watch for further developments.

UTas-AMC CMEH Industry Advisory Committee

Council appointed Dr Rozetta Payne to succeed Jim Black as its representative on the Committee.

Recognition of Accredited Australian Engineering Courses

Council noted that an impasse seemed to have developed between the UK Engineering Council and Engineers Australia. It resolved to take this matter up through the Joint Board which is due to meet early in the new year but in the meantime the mutual recognition provisions of the EA-RINA Agreement of Cooperation had ceased operating particularly for post 2019 graduates. For the time being the Extended Professional Review process was to be applied to these graduates.

Walter Atkinson Award 2024

Council endorsed the assessment panel's recommendation that the Award be made to Dr Ken Fisher for his paper Limited Meaning: Misunderstanding the Role of Class Org published in the February 2024 issue of this journal. The award was subsequently presented virtually to Dr Fisher at the NSW Section's February 2025 technical meeting at which the paper was the subject of a discussion panel.

Division Council also met on Monday 17th March 2025 under similar arrangements as outlined above for the December meeting.

Issues discussed included:

Election/Appointment of Council Members for 2025-27

Council noted that the members who responded to the emailed call for nominees in January, namely Sammar Abbas, Andy Harris and Bruce McRae had been declared elected. Subsequent to this declaration, Ken Goh, Martin Grimm, Martin Renilson and Hossein Enshaei had indicated interest in appointment to the remaining positions and were duly appointed by Council. Those members who were retiring from Council, whose terms would expire after the AGM the following day, were thanked for their service.

AMSA DCV Lightship verification

Council agreed that the response received from AMSA did not satisfactorily respond to the Division's letter on this subject and should be followed-up.

Report of Improvement Workshop

Council considered the report of the Workshop, of which many of the recommendations covered measures outside the control of the Division. Accordingly the report will be forwarded to RINA HQ. Some of the ideas presented were not adequately supported but improvements in engagement with younger members, such as mentoring, are to be taken up with Sections. The Improvement Working Group is to consider further actions to implement recommendations.

Succession Planning

It was recognised that the urgency of action on this matter had become much more urgent with the passing of Phil Helmore and the health-enforced retirement of John Jeremy. It was clear that the tasks involved in producing *The ANA* could no longer be done by the Editor and Technical Editor but would need to be divided up among a number of volunteers. Task descriptions would be developed. As a stop-gap, Rob Gehling and Martin Grimm are working on completion of the current issue of *The ANA* but, as indicated in the editorial of this issue, the future of our journal depends on those who might volunteer. Adrian Broadbent has been asked to assume the chair of the IMC Organising Committee for the immediate future. Volunteers are being sought for all the roles listed under the December Council meeting.

International Maritime Conference (IMC) November 2025

Council noted that preparations for the IMC were proceeding smoothly and that the Call for Papers was currently open.

Financial Report

The audit report to be considered by the Division AGM the following day was tabled. It indicated that the Division had achieved good returns from its investment strategy which is to continue for the next year.

Next Meeting

Tentatively scheduled for 17th June 2025.

The Division's Annual General Meeting was held relatively uneventfully on Tuesday 18th March. A resolution of appreciation was passed unanimously for Phil Helmore's and John Jeremy's work in producing *The ANA* since 1998.

Minutes of the December Council meeting are available on request, while those of the latest meeting and the AGM are still being drafted and will be available in due course.

Rob Gehling AO

Secretary

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Free Papers for Members

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Phil Helmore

Halvorsen Centenary Celebrations – Sydney January / February 2025

The Australian National Maritime Museum in Sydney held a Halvorsen Centenary Flotilla Display in January 2025 to celebrate 100 years since Lars Halvorsen and his family of boatbuilders and sailors immigrated from Norway to Australia, initiating the love of a boating holiday to non-boating Australians.

The Flotilla, which was only one of a number of commemorative events for the Centenary, comprised a remarkable display of 16 Halvorsen vessels at the ANMM Heritage Pontoon, highlighting the beauty and exceptional design skills and craftsmanship of the extended Halvorsen family. Later in February, a fleet of 35 Halvorsen cruisers participated in the Centenary Parade of Boats from Bobbin Head to Cottage Point on the Cowan Creek, Broken Bay.

Lars Halvorsen and his family came to Sydney in 1924–25 from Arendal in Norway following a stay of two years in South Africa. Lars' skills were in boat building and his aim was to establish a new business building boats firstly in Capetown and then in Sydney.

Due to the uninsured total loss of a trading sailing vessel which he had built, and of which he was a part owner, Lars had lost all his money, and his reputation in Norway had been damaged. At the age of 35 Lars left Norway to seek a new life for himself and his family of wife and 7 children.

He set up in Capetown as a boat builder and later entered a boatbuilding business partnership. He designed and built several yachts, based on Norwegian design principles, which were much acclaimed by the local yachting fraternity in the Royal Capetown Yacht Club.

However, despite early success neither Lars nor his wife Bergithe found the life in Capetown really suited them, nor had prospects to develop a big enough boat-building business in which their five sons might participate.

Having sold his share of the business in Capetown, Lars travelled by ship to Sydney to investigate opportunities to establish a boat building business, arriving in December 1924. His eldest son Harald, aged only 14, also arrived in December 1924 having served as Cabin Boy crew on the Gustav Erikson sailing ship Mozart which landed him in Adelaide, followed by a train trip to meet his father in Sydney on Christmas Day.

With supportive local connections Lars quickly obtained a contract to build his first Australian yacht, Sirius, and rented a boatshed in Drummoyne. Lars designed the yacht on which he and his young son Harald immediately started work. Having established a source of income, Lars sent for Bergithe and the remaining six children who arrived by ship in Sydney on 16 February 1925.

The rest of the Halvorsen family story has become an Australian legend of boat-building success. The business survived the Depression and by the mid-1930s four sons, Harald, Carl, Bjarne and Magnus, were working in the family boat-building business with their father while the youngest son Trygve, born in 1920, was still at school.

"*Iolanthe*" 36' Bridge Deck Motor Cruiser designed and built by L. Halvorsen for Mr. A.G Wilson and completed in June 1933. Photo taken in Macquarie Street on her way to the Sydney Royal Easter Show.

A major setback for the family occurred when Lars contracted osteomyelitis and died at the young age of only 49 in 1936. By this time all his sons were working in the boat building business. The five sons carried on the business in what became the famous brand name of "Lars Halvorsen Sons".

During the second World War the Halvorsen boatyard, then operating five slipways at Ryde on the Parramatta River, built over 250 vessels for the American and Australian military forces, including tenders and barges plus the fast 38 foot air-sea rescue boats, the 62 foot supply boats and the famous 112 foot Fairmile high speed rescue boats.

ML 819 was one of eleven Fairmile motor launches built by Halvorsens

With the end of the War in 1945 the government orders abruptly stopped and there was little money around for pleasure boats to be built to order. To maintain their business and keep their workforce of shipwrights intact the brothers decided on a new business model to build pleasure cruisers to operate in a hire fleet, and in late 1945 acquired the boatshed at Bobbin Head to be the hire-fleet base. This became the centre for the renowned Halvorsen hire fleet which at its largest included more than 60 cruisers for hire, along with many small rowing and fishing boats for day hire. The first cruiser

built specifically for the hire fleet was a 25 footer launched in early 1946 and quickly followed by several others.

Holidays on Halvorsen cruisers on Broken Bay and the Hawksbury River became very popular in the 1950s through to the 1980s. Many more boats, and of larger size, were added as the fleet and so the business grew. The Ryde yard also continued to custom build cruisers and working boats to order for local owners, and several of the larger cruisers were exported to USA.

Lars Halvorsen Sons Pty Ltd Ryde 1954

In the late 1940s and through to the 1960s, the Halvorsen yard built numerous sailing yachts, although mainly for the two youngest Halvorsen brothers Magnus and Trygve. These yachts included *Enterprise* 1945, *Saga* 1946, *Peer Gynt* 1947, *Solveig* 1950, *Anitra V* 1956, *Norla* 1960, and *Freya* 1963.

Also in 1961 the Halvorsen yard built *Gretel*, the 12 metre class yacht designed by Alan Payne which was Australia's first challenger for the America Cup and famously won one race of the series but failed to wrest the Cup from the Americans.

Anitra V racing in the CYCA Veterans Race on Sydney Harbour

The Halvorsen brothers Magnus and Trygve competed in most of the Sydney-Hobart Races from 1946 (*Saga*) to 1965 (*Freya*) in their own designed and built boats, and won the event on handicap five times with *Solveig*, *Anitra V* and *Freya*. They also competed in three TransPac races from Los Angeles to Hawaii with *Solveig* and *Anitra V*. Trygve and Magnus were part of Australia's first America Cup Challenge team with *Gretel* in Newport, Rhode Island, USA and in Australia's first Admirals Cup challenge in 1965 with *Freya* as part of the Australian Team at Cowes, Isle of Wight, UK.

Halvorsen cruisers have become collectors' items and are much sought after pleasure cruisers today. Most have been restored, some magnificently, and are much admired timber boats. Some of the sailing yachts are also still in good condition and actively sailed. These include *Solveig* and *Anitra V* in Sydney and *Norla* in Hobart.

Halvorsen launch Laitoki at Cowan Creek in June 1969
(John Jeremy Collection)

Halvorsen Centenary Flotilla Display
(John Jeremy Collection)