

International Maritime Conference 2012

(Pacific 2012)

**Darling Harbour, Australia
30 January - 2 February 2012**

ISBN: 978-1-62276-120-3

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2012) by The Royal Institution of Naval Architects
All rights reserved.

Printed by Curran Associates, Inc. (2012)

For permission requests, please contact The Royal Institution of Naval Architects]
at the address below.

The Royal Institution of Naval Architects
10 Upper Belgrave Street
London SW1X 8BQ UK

Phone: 44 207 235 4622
Fax: 44 207 259 5912

publications@rina.org.uk

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

FULL PAPERS

Modularity: Naval Ship Modernization With Reduced Cost and Increased Flexibility.....	1
<i>Marc Deblasio, Peter Gentile, Chris Piszczyk</i>	
HSV WestPac Express - Ten Years Service to USMC.....	11
<i>Jim Black</i>	
Ship Recoverability: How Important is the Human Factors Input?.....	22
<i>Michelle Grech, David Drohan, Roberts Warren, Grant Gamble</i>	
Landing Craft Choosing the Right Tool for the Job.....	31
<i>Nick Johnson, Jeremy Atkins</i>	
Applying Commercial Technologies to Address Electronic Obsolescence.....	41
<i>Norman Dong, Adam Waldie</i>	
Emerging Fibre Optic Sensor Technology for Maritime Security.....	51
<i>Paul Baker, Tim Cain</i>	
Defining Infra-Red Signature Requirements for Naval Acquisitions.....	61
<i>Leo De Yong, Rodney Borg, Joanne Culpepper, Vivienne Wheaton</i>	
Ultimate Strength Calculations of an Aluminium Patrol Boat	70
<i>Teresa Magoga, C. Flockhart</i>	
A Comparison of Submarine Sail Geometry on the Hydrodynamic Performance of a Generic Submarine	80
<i>Gregory Seil, Brendon Anderson</i>	
Sonar Acoustic Transducers Technology: A Priority Industry Capability for Australia.....	90
<i>Tim Cain, Paul Baker</i>	
Driving Efficiency into Maritime Defence Programs	99
<i>Ric Cheadle</i>	
Radiation Characteristics of Turbulent-Flow-induced Noise over a Submarine and a Feasible Prediction Method	107
<i>Li Chen, I. Macgillivray, Y. Tso</i>	
Analysis of Platform Configurations using the Integrated Platform System Model.....	116
<i>Simon Harrison, J. Rodgers, J. Wharington, S. Demediuk</i>	
Tanking Control	126
<i>Chris Gates</i>	
The Application of Foresight Planning to Australian Defence Force Platform Acquisition.....	133
<i>John Wharington, Anthony Woolley</i>	
Assessment of Governor Control Parameter Settings of a Submarine Diesel Engine.....	143
<i>Peter Hield, Michael Newman</i>	
Diesel Engine Back Pressure Controller	153
<i>Owen Tregenza, Peter Hield</i>	
Operational Advantages and Benefits of 'Green' Submarines.....	163
<i>Eric Fusil</i>	
Propulsion System Options for a Modern Multi-role Patrol Vessel.....	173
<i>Michael O'Connor</i>	
Optimising SSK Transit Performance through Hullform, Transit Mode and Diesel Powerplant Selection.....	184
<i>Jacob Mann, Tom Gibbs</i>	
Multi-role Replenishment/support Vessels: Is This a Cost Effective Solution?.....	195
<i>Michael O'Connor, Leif Becker</i>	
Submarine Power and Propulsion: Balancing the Energy Elements	203
<i>John Buckingham</i>	
Exploring Options To Reduce Fuel Consumption	213
<i>John Buckingham</i>	
Sensitivity of Submarine Performance to Power and Energy System Parameters	225
<i>Robert Jarvis</i>	
SOLAS Compliant Navigation Systems on Naval Vessels.....	235
<i>David Bradley, A. Scicluna</i>	

HVAC Concept Design Study for a Small Surface Combatant	245
<i>Clint Domine</i>	
Integration of Unmanned Air Systems for Maritime Operations.....	264
<i>Andrew Chadwick</i>	
Considerations for Conventional Submarine Energy Chain Design	271
<i>David Williams</i>	
RAN Investigation into AFFF hose lines.....	281
<i>Ian Leaver, I. Raymond, D. Moloney, B. McNeice</i>	
Underwater Signature Management Solutions	292
<i>Samantha Davidson</i>	
The Design of a Submarine Countermeasure Launch System Using Dynamic System Modelling	302
<i>Max Ratcliffe, N. Malik, R. Drake</i>	
The Development of an Improved Submarine Escape System.....	312
<i>Max Ratcliffe, T. Peacock, R. Marion</i>	
Boat Launch and Recovery - A Key Enabling Technology For Flexible Warships	322
<i>Andy Kimber</i>	
Military Threat Analysis: the Challenges for Class Societies.....	333
<i>Thomas Grafton</i>	
Safety Assurance of Small Craft Operated by Governments and Navies	345
<i>Thomas Grafton</i>	
Review of Residual Stress Measurement in Hull Section of Submarines	357
<i>Xavier Ficquet, M. Körner, E. J. Kingston</i>	
Understanding the Manoeuvring Performance of an X-Plane Submarine in Deep Water and Near the Free Surface	368
<i>Paul Crossland, N. Kimber, N. Thompson</i>	
Damage Control Tools and Technologies for Naval Platforms.....	378
<i>Grant Gamble, Jeffery Robinson, Brigitte Suendermann, Michelle R. Grech, Warren Roberts</i>	
Advanced Nondestructive Inspection for Submarine Structural Integrity Management.....	388
<i>Cayt Harding, Geoff Hugo</i>	
Developing Australia's Future Submarine	398
<i>Hans Wicklander</i>	
The Use of Modern High Strength Steel Grades in the Australian Air Warfare Destroyer (AWD)	420
<i>Jan Verdaasdonk, R. Spyker, Z. Sterjovski</i>	
Employing System Architecting to Achieve Acquisition Risk Mitigation and Sustainment Focus on the Air Warfare Destroyer Project.....	430
<i>Steve Saunders</i>	
Design to Production - Air Warfare Destroyer	443
<i>Jim Carr</i>	
The Build Sequence - The Art and Science Behind the Consolidation Process for Awd Ship Construction.....	450
<i>Simon Ridgway, Peter Davie</i>	
Marine Propulsion Technologies: Transforming Grey Ships to Green	459
<i>Christoph Fenske</i>	
SMART Valves for Damage Control and Survivability	469
<i>James Rudolph, Piers Fraser</i>	
Status and Way Forward for LNG As a Maritime Fuel.....	479
<i>Lars Bikom</i>	
Economical Multi-Role Solutions	485
<i>Tim Speer, Simon Carroll</i>	

REFEREED FULL PAPERS

Investigation into the Roll Behaviour of Landing Craft in Deep Water	497
<i>Jenny Hill, T. Turner, E. Dawson, G. Macfarlane</i>	
The Quest for Optimum High Speed Planing Craft Design	507
<i>Warren Smith, A. Mohamad Ayob, T. Ray</i>	
Development of New RAN Personal Lifesaving Equipment	517
<i>David Drohan, B. McNeice, P. Luckin, W. Smith, S. Burdekin</i>	
Future of Lighthouse: The Sarawak Perspective	528
<i>Ahmad Faizal Ahmad Fuad, Saharuddin Abdul Hamid</i>	

Naval Landing Craft Stability	543
<i>Peter Hayes, Warren Smith, Martin Renilson, Stuart Cannon</i>	
Developing Australia's Indigenous Marine Craft Manoeuvring Analysis and Evaluation Capability.....	554
<i>Edward Dawson, B. Morris, J. Duffy</i>	
Sovereign and Crown Immunity for Warships? - or Acting in a Manner Consistent with IMO	
Environmental Conventions	566
<i>John Mansell, M. Tsamenyi</i>	
The Floating Harbour Transhipper - An Operationally Effective Solution for Military and Emergency Response Duties	576
<i>Ross Ballantyne</i>	
Predicting Berthed Ship - Passing Ship Interaction for Different Channel Geometries.....	586
<i>Jonathan Duffy, Martin R. Renilson, Shaun P. Denehy</i>	
Particulate Emission Characteristics from Medium-Speed Marine Diesel Engines	597
<i>Sergey Ushakov, Harald Valland, Jorgen B. Nielsen, Erik Hennie</i>	
Extending Submarine Equipment Beyond Its Service Life.....	607
<i>David Grocock, Brian Menzies, Carl Howard</i>	
The Effect of Length to Diameter Ratio on the Hydrodynamic Coefficients of a Submarine Operating Near the Surface in Calm Water	617
<i>Dev Ranmuthugala, D. Fletcher, D. Neulist, M. Renilson, B. Anderson</i>	
Research Into the Circular Wave Pool - A New Method of Generating Controlled Breaking Waves.....	630
<i>Jonathan Binns, Martin Renilson, Giles Thomas, Gregor Macfarlane, Steven Schmied, Rene Huijsmans</i>	
Author Index	