



# Contents

	<b>About the Author</b>	<b>xv</b>
	<b>Contributors</b>	<b>xvii</b>
	<b>Foreword</b>	<b>xxv</b>
	<b>Acknowledgments</b>	<b>xxix</b>
<b>Part I</b>	<b>Introduction</b>	<b>1</b>
Chapter 1	Transportation Security and Its Impact	3
	<i>Clifford R. Bragdon, Ph.D., AICP, FASA</i>	
	Overview	3
	Purpose and Organizational Framework	9
	Section I: Introduction	9
	Section II: Modal Aspects of Transportation Security	10
	Section III: Technology Applications to Transportation Security	10
	Section IV: Transportation Security Solutions	11
Chapter 2	Transportation Security Through Logistics Transformation	15
	<i>Charles P. Nemfakos and Sarah R. James</i>	
	Chapter Overview	15
	Introduction	16
	The Global Economy and National Security	18
	Economic Security and Enhanced Productivity	21
	Enhanced Productivity and Logistics Transformation	23
	Multiple Scenarios of Logistics Transformation	24
	Defense and Logistics Transformation	26
	Transportation Security Through Logistics Transformation	28
	Transportation Security and National Security	32
	Summary and Conclusions	33

<b>Chapter 3</b>	<b>The Need for a Transportation Systems Approach</b>	<b>35</b>
	<i>Clifford R. Bragdon, Ph.D., AICP, FASA</i>	
	Introduction	35
	Impediments to an Integrated System of Movement	37
	Modal Bias	37
	Institutional Protectionism and Self-Interest	38
	Social Conditioning: A Drive-Thru Society	39
	Dominance of Motor Vehicles in Governmental Planning and Policy	43
	Spatial Management and Diet Cities	45
	No Consensus in the Definition of Terms: Intermodal	46
	Governmental Responsibility Usurping Citizen Responsibility	47
	Sustainability and Security: Conflicting Goals of Infrastructure Risk?	48
	Transportation System Elements	49
	Organizational Framework: Definition	50
	Transportation-Based Modal Elements	51
	Transportation Systems Network	52
	Modeling and Simulation	54
	Forensic Transportation Logistics Analysis	64
	Summary	67
<b>Chapter 4</b>	<b>Mobility Security and Human Behavior</b>	<b>71</b>
	<i>Michael Workman, Ph.D.</i>	
	Introduction	72
	Mobility and Security Theory	72
	Deterrence Theory	74
	Terror Management Theory	75
	Protection Motivation Theory	76
	Mobility Security Initiatives	76
	Expansion of Institutional Initiatives	78
	Expansion of Commercial Initiatives	81
	Commercial Fear	84

	Fear Appeals and Human Coping Behavior	87
	Fear Appeals and Psychosocial Functioning	87
	Surveillance and Psychosocial Functioning	89
	Summary and Conclusions	90
<b>Part II</b>	<b>Modal Aspects of Transportation Security</b>	<b>97</b>
<b>Chapter 5</b>	<b>Road Transportation and Infrastructure Security</b>	<b>99</b>
	<i>L. David Shen, Ph.D.</i>	
	Introduction	99
	The National Highway System	101
	Security Issues	102
	Security Threats	107
	Challenges for State DOTs	112
	Road Elements and Vulnerability	114
	Countermeasures	115
	Additional Resources	120
	Summary	121
<b>Chapter 6</b>	<b>Aviation Security</b>	<b>125</b>
	<i>Thomas L. Jensen</i>	
	The Evolution of Aviation Security	125
	Aviation Security Turning Point: 9/11	127
	U.S Aviation Security Players	129
	Government Players	129
	Airport Players	133
	Airline Players	135
	Industry Players	135
	Airport Security Areas	136
	Checked Baggage	136
	Passenger Checkpoint	138
	Cargo	140
	Perimeter	141
	Access Controls and Biometrics	142
	The Future of Airport Security	143

	Technologies	143
	JPDO–NextGen	145
	PAX 2.0	146
	Pre-Operational and Operational Testing	146
	Conclusions	147
	Important Definitions and Terms	147
<b>Chapter 7</b>	<b>Maritime Security</b>	<b>149</b>
	<i>John C.W. Bennett, J.D., LL.M.</i>	
	Introduction	149
	Historical Piracy	150
	Maritime Security Issues	151
	Modern Piracy	151
	Maritime Terrorism	154
	The Pre-9/11 International Legal Regime Relevant to the Security of the Maritime Transportation System	158
	The Impact of 9/11 on the International Legal Regime	161
	The 2005 Protocol to the SUA Convention	161
	Amendments to the 1974 Safety of Life at Sea Convention	162
	Obligations and Responsibilities	166
	Means and Mechanisms	169
	United States Legislation and Regulations	173
	Broad-Brush Evaluation: Is the Maritime Transportation System Now More Secure?	177
	Conclusion	179
<b>Part III</b>	<b>Technology Applications to Transportation Security</b>	<b>183</b>
<b>Chapter 8</b>	<b>Computer and Transportation Systems Security</b>	<b>185</b>
	<i>Peter V. Radatti, Ph.D.</i>	
	Security Is Flawed	186
	Holistic Security Design	186
	Physical Security and Locks Have Limited Value	188
	The Trade-Off Between Security and Accomplishment	189
	The Attacker Has the Advantage	189
	Cameras, Computers, and Physical Security	192

	Computers and Physical Security	194
	Holistic Security Design Is Transparent and Passive	198
	Radatti's Rules of Computer Security	199
	Disaster Recovery	199
	Time Management Is Part of Security	203
	Conclusion	203
<b>Chapter 9</b>	<b>Intermodal Transport Security Technology</b>	<b>205</b>
	<i>Robert Sewak, Ph.D.</i>	
	Introduction	205
	History	208
	The Threat	208
	Container Security Measures	210
	Customs–Trade Partnership Against Terrorism (C-TPAT)	210
	Container Security Initiative (CSI)	211
	The 24-Hour Advance Manifest Rule	211
	Automated Targeting System (ATS)	211
	The 100% Screening Requirement	212
	Secure Freight Initiative (SFI)	212
	The Problem Persists	213
	Technological Solutions	214
	Container Tracking Technologies	216
	Maritime Piracy Technology	217
	Summary	218
	Conclusion	220
<b>Chapter 10</b>	<b>Transportation Security: Applying Military Situational Awareness System Technology to Transportation Applications</b>	<b>225</b>
	<i>William S. Pepper IV</i>	
	Introduction	225
	Situational Awareness	226
	Integrated Situational Awareness	226
	The Information Challenge	228
	Situational Awareness and Decision Support	229
	Visualization and Display Tools	234
	Access Control Systems	236

	Video Camera Systems	238
	Predictive Analysis Tools	241
	Information Sharing	241
	Scalable and Flexible Architecture	241
	Using a Situational Awareness System to Manage an Incident	243
	Situational Awareness System Summary	244
	Communications Network Management for Transportation Security	245
	Network Operations Centers	246
	Network Operations Center (NOC) for Situational Awareness Operations	246
	FCAPS Requirements Summary	250
	Data Fusion and Data Correlation for Transportation Security Situational Awareness Systems	254
	Data Correlation and Control	256
	Operational Example of a Transportation Security Situational Awareness System in a Seaport Scenario	259
	Summary	263
	<b>Part IV Transportation Security Solutions</b>	<b>267</b>
Chapter 11	Automatic Identification and Data Capture (AIDC): The Foundation of Military Logistics	269
	<i>Corey A. Cook and Thomas A. Bruno</i>	
	Introduction	269
	Military Logistics Technology	270
	Automated Identification Technology	270
	Logistics Processes	272
	Automated Information Systems Integration with AISs	292
	Summary	295
Chapter 12	Infrastructure Recovery Initiatives: A Retrospective Assessment	297
	<i>Ralph V. Locurcio, Brig. Gen. (Ret.), P.E.</i>	
	Introduction	297
	Recent Examples of Disaster Recovery Operations	298

Regional Transportation Operations: The FIRST Concept	299
Step 1: Response Cells	299
Step 2: Response Organizations and Policies	300
Step 3: Training	301
Step 4: Simulation	302
Scientific Background and Approach	303
Project Management in the Kuwait Recovery Operation	304
Principles of Disaster Recovery Construction	304
Project Environment and Background	305
Planning for the Recovery Operation	306
Organization and Staffing	315
The Project Management Process	317
Contracting	320
Logistics	324
Budget Control	326
Political Factors and Partnering with the Host Nation	328
Leadership and Partnership	331
Lessons Learned	334
Application to Recent Disasters	335
Planning for the Recovery Operation	336
Organization and Staffing	338
Project Management	339
Contracting	340
Budget Control	341
Leadership and Partnership	342
Summary	343
<b>Chapter 13</b> Immigration and National Security: Best Practices	<b>345</b>
<i>Jo Ram</i>	
Introduction	345
Protecting Borders	347
ICAO Regulations	350
Evolution of the MRTD	353
Electronic Passport and ID Solutions	359
Border Control	364

	Deportation	365
	Apprehension Exercises	366
	Data Security and Privacy	370
	Summary: National Security Best Practices	374
<b>Chapter 14</b>	<b>Fast Integrated Response Systems Technology (FIRST) and Establishing a Global Center for Preparedness (GCP)</b>	<b>377</b>
	<i>Clifford R. Bragdon, Ph.D., AICP, FASA</i>	
	Overview	377
	Global Partnership Model: Issues	379
	Sector Role Players	381
	Disaster Management Life Cycle	383
	Disaster Prevention Planning and Management	385
	A Multisensory Environment	389
	The Global Center for Preparedness (GCP)	393
	Need	393
	Philosophy	394
	Framework	395
	Missions	397
	Administrative Structure	400
	National Security and Transcommunication-Based Initiatives	400
	Re-Examination of Modal Elements	401
	Fast Integrated Response Systems Technology (FIRST)	406
	Conclusion	407
	<b>Index</b>	<b>413</b>