

# **3rd International Conference on Maritime Development (ICMaD 2024)**

Advances in Engineering Research Volume 255

Makassar, Indonesia and Online  
9 - 10 October 2024

ISBN: 979-8-3313-1142-1

**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.**

Print copyright© (2024) by Atlantis Press (part of Springer Nature)  
All rights reserved.  
Copyright for individual electronic papers remains with the authors.

For permission requests, please contact the publisher:

Atlantis Press  
Van Godewijkstraat 30  
3311GX Dordrecht  
The Netherlands

[contact@atlantis-press.com](mailto:contact@atlantis-press.com)

Printed with permission by Curran Associates, Inc. (2025)

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2633  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

## TABLE OF CONTENTS

|                                                                                                                                                                    |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Analysis of the Implementation of the 2006 MLC Ratification on Indonesian Ships .....                                                                              | 1   |
| <i>Subehana Rachman, Meti Kendek, Haerani Asri, Siti Zulaikah</i>                                                                                                  |     |
| Optimization of Deck Crew Coordination on Watch Duty in Loading Implementation at KMP.<br>Portlink III .....                                                       | 8   |
| <i>Diah Vitaloka Hartati, Muhammad Sapril Siregar, Iksan Saifudin</i>                                                                                              |     |
| Indonesia's Maritime Strength as an Anticipation of Escalation in the North Natuna Sea Conflict .....                                                              | 16  |
| <i>Rona Sandro, Christou Imanuel, Fauzan Siszedli Dwi Farand</i>                                                                                                   |     |
| Exploring Seafarers' Perceptions of Green Shipping Technology: The Contribution of Maritime<br>English Mastery .....                                               | 33  |
| <i>Alberto Alberto, Mutmainnah Hasyari</i>                                                                                                                         |     |
| Marine Traffic Risk Assessment Using Spatio-Temporal AIS Data in Makassar Port, Indonesia .....                                                                    | 43  |
| <i>Faisal Saransi, Joe Ronald Kurniawan Bokau</i>                                                                                                                  |     |
| Analysis of Diesel Generator Fuel Quality on the Sultan Hasanuddin Training Ship .....                                                                             | 53  |
| <i>Samsul Bahri, Anindya Putri Utami, Abdy Kurniawan</i>                                                                                                           |     |
| The Study of the Use of the Liquefied Natural Gas (LNG) as the Dual Fuel for the Engine<br>Propulsion of KM Nggapulu .....                                         | 62  |
| <i>Henny Pasandang Nari, Rudy Susanto, Samsul Bahri, Romy Sumardiawan</i>                                                                                          |     |
| Peer-Review Statements .....                                                                                                                                       | 74  |
| <i>Ramlan Mahmud, Rahimuddin Rahimudin, Novriany Amaliah, Azwar Hayat</i>                                                                                          |     |
| Analysis of the Effect of Wind and Current on the Motion of Mt. Gas Natuna When Berthing at<br>Jetty IBL III Pelindo Gresik .....                                  | 77  |
| <i>Rudy Susanto, Bruce Rumangkang, Arlizar DJaman, Ahmad Roohid Rifki</i>                                                                                          |     |
| Optimizing Dwelling Time at the New Makassar 1 Container Terminal in Supporting the Regional<br>Development of South Sulawesi .....                                | 84  |
| <i>Zainal Yahya Idris, Ganding Sitepu, Mislih, Indrabayu</i>                                                                                                       |     |
| Green Shipping Expansion Strategy as a Catalyst for Maritime Industry Transition in Indonesia .....                                                                | 100 |
| <i>M. Andhika Rezki Utomo S, Putu Peby Pratama, Tri Iriani Eka Wahyuni</i>                                                                                         |     |
| Analysis of the Crew's Understanding of Safety Equipment on the MV ATHENA .....                                                                                    | 108 |
| <i>Moh. Aziz Rohman, Hairil Akbar</i>                                                                                                                              |     |
| Design and Development of a Ship Fuel Tank Volume Height Monitoring System Using the JSN-<br>SR04T Sensor Based on IoT Telegram Bots with Solar Panel Energy ..... | 115 |
| <i>Agus Dwi Santoso, Restiya Sembada Wicaksana, Moejiono, Monika Retno Gunarti</i>                                                                                 |     |
| The Role of Education and Social Campaigns in Raising Awareness of Eco-Sailing .....                                                                               | 131 |
| <i>Muhammad David, Dedy Kurniadi, Taharuddin, Sabaruddin, Dita Romadhoni</i>                                                                                       |     |
| Challenges in Learning and Teaching Maritime Law in Sorong Merchant Marine Polytechnic: A<br>Linguistic Perspective .....                                          | 139 |
| <i>Ryan Puby Sumarta, Yuniar Ayu Hafita, Agus Sulistiono, Lilik Yulianingsih, Oktovianus<br/>Cristian Karubaba, Dodik Widarbowo</i>                                |     |

|                                                                                                                                                                                 |     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Enhancing Employee Productivity: The Impact of Occupational Safety, Health, and Work Discipline at PT. Pelindo Parepare .....                                                   | 148 |
| <i>Arif Fuddin Usman, Farah Aqilah Wajdi, Andi Ningrat, Andi Rachmianty, Andi Murtafiah</i>                                                                                     |     |
| The Role of English Proficiency in Promoting Green Shipping Technology: A Case Study of Indonesian Ports .....                                                                  | 161 |
| <i>Novianty Palayukan, Nurul Hatifah</i>                                                                                                                                        |     |
| Performance Evaluation of Compressor Valves in the Food Refrigeration System Onboard K1.02 Sultan Hasanuddin.....                                                               | 170 |
| <i>Abdul Basir, Ince Ansar, L. Muhamad Hidayat, Reza Maulana</i>                                                                                                                |     |
| The Analysis of Watchkeeping on GAS ARJUNA .....                                                                                                                                | 176 |
| <i>Joko Purnomo, Gilbert Christiano Mongan</i>                                                                                                                                  |     |
| Effect of Magnetic Guidance Error with the Movement of the MV Chandra Kirana.....                                                                                               | 185 |
| <i>Rahul Sukhanna Putra, Willyam Raimond Riwu, Gradina Nur Fauziah</i>                                                                                                          |     |
| Implementing Safety Culture Through Onboard Ship Simulation in Maritime Education & Training .....                                                                              | 192 |
| <i>Joe Alend Seniza B, Alberto, Joe Ronald K. Bokau</i>                                                                                                                         |     |
| Improving the Performance of Human Resources Appraisal Maritime Logistics Through Character Culture Training .....                                                              | 203 |
| <i>Romanda Annas Amrullah, Mustamin Latief, Saipul Imam Subakti</i>                                                                                                             |     |
| Optimizing the Use of Electronic Chart Display and Information System (ECDIS) as a Support for Shipping Safety on MT. Gao Cheng II .....                                        | 218 |
| <i>Gradina Nur Fauziah, Chairyl Mardhana Sakti, Rahul Sukhana Putra</i>                                                                                                         |     |
| Analysis of Garbage Management According to Marpol 1973/1978 Annex V on MT. Klasogun .....                                                                                      | 227 |
| <i>Endang Lestari, Masrupah Masrupah, Rosnani Rosnani</i>                                                                                                                       |     |
| Analysis of the Implementation of ISPS Code on MV. Xin Feng .....                                                                                                               | 236 |
| <i>Rosnani Rosnani, Budi Riyanto, Endang Lestari, Slamet Riyadi</i>                                                                                                             |     |
| The Use of Geo-Nano TiO <sub>2</sub> /SiO <sub>2</sub> Photocatalyst-Based Self-Cleaning Material as a Coating for Tanker Ship Deck Line Pipe Corrosion Prevention.....         | 243 |
| <i>Hasiah Hasiah, H. P. Nari, R. Irfanita, Subaer Subaer</i>                                                                                                                    |     |
| Development of Competency Test Instruments (Level Management) in the Practical Exam of Navigation Functions At The Bridge Simulator of The Barombong Shipping Polytechnic ..... | 254 |
| <i>Faisal Saransi, Riki Wanda Putra</i>                                                                                                                                         |     |
| The Convergence of Maritime English and Green Shipping: Enhancing Collaboration Through Effective Communication.....                                                            | 262 |
| <i>Sunarlia Limbong, Ade Chandra, Frans Tandibura, Yuniar Ayu Hafita</i>                                                                                                        |     |
| Analysis of High-Temperature Coal Handling on MV. ALCYONE I Managed by PT. IDT Trans Agency Palembang Branch .....                                                              | 272 |
| <i>Jumriani Jumriani, Andi Muh Rahmat Hidayat</i>                                                                                                                               |     |
| Control Systems in Marine Application .....                                                                                                                                     | 277 |
| <i>Ab Saman Abd Kader</i>                                                                                                                                                       |     |

|                                                                                                                                                                                                                                               |     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| The Impact of Supply Chain Disruption, Supply Chain Organizational Culture, Supply Chain Ambidextrous Leadership on Supply Chain Strategy, and It's Impact on Company Performance of Pertamina's Terminal for Own Use (TUKS) in Cilacap ..... | 287 |
| <i>Hamidin Hamidin, Saptono Kusdanu Waskito</i>                                                                                                                                                                                               |     |
| Analysis of Bow Thruster Design as a Ship Propeller Train the Ministry of Transportation Sailing School.....                                                                                                                                  | 294 |
| <i>Muh. Ivan, Abdul Wahid, Mahbub Arfah</i>                                                                                                                                                                                                   |     |
| Analysis of Waste Handling MV. Coral Actinia .....                                                                                                                                                                                            | 304 |
| <i>Muhlisin Muhlisin, Zainal Yahya Idris, Ning Mas Miftakhul Fadlilah</i>                                                                                                                                                                     |     |
| The Urgency of Establishing National Regulations on Reducing Greenhouse Gas Emissions from Maritime Transport in Indonesia .....                                                                                                              | 313 |
| <i>Andi Aulia Arikha Setyo, Christou Imanuel, Fazri Hermanto, Chairil Amin Saputra</i>                                                                                                                                                        |     |
| Social Construction of Environmentally Friendly Shipping in Coastal Communities in Banda Aceh .....                                                                                                                                           | 324 |
| <i>Muhammad David, Harris R. Dahlan, Rispa Saeful Mukhtar, Fazri Hermanto, Samuel Dumak Parerungan</i>                                                                                                                                        |     |
| Improving Environmental Management and Green Shipping: Innovation, Regulation, Awareness, Support .....                                                                                                                                       | 332 |
| <i>Albertha Lolo Tandung, Sidrotul Muntaha, Inriani</i>                                                                                                                                                                                       |     |
| The Effectiveness of MARPOL Annex V Implementation on Ferry Ships in Parepare Harbor .....                                                                                                                                                    | 347 |
| <i>Bustamin Bustamin, Joko Purnomo, Ismail Ismail, Muhammad Rijal, Andi Dirga Noegraha</i>                                                                                                                                                    |     |
| Analysis of the Role of Selenoid Valve on Foodstuff Cooling Machine on MV Ship. Double in .....                                                                                                                                               | 357 |
| <i>Agus Salim, Andi Wahyu Romly Saputra, Syamsu Alam</i>                                                                                                                                                                                      |     |
| Noxious Liquid Substances Management Plan in Preventing Marine Pollution on MT. Prima Lautan II .....                                                                                                                                         | 372 |
| <i>Rudy Susanto, Arung Sanjaya Batara Sakti</i>                                                                                                                                                                                               |     |
| Analysis of Sewage Treatment Plant Management for the Prevention of Marine Environmental Pollution .....                                                                                                                                      | 379 |
| <i>Haerani Asri, Subehana Rachman, Eva Susanti, Nurwahidah</i>                                                                                                                                                                                |     |
| Analysis Handling Spill Oil on Loading Operation Cargo in Prevent Pollution in the Marine Environment .....                                                                                                                                   | 387 |
| <i>Eva Susanti, Octavera Sulistiana, Haerani Asri, Nurwahidah</i>                                                                                                                                                                             |     |

## Author Index