1st Conference on Evacuation Modeling and Management 2009

Procedia Engineering Volume 3

Deft, Netherlands
23 – 25 September 2009

Editors:

S. P. Hoogendoorn

ISBN: 978-1-62748-549-4
ISSN: 1877-7058

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© (2009) by Elsevier B.V.
All rights reserved.

Printed by Curran Associates, Inc. (2013)

For permission requests, please contact Elsevier B.V.
at the address below.

Elsevier B.V.
Radarweg 29
Amsterdam 1043 NX
The Netherlands

Phone: +31 20 485 3911
Fax: +31 20 485 2457

http://www.elsevierpublishingsolutions.com/contact.asp

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

TABLE OF CONTENTS

Preface 1

A Review of Planning and Operational Models Used for Emergency Evacuation Situations in Australia 3
Michael A. P. Taylor, Sally K. Freeman

Evacuation Models and Disaster Psychology 15
Harrie C. M. Vorst

Investigating the Effect of Different Pre-evacuation Behavior and Exit Choice Strategies Using Agent-based Modeling 23
Ellen-Wien Augustijn-Beckers, Johannes Flacke, Bas Retsios

Exit Choice, (pre-)movement Time and (pre-)evacuation Behaviour in Hotel Fire Evacuation — Behavioural Analysis and Validation of the Use of Serious Gaming in Experimental Research 37
Margrethe Kobes, Ira Helsloot, Bauke De Vries, Jos Post

Capacity of Doors During Evacuation Conditions 53
Winnie Daamen, Serge Hoogendoorn

Evacuation Plan of the City of Almere: Simulating the Impact of Driving Behavior on Evacuation Clearance Time 67
Huizhao Tu, Guus Tamminga, Hans Drolenga, Jeroen De Wit, Wouter Van Der Berg

Field Research Concerning Contra-flow As a Measure for Massive Evacuation 77
Allert S. Knapper, Karel A. Brookhuis

Psychological Elements in Car-following Models: Mental Workload in Case of Incidents in the Other Driving Lane 87
Raymond Hoogendoorn, Serge Hoogendoorn, Karel Brookhuis, Winnie Daamen

Evacuation Modeling Including Traveler Information and Compliance Behavior 101
Adam J Pel, Serge P Hoogendoorn, Michiel Cj Bliemer

Rerouting Behaviour of Travellers Under Exceptional Traffic Conditions — An Empirical Analysis of Route Choice 113
Victor L. Knoop, Serge P. Hoogendoorn, Henk Van Zuylen

Redundancy Importance: Links As Rerouting Alternatives During Road Network Disruptions 129
Erik Jenelius

Informal Dissemination Scenarios and the Effectiveness of Evacuation Warning Dissemination of Households — a Simulation Study 139
Magesh Nagarajan, Duncan Shaw, Pavel Albores

The Effects of Information and Evacuation Plans on Civilian Response During the National Dutch Flooding Exercise 'waterproef' 153
Marjolein De Jong, Prof. Dr. Ira Helsloot

Analyzing Evacuation Decisions Using Multi-attribute Utility Theory (MAUT) 163
Paul Kailiponi

Timeline Modelling of Flood Evacuation Operations 175
Stephen Opper Esm, Peter Cinque Oam, Belinda Davies

Analysis of Near-optimal Evacuation Instructions 189
Olga L. Huibregtse, Michiel C. J. Bliemer, Serge P. Hoogendoorn

On the Use of Network Flow Techniques for Assigning Evacuees to Exits 205
Daniel Dressler, Martin Groß, Jan-Philipp Kappmeier, Timon Kelter, Joscha Kulbatzki, Daniel Plümpe, Gordon Schlechter, Melanie Schmidt, Martin Skutella, Sylvie Temme

A Multi-objective Optimization Approach for Evacuation Planning 217
Fang Yuan, Lee D. Han

Author Index