



EAAW

X

ENGINE AS A WEAPON
International Symposium

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DAMEN



PROGRAMME

EXPLOITING TECHNOLOGIES
FOR WARFIGHTING ADVANTAGE

Tuesday 28 & Wednesday 29 November 2023
SS Great Britain, Bristol

EAAW X explores the opportunities and challenges of manufacturing, integrating and supporting complex systems and equipment at the forefront of Naval technology. The conference will look across the current geo-political climate and its impact on the future of Naval warfare.

It will build on the success of previous symposiums by exploring the merging of combat and platform systems and how they may be used to defend against traditional and emerging threats. Experts will present papers and host panel discussions on the impact of utilising conventional and future technology against the background of a changing and increasingly challenging operating environment.

WHAT TO EXPECT

- Keynote speakers including:, Sarah Kenny OBE, *CEO BMT*, R Adm Paul Carroll OBE, R Adm JJ Bailey and Matt Howard, *Babcock*
- Hear from 30 plus speakers
- Over 20 technical presentations
- Gala dinner aboard *SS Great Britain*

www.imarest.org/eaaw

PROGRAMME

KEY THEMES

- Autonomy Matters – UXV integration, exploitation and support.
- Power to Capability – meeting power, thermal management and integration requirements of emerging tech including DE, Rail Gun and GW technology.
- Power to Command – electrification and modularity
- Power to Command – sustainability of future platforms
- Developing Trends and Emerging Technologies – Quantum Computing, Advanced Networks
- Cyber Security, IoT

WHO SHOULD ATTEND

- All professionals and leaders with an interest platform and marine systems as well as combat and weapon systems
- Engineers, scientists, technologists
- Researchers, designers, consultants, manufacturers, integrators, maintainers, operators
- Government, industry, academia
- Graduates, students, apprentices

SPONSORSHIP OPPORTUNITIES AVAILABLE

For information on becoming a sponsor please contact **Tola Onasanya**, Think Publishing

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Email: **tola.onasanya@thinkpublishing.co.uk**

DAY ONE

0800-0900 Registration and networking breakfast

0900-0905 Opening remarks, Cdr Richard Hudson RN, chair of EAAW X

0905-0950 Keynote Sarah Kenny OBE, CEO, BMT and RAdm Paul Carroll OBE, Royal Navy

SESSION ONE: POWER TO COMMAND – ELECTRIFICATION AND MODULARITY

Session chair: Andy Tate, Senior Principle Marine Systems Engineer, Dstl

1000-1030 The Challenges in Supporting Modular Capability, today and in the future

Speakers: Amanda Harris, Lead Systems Engineer, Babcock; Cleopatra Thatcher, Supportability Engineer, Babcock

1030-1100 The Modern Navy: Leveraging the benefits of commercially proven power systems

Speaker: David Barton, Sales Manager-Coast Guard & Navy, ABB

1100-1130 Networking break

1130-1200 Fast paced transition to a “new architecture” while keeping the lessons learned and the doors open for current operation

Speaker: Marc Reiftenbagh, Cybersecurity Engineer, RH Marine

1200-1230 Impact of Dual Energy Saving Technologies on a Frigate’s Duties

Speaker: John Buckingham, Chief Mechanical Engineer, BMT

1230-1300 Session one Q&A

Chair: Andy Tate, Senior Principle Marine Systems Engineer, Dstl

1300-1400 Lunch and tour of SS Great Britain

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DAY ONE CONTINUED

SESSION TWO: POWER TO COMMAND – SUSTAINABILITY OF FUTURE PLATFORMS

Session chair: Tom Flint, Senior Engineering Consultant, BMT

- 1400-1430** **Transient performance of alternatively fuelled internal combustion engines for naval applications**
Speakers: Jasper Vollbrandt, TU Delft
- 1430-1500** **Changing Definitions of Digital Twins In Ship Design**
Speakers: Jake Rigby, Global Head of Innovation and Research BMT Global; Prof. Jacqueline Christmas, Associate Professor of Machine Learning, Exeter University
- 1500-1530** **Networking break**
- 1530-1600** **Balancing Operational Capability Requirements and Climate Mitigation Goals: The Case for Model-Based Systems Engineering**
Speakers: Jeffrey Voth, US Navy; Emily Pence, US Navy; Victor Sorrentino, US Navy; Henry Jones, US Navy
- 1600-1630** **Giving Ex-RN Vessels a New Lease of Life**
Speakers: Peter Richardson, Chief Engineer (Transformation and Growth) – Babcock International Group (UK Marine Engineering); Richard Chance, Engineering Manager (Future Programmes) – Babcock International Group (UK Marine Engineering)
- 1630-1700** **Session Two Q&A**
- 1700-1705** **Chair close of day one**
- 1830-1930** **Drinks reception – Saloon Deck, SS Great Britain**
- 1930-2300** **Dinner – First class dining room, SS Great Britain**

DAY TWO

0830-0900 **Registration and networking breakfast**

0900-0905 **Opening remarks, Cdr Richard Hudson RN, chair of EAAW X**

0905-0930 **Keynote: Reflections on modularity, flexibility and adaptability and considerations for platform design and support of the enterprise's vision** **Matt Howard, Shipbuilding Technical Director, Babcock**

SESSION THREE: DEVELOPING TRENDS AND EMERGING TECHNOLOGIES (AUTONOMY)

Session chair: Iain Tall, Naval Combat System Engineer, Altarma Engineering Ltd

- 0940-1010** **Autonomous Surface Vessels and Design for Availability**
Speakers: Dr Eshan Rajabally, Maritime Technology Lead, BMT; Ian Savage, Chief Engineer Transversals and Assurance, BMT
- 1010-1040** **Naval Autonomous Surface Vehicle Recoverability**
Speakers: Ian Savage, Chief Engineer Transversals and Assurance, BMT; Simon Bartlett, Head of Fire Section, UK MOD
- 1040-1110** **Networking break**
- 1110-1140** **Fire Protection for Naval Automated Vessels**
Speakers: Ian Savage, Chief Engineer Transversals and Assurance, BMT; Dr James Glockling, Principle Fire Protection Engineer, BMT
- 1140-1200** **Containers as a Weapon I**
Speaker: William Edge, Senior Engineering Manager (Future Programmes), Babcock
- 1200-1230** **Session three Q&A**
- 1230-1315** **Lunch**



Enabling successful transitions to the adoption of **maritime autonomous systems**

Find out more



www.bmt.org

DAY TWO CONTINUED

SESSION FOUR: POWER TO CAPABILITY – MEETING POWER, THERMAL MANAGEMENT AND INTEGRATION REQUIREMENTS OF EMERGING TECH INCLUDING DE, RAIL GUN AND GW TECHNOLOGY

Session chair: Andy Michael, QinetiQ

- 1315-1345** **The Fusion of Marine Electrical Machines and Power Systems – The Next Evolution of Electrical Energy?**
Speaker: Nicholas Smith, Executive – Systems Product and Technology Group, GE Power Conversion
- 1345-1415** **Maintaining Capability & Freedom to Manoeuvre with a Net Zero Navy**
Speakers: Thomas Beard, Senior Analysis Engineer, BMT; Toby Drywood, Senior Sales Manager, BMT
- 1415-1545** **Session four Q&A**
- 1545-1615** **Keynote: Is Support the Last thing we cover?**
R Adm JJ Bailey, RN
- 1615-1630** **Chair closing remarks**

VENUE:

EAAW X will be held at: **Brunel's SS Great Britain, Great Western Dockyard, Gas Ferry Road, Bristol BS1 6TY**

Attendance includes a tour, drinks reception and a gala dinner held on-board SS Great Britain.



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Further details are available at: www.ssgreatbritain.org



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