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Neville Stanton
Editor

Advances in Human Factors of Transportation

Proceedings of the AHFE 2019 International
Conference on Human Factors
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Advances in Human Factors and Ergonomics 2019

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10th International Conference on Applied Human Factors and Ergonomics and the
Affiliated Conferences

Proceedings of the AHFE 2019 International Conferences on Human Factors in
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Preface

Human factors and ergonomics have made a considerable contribution to the research, design, development, operation, and analysis of transportation systems. This includes road, rail, aviation, aerospace, and maritime vehicles as well as their complementary infrastructure. This book presents recent advances in the human factors aspects of transportation. These advances include accident analysis, automation of vehicles, comfort, distraction of drivers (including 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 which work in the transportation domain, including empirical research, human performance and other types of modeling, analysis, and development. The issues facing 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 interactions of humans with systems in the environment. Moreover, many of the chapter topics cross domain and discipline boundaries. This is in keeping with the systemic nature of the problems facing human factors experts in rail and road, aviation and aerospace, and maritime research—it is becoming increasingly important to view problems not as isolated factors 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 thirteen sections:

Part 1 Human Factors in Transportation: Road and Rail

- Section 1 Vehicle Automation
- Section 2 Designing Autonomy in Transportation Age and Inclusion
- Section 3 Driving Behavior Autonomous and Automated Vehicles
- Section 4 Driver Training and Education

Section 5	Human Factors in Transportation Rail
Section 6	Vulnerable Road Users
Section 7	Driving Behavior Safety and Simulation
Section 8	Road and Rail Comfort
Section 9	Trucks
Section 10	Safety and Hazards
Section 11	Road and Rail Usability

Part 2 Human Factors in Transportation: Maritime

Section 12	Transportation Maritime
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Part 3 Human Factors in Transportation: Aviation and Space

Section 13	Human Factors in Aviation and Space
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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 the 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. Special thanks to Giorgio Musso and Nancy Currie-Gregg for their contribution to the Space program.

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