

Royal Institution of Naval Architects

International Maritime Conference

Pacific 2008

January 29-31, 2008
Sydney, Australia

Printed from e-media with permission by:

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

ISBN: 978-1-60560-459-6

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

Copyright (2008) by the Royal Institution of Naval Architects
All rights reserved.

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

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

Royal Institution of Naval Architects

International Maritime Conference
2008

TABLE OF CONTENTS

A Combinatorial Algorithm for Motion Planning in an Autonomous Unmanned Undersea Vehicle Equipped with Forward-Looking Sonar	1
<i>S. Chan</i>	
Gas Turbine Power and Propulsion Options for the Modern Warship	22
<i>D.J. Bricknell, R. Partridge</i>	
How Do You Ensure Safety Excellence in Your Operations	32
<i>P. Davison</i>	
Meeting the Maritime Manpower Challenge The Nautical Profession	36
<i>D. Bendall, L.A. Holder</i>	
Human Systems Integration: How Does it Fit Into Warship Design?	43
<i>P. Elischer, M.R. Grech</i>	
Seakeeping Behaviour of a Damaged Warship	53
<i>T. Andrewartha, G. Thomas, S. Cannon</i>	
Conversion MV "DRONNING INGRID" to M.V."AFRICA MERCY"	65
<i>A. Budd</i>	
Underway Replenishment Ship Designs	74
<i>D.J. Bricknell, P.E. Vedlog</i>	
Coastal Protection Vessels – Recent Developments	84
<i>D.J. Bricknell, C. Fjeldstad</i>	
Law and an Interdisciplinary Approach to Maritime Affairs	94
<i>J. Allsop</i>	
Marine Surveyors Meeting the Demands of the Next Decade	104
<i>A.R. Brink</i>	
The Graduated Application of Survivability Modelling in the Warship Design Process	112
<i>G. MacDonald, P. Horstmann</i>	
An Effective Corvette Platform Training System	144
<i>H. Kucharzewski, R. Wiedemann, M. Chang</i>	
Generalized Form Ray Tracer (GFRT) for Use Within the Measure of Total Integrated System Survivability (MOTISS) Program	153
<i>P. Morrisseau, J.A.W. Sajdak</i>	
Cost Savings for Warships Using the Reconfigurable Hull Form Concept	163
<i>M. Renilson</i>	
It's Time to Restore the Role of Shipping in the Australian Transport and Logistics Industry	169
<i>P. Crumlin</i>	
Incat Builds for Japan	198
<i>C. Clifford</i>	

Effect of Tuned Mass Absorbers on Large Structures	204
<i>J. Marco, I. MacGillivray</i>	
Progress in Simulation-Based Design.....	215
<i>K. Fach, V. Bertram</i>	
Preliminary Frigate Design using a Multi-objective Evolutionary Algorithm	223
<i>W. Smith, T. Ray</i>	
Australian’s Future Maritime Air Warfare Destroyer Capability – Balancing National Interests	233
<i>W. King</i>	
Port State Control	235
<i>L. Emmett</i>	
Determination of Ship Grounding and Accident Scenarios of a Geographical Area Using Risk Analysis.....	249
<i>A.R.M. Sidek, B.G Prusty, T. Ray</i>	
The Study of the Effective Education Technique of Ship Management System and the Present Conditions of the Japanese Fleet Management.....	259
<i>H. Kido, K. Sakaguchi</i>	
Robust Ship Designs - Balancing Uncertainty - Impacts of Future Trends.....	265
<i>T. Ray, W. Smith</i>	
Geometric Non-Linear Analysis of Stiffened Structures: A Review	275
<i>R.E. Ojeda, B.G. Prusty, N. Lawrence</i>	
A Guide to the Assessment of Vessel Wash within Sheltered Waterways.....	285
<i>G.J. Macfarlane, G. Cox</i>	
Hydrodynamic Design of High Speed Multi-Hulls and Motion-Control Devices Using a Panel Method.....	296
<i>D. Sadovnikov</i>	
Naval Ship Assurance – A New Approach	306
<i>J. Buckley, P. James, B. Cuckson, S. Marshall</i>	
Submarine Power and Propulsion - Trends and Opportunities.....	315
<i>J. Buckingham, C. Hodge, T. Hardy</i>	
Minor Warship Roles - How Technology is Leading to a New Vessel Type	329
<i>A. Kimber, W. Giles</i>	
Energy Scavenging Unmanned Ocean Vehicles Affordable Persistent Ocean Surveillance	339
<i>P. Kilbourn</i>	
The Use of Warship Vulnerability Analysis Tools As a Measurement of Blast and Ballistic Protection Requirements	350
<i>M. Buckland</i>	
Reduction of Roll Motion of a Surfaced Submarine in Beam Seas	360
<i>A. Davies, D. Ranmuthugala, J. El-Atm, Y. Tso</i>	
Advanced CFD Simulation Of Submarine Dynamics	370
<i>K.H. Lee, C. Pregalato</i>	
Seakeeping Operator Guidance	379
<i>J. Colwell, D. Stredulinsky</i>	

The Changing Face of International Marine Casualty Investigation, New Ways for Modern Times	389
<i>P. Foley</i>	
Novel Antifouling Surfaces Mimicked from Nature	397
<i>A. Scardino</i>	
Explorer AUV Missions in Coastal Newfoundland	408
<i>R. Lewis, S. Adams, N. Bose, J. Anderson</i>	
Modelling 100,000 Years of Tropical Cyclone Waves	415
<i>T.A. Hardy, L. Mason, J. McConochie</i>	
Hydrofoils Applied to Canting-keel Yachts	425
<i>R.S. Milne, P.J. Helmore</i>	
Update on van Oortmerssen’s Resistance Prediction	437
<i>P.J. Helmore</i>	
Amphibious Ships	451
<i>P. Brown</i>	
Use of Slocum Glider Technology in Coastal and Marine Applications	460
<i>V. V. Anokhin, J. R. Romero, R. Steedman</i>	
Coming to Terms with the New SOLAS Probabilistic Sub-Division and Damage Stability Provisions	470
<i>R. Gehlin</i>	
Integrated Waste Management in the Maritime Environment	484
<i>K. Harvey</i>	
Alternative Shock Trial Techniques for the RAN Air Warfare Destroyer	494
<i>W. Reid, L. Deyong, P. Elischer</i>	
A Trial Sensor Network for the Armidale Class Patrol Boat	504
<i>C.P. Gardiner, P. Vincent, A. Wilson, D. Ellery, T. Armstrong</i>	
Predicting Reduction of Tankers' Hull Girder Section Modulus	515
<i>G. Wang, L.D. Ivanov, A.K. Seah</i>	
Improvements and Updates to Intact Stability Standards Applied to Domestic Vessels in Australia	522
<i>M. Flapan</i>	
Integrated Ship Survivability for the Royal Australian Navy	533
<i>L. de Yong</i>	
SEA4000: The Australian Air Warfare Destroyer Program – Combat Systems Challenges and Opportunities	543
<i>J. Davis</i>	
MAN Diesel High Power Density Engines and After-Sales Support in Naval and Commercial Applications	544
<i>R. Losch</i>	
KSS – Efficient Catamaran Build Process in Composites	577
<i>D. Kelsall</i>	
Meeting Future Military Capability with a Network Centric Architectural Framework	583
<i>A. Cameron, P. Williams</i>	
Optimal Naval Warship Design For Fabrication And Maintenance	595
<i>G.W. Sloan</i>	

Flammability and Fire Resistance Issues of Composite Structures for Ships	609
<i>Z. Mathys, I. Grabovac, N.S. John, S. Russo</i>	
SEA4000: The Australian Air Warfare Destroyer Program – Shipbuilding Challenges and Opportunities	619
<i>J. Carr</i>	
The Application of Classification to High Performance Craft	620
<i>T. Ingram, D. Novak</i>	
Residual Strength Variation of a Welded Structural Component due to a Pore	631
<i>A. Ghosh</i>	
Classification of Naval Support Ships	640
<i>B. Simpson</i>	
The Tenix Marine LHD Ship Build Program	655
<i>K. Malpress</i>	
Innovative Gear Solutions in Naval Propulsion Systems	661
<i>F. Hoppe</i>	
DAD Helicopter-Ship Aid for Maximising Helicopter and Ship Operational Capability, Improving Safety and Usage Monitoring	671
<i>D. Howe</i>	
Advances in Gyro-Stabilisation of Vessel Roll Motion	682
<i>T. Perez, P. Steinmann</i>	
Delegate List	693
Author Index	