

# Preface

Human Factors and Ergonomics have made a considerable contribution to the research, design, development, operation, and analysis of transportation systems which includes road and rail vehicles and their complementary infrastructure, aviation, and maritime transportation. This book presents recent advances in the Human Factors Aspects of Transportation. These advances include accident analysis, automation of vehicles, comfort, distraction of drivers (understanding of distraction and how to avoid it), environmental concerns, in-vehicle systems design, intelligent transport systems, methodological developments, new systems and technology, observational and case studies, safety, situation awareness, skill development and training, warnings, and workload.

This book brings together the most recent human factors work in the transportation domain, including empirical research, human performance, and other types of modeling, analysis, and development. The issues faced by engineers, scientists, and other practitioners of human factors in transportation research are becoming more challenging and more critical.

The common theme across these sections is that they deal with the intersection of the human and the system. Moreover, many of the chapter topics cross section boundaries, for instance by focusing on function allocation in NextGen or on the safety benefits of a tower controller tool. This is in keeping with the systemic nature of the problems faced by human factors experts in rail and road, aviation and aerospace, and maritime research—it is becoming increasingly important to view problems not as isolated issues that can be extracted from the system environment, but as embedded issues that can only be understood as a part of an overall system.

In keeping with a system that is vast in its scope and reach, the chapters in this book cover a wide range of topics. The chapters are organized into 14 sections:

*Section 1: Aviation: Human Factors Safety in Aviation and Aerospace*

*Section 2: : Maritime- Human Factors in Maritime*

*Section 3: Road and Rail: Driver Safety*

*Section 4: Road and Rail: Human-Machine Interaction*

*Section 5: Road and Rail: Automation*

*Section 6: Road and Rail: Infrastructure and Road Safety*  
*Section 7: Road and Rail: Vulnerable Road Users*  
*Section 8: Road and Rail: Driving Simulation and Test Track*  
*Section 9: Road and Rail: Eco-Driving*  
*Section 10: Road and Rail: Rail Passengers*  
*Section 11: Road and Rail: Public Transport*  
*Section 12: Road and Rail: Driving Automation and Human Factors Issues*  
*Section 13: Road and Rail: Rail Safety and Design*  
*Section 14: Road and Rail: Transportation Logistics*

This book will be of interest and use to transportation professionals who work in the road and rail, aviation and aerospace, and maritime domains as it reflects some of the latest Human Factors and Ergonomics thinking and practice. It should also be of interest to students and researchers in these fields, to help stimulate research questions and ideas. It is my hope that the ideas and studies reported within this book will help to produce safer, more efficient and effective transportation systems in the future.

We are grateful to the Scientific Advisory Board which has helped elicit the contributions and develop the themes in this book. These people are experts and academic leaders in their respective fields, and their help is very much appreciated, especially as they gave their time to the project.

## **Road and Rail**

Giles Balbinotti, Brazil  
Klaus Bengler, Germany  
Gary Burnett, UK  
Peter Chapman, UK  
Fang Chen, Sweden  
Denis Coelho, Portugal  
Benjamin Colucci Rios, Puerto Rico  
Guillaume Craveur, France  
Laurel Dickson-Bull, USA  
L. Dorn, UK  
Ian Glendon, Australia  
Iwona Grabarek, Poland  
R. Happee, Netherlands  
S. Jamson, UK  
Dave Kaber, USA  
Josef Krems, Germany  
Mike Lenné, Australia  
Franck Mars, France  
D. McAvoy, USA  
Ann Mills, UK

Ralf Risser, Austria  
Paul Salmon, Australia  
Shafiq ur Rehman, Sweden  
Didier Valdes Diaz, Puerto Rico  
Guy Walker, Scotland  
Kristie Young, Australia

## **Aviation and Aerospace**

Marcus Biella, Germany  
Clark Borst, The Netherlands  
Tamsyn Edwards, USA  
Michael Feary, USA  
Andreas Haslbeck, Germany  
Becky Hooey, USA  
David Kaber, USA  
Kara Latorella, USA  
Arnab Majumdar, UK  
Lynne Martin, USA  
Joey Mercer, USA  
Max Mulder, The Netherlands  
Jon Lars Syversen, Norway  
Savvy Verma, USA  
Kim Vu, USA

## **Maritime**

Ahmet Dursun Alkan, Turkey  
David Andrews, UK  
Giuseppe Di Bucchianico, Italy  
Dawn Gray, USA  
Marc Grootjen, The Netherlands  
Thomas Koester, Denmark  
Scott Netson MacKinnon, Canada  
Massimo Musio Sale, Italy  
Stella (Styliani) Parisi, Germany  
Gesa Praetorius, Sweden  
Andrea Ratti, Italy  
Andrea Vallicelli, Italy

July 2017

Neville A. Stanton

Advances in Human Aspects of Transportation  
Proceedings of the AHFE 2017 International  
Conference on Human Factors in Transportation, July  
17–21, 2017, The Westin Bonaventure Hotel, Los  
Angeles, California, USA  
A Stanton, N. (Ed.)  
2018, XXI, 1160 p. 397 illus., Softcover  
ISBN: 978-3-319-60440-4