

International Conference on Marine Simulation and Ship Manoeuvrability 1993

(MARSIM' 93)

**St. John's, Newfoundland, Canada
26 September - 2 October 1993**

Volume 1 of 2

ISBN: 978-1-62276-664-2

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© (1993) by International Marine Simulator Forum
All rights reserved.

Printed by Curran Associates, Inc. (2013)

For permission requests, please contact International Marine Simulator Forum
at the address below.

International Marine Simulator Forum
Prof. Capt. Stephen J. Cross
Maritime Institute Willem Barentsz
P.O.Box 26
8880 AA, West Terschelling
The Netherlands

Phone: +31 653 590001
Fax: +31 517 412111

sjcross@hetnet.nl

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

MARSIM 93 PROCEEDINGS

CONTENTS

VOLUME ONE

Preface	v
Local Organizing Committee	vi
International Technical Committee	vii

PAPERS

Arai, Y., Kobayashi, H., Fukuto, J., Endo, M. A Simulation Study on the Evaluation of the Ship Control Difficulty in Restricted Waters	1
Bandyopadhyay, B., Hsiung, C. Identification of Ship's Broaching-To As Bifurcation Phenomenon	11
Berg, T.E., Midtgaard, A., Sangvig, M.B. A Training and Retraining Programme for Offshore Loading Tanker Handling	23
NOT PRESENTED Biancardi, C.G. Integrating Ship Maneuverability with Safety	33
Brandner, P.A., Renilson, M.R. Simulation of Shiphandling Using Omnidirectional Stern Drive Tugs	49
Cross, S.J. An Evaluation Tool for Simulator Training	59
Dand, I.W. Simulation of Warping Manoeuvres	67
Dijkhuis, T., van Toorenborg, J.C.K., Verkerk, F. New Manoeuvring Criteria for The River Rhine	77
Douglas, J.D., Wass, C.F. Development of a Bridge Team Management Course	87
NOT PRESENTED Douwsmar, D.G. Using Frameworks to Produce Cost-Effective Simulator Training	97
Drown, D.F., Lowry I.J. A Categorisation and Evaluation System for Computer Based Ship Operation Training ..	103
Duggan, J.M., Kennedy, P.J. The Requirement for Simulation in Training Marine Traffic Regulators	115
Dupuis, R.J., Goodkey, B.C. Simulation of Coastal Minehunter Ship Fitted with Cycloidal Vertical Axis Propellers ..	123
Endo, M., Matsuura, Y., Noguchi, N., Ushioku, T., Takano, K. Development of a Ship Handling Simulator for a High Speed Ship and its Approach for Increasing Reality	133

Gronarz, A.	A Mathematical Model for Manoeuvring Simulation on Shallow Water	143
Hammer, J.A.	Visual System Fidelity in Marine Simulators: A Practical Guide	153
Hara, K., Hammer, A.	A Safe Way of Collision Avoidance Manoeuvre Based on Manoeuvring Standard Using Fuzzy Reasoning Model	163
Hearn, G., Clarke, D.	Manoeuvring of Ships and Estimation Schemes (MOSES): The Influence of Vortices on the Calculation of Hull Derivatives	171
Heikkilä, M., Norros, L.	A Simulation Study on the Format of Ship Motion Display to Improve Steering Accuracy in Restricted Fairways	179
Hétet J.F., Chesse, P., Frayret, J.P., Inozu, B.	Turbocharged Marine Diesel Simulation Modeling for Fault Diagnosis and Optimum Operation	189
Iribarren, J.R., Montero, J.M.	Port Engineering Research Using a Manoeuvring Simulator	199
Jenkins, M.E., Theedom, R.C.	Use of Simulators as a Training and Examination Tool	207
Jensen, P.S., Chislett, M.S., Römeling, J.U.	Den-Mark 1 - An Innovative and Flexible Mathematical Model for Simulation of Ship Manoeuvrability	219
Jiang, T., Sharma, S.D.	Manoeuvring Simulation of a Single-Point-Moored Tanker in Deep and Shallow Water . .	229
Kaneko, F., Tanaka, K., Kiriya, N.	The Ship Manoeuvring Simulator for Safety Assessment of High Speed Crafts	243
Karasuno, K., Igarashi, K.	A Physical-Mathematical Model of Hydrodynamic Forces and Moment Acting on a Hull During Large Drifting and Turning Motion Under the Conditions of Slow Speed . .	253
Kasai, H., Kobayashi, E.	Manoeuvring Simulation Approach to a Ship's Piloting Expert System	263
Kasasbeh, Y.A., Woollens, D.J., Pourzanjani, M.M.	Problems with Trying to Validate New Maritime Simulators	273
Kijima, K., Tanaka, S., Furukawa, Y., Hori, T.	On a Prediction Method of Ship Manoeuvring Characteristics	285
Kobayashi, E., Wada, Y.	Development of a Simulation System to Evaluate Ship Manoeuvrability in Waves	295
Kobayashi, H.	Simulator Study on the Relation Between the Handling Ability and the Information	305
Koning, B.R., van Harmelen, J.D.	The Role of Simulator and Computer Based Training for Maritime Officers and Pilots . .	313
Köse, E., Gosine, R.G., Calisal, S.M.	Toward a Real-time System for Monitoring the Safety of Fishing Vessels	321
Kose, K., Misiag, W.	A Systematic Procedure for Predicting Maneuvering Performance	331

VOLUME TWO

Kurihara, T., Hirao, K., Arai, Y., Okuda, S., Hirano, K., Okamoto, Y.	
Low Cost Visual System for Bridge Simulator of MTC in Japan	341
Landrini, M., Casciola, C.M., Coppola, C.	
A Nonlinear Hydrodynamic Model for Ship Manoeuvrability	351
Lee, C.M., Kang, C.G., Gong, I.Y., Kim, Y.G.	
Development of a PC Based Shiphandling Simulator and its Application	359
Lehtosalo, J.	
The Development of an On-Board Simulation Program for Passage Analysis	369
McTavish, S., Bluteau, N.	
Motion System for a Shiphandling Simulator	377
Mercer, R.M.	
Research and Training Aspects of Ship Simulators from an Educational Perspective	387
Meurn, R.J., Sandberg, G.	
Ship Simulator Bridge and Control Station Requirements from an Instructor's Point of View	397
Montero, J.M., Garcia, A., Iribarren, J.R.	
Study of Dynamic Manoeuvring Coefficients using New Techniques Based on Towing Tank Tests	409
Muirhead, P.M., Smith, I.	
Marine Simulation Performance Measurement and Assessment: Methodologies and Validation Techniques - A Critique	417
Nakamura, S., Ishioka, Y., Kuo, P.K., Kose, K.	
Procedures to Assess Maneuvering Safety of Ships in Harbours	427
Nonaka, K.	
Estimation of Hydrodynamic Forces Acting on a Ship in Manoeuvring Motion	437
Norrbin, N.H.	
Ship Geometry, A Dynamic Stability Parameter, and Standard Test Analysis	447
Numano, M., Miyazaki, K., Fukuto, J., Murayama, Y.	
Safety Assessment of Newly Developed Marine Transportation System with Safety Margin as an Index	457
Oltmann, P.	
Roll - An Often Neglected Element of Manoeuvring	463
Puglisi, J.J., King, T.A.	
The Application of Microcomputer Technology and Marine Simulation Technology in Advanced Integrated Bridge Systems and Education	473
Rhee, K.P., Ann, S.P., Ryu, M.C.	
Evaluation of Hydrodynamic Derivatives from PMM Test By System Identification	489
Schaafstal, A.M., van Maanen, W. Ph., Wolters, A.J.W., Lems, J.C.	
Training, Proficiency Testing, and Licensing of Masters of Sea-Going Vessels Using a Full-Mission Simulator	499
Schraagen, J.M.	
What Information do River Pilots Use?	509
Smith, M.W., Akerstrom-Hoffman, R.A., Pizzariello, C.M., Siegel, S.I., Schreiber, T.E., Gonin, I.M.	
A Simulator Examination of Electronic Chart Display and Information Systems (ECDIS)	519
Srivastava, S.D.	
IMO's Activities on Ship Manoeuvrability	527
Tasker, R.L., Muirhead, P.M.	
Establishment of Ship Simulator Training Courses for Masters and Mates	543

ten Hove, D.	Development and Validation of Mathematical Manoeuvring Models Using Database Techniques	551
ter Hedde, R., Perdok, J.	The Effectiveness of Training Programs: Training Design and Quality Assurance	559
Turner, J.K., Radloff, E.A.	The Development of A Modular Ship Model	571
Varyani, K.S.	Simulation of Towed Vessels Under Wind Loading	581
Wahren, E.	Application of Airline Crew Management Training in the Maritime Field	591
Webb, D.W.	Use of Computer-Aided Drafting (CAD) Software in Ship Simulation	601
Webster, W.C., Young, W.	Marine Board Shiphandling Simulation Research	611
Wittig, W.	Requirements of a Shiphandling-Simulator to be used for Psychological Training for Officers Employed on Ships with One-Man-Bridge	623
Woolnough, E.W., Tasker, R.L.	Upgrading a Port Facility: How a Shiphandling Simulator was used to Determine the Requirements	631
Yasukawa, H.	A Theoretical Approach to Evaluate Steady Turning Performance of a Thin Ship in Shallow Water	641
Yoshimura, Y., Satoh, K., Takeda, S.	Coasting Manoeuvrability of Single CPP Equipped Ship and the Application of a New CPP Controller	651

ABSTRACTS ONLY

Ankudinov, V., Kaplan P., Jacobsen, B.	Assessment and Principal Structure of the Modular Mathematical Model for Ship Maneuverability Prediction and Real-Time Maneuvering Simulations	661
Eda, H.	Simulation Analysis of Marine Disasters	663
Landsburg, A.C., et al	The Interrelated Elements for Safe Ship Handling: a View from SNAME Panel H-10 (Ship Controllability)	665