

TRANSPORT PLANNING & TRAFFIC SAFETY

MAKING CITIES, ROADS, & VEHICLES SAFER

EDITED BY

GEETAM TIWARI

DINESH MOHAN

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Preface

TRIPP, the Transportation Research and Injury Prevention Programme at the Indian Institute of Technology Delhi, had earlier (in 2005) brought out, *The Way Forward: Transportation Planning and Road Safety* which may, in a manner of speaking, be considered a prequel to the present volume. Certain important areas of concern do overlap but the problems of safety and mobility are eternal while the context of time and place is constantly shifting and changing, hence the periodic need to review and reassess the subject under consideration. TRIPP has been organizing an annual International Course on Transportation Planning and Traffic Safety since 1991. The structure and content of the course has been modified every year based on the feedback received from the participants and the Course faculty. The content of *Transport Planning and Traffic Safety: Making Cities, Roads, and Vehicles Safer* is based on the lectures delivered in the course, supplemented by relevant additional texts. This book is intended to be the source book for road safety training courses as well as an introductory textbook for graduate level courses on road safety taught in engineering institutes.

In recognition of the importance of Road Safety as a major health issue the World Health Organisation has declared 2011–2021 the Decade of Safety Action. Several countries in Europe, North America and Asia have been successful in reducing fatalities and injuries due to road traffic crashes; however, many low income countries continue to experience high rates of traffic fatalities and injuries. This book brings together the international experience and lessons learnt from countries which have been successful in reducing traffic crashes and their applicability in low income countries. The content is interdisciplinary and aimed at professionals – traffic and road engineers, vehicle designers, law enforcers, and transport planners. The objective is to highlight the public health and systems approach of traffic safety with the vulnerable road user in focus.

Geetam Tiwari
Dinesh Mohan

Abbreviations

- ABS – Anti-lock Braking System
- AICC – *Autonomous Intelligent Cruise Control*
- AIS – Abbreviated Injury Scale
- ATDs – Anthropometric Crash Test Dummies
- BRT – Bus Rapid Transit
- CODEm – Cause of Death Ensemble Modeling
- COPD – Chronic obstructive pulmonary disease
- DALE – Disability-Adjusted Life Expectancy
- DALY – Disability-Adjusted Life Year
- EB – Empirical Bayes
- ESC – Electronic Stability Control
- FHWA – Federal Highway Administration
- GBD – Global Burden of Disease
- GDP – Gross Domestic Product
- GHBMC – Global Human Body Modeling Consortium
- HBA – Hydraulic Brake Assist
- Healy – Health Life Year
- ICTCT – International Committee on Traffic Conflicts Technique
- IFSTTAR – The French Institute of Science and Technology for Transport, Development and Networks
- IIT – Indian Institute of Technology
- IMRSC – Inter-Ministerial Road Safety Committee
- IPT – Intermediate Public Transport
- IPC – Indian Penal Code
- IRC – Indian Roads Congress
- IRTAD – International Traffic Safety Data and Analysis Group
- IRSB – Inter-sectoral Road Safety Board
- ISA – Intelligent Speed Adaptation
- LMC – Low Motorised Countries
- LMICs – Low- and middle-income countries
- MCCD – Medical Certification of Cause of Death
- MHFW – Ministry of Health and Family Welfare, India
- MoRTH – Ministry of Road Transport and Highways, India
- MoUD – Ministry of Urban Development, India
- NCDs – Non-communicable diseases
- NCR – National Capital Region
- NCTD – National Capital Territory of Delhi
- NH – National Highway
- NHAI – National Highway Authority of India
- NHTSA – National Highway Traffic Safety Agency
- OAPEC – Organization of Arab Petroleum Exporting Countries
- OECD – The Organisation for Economic Co-operation and Development
- OR – odds ratio

- PIL – Public Interest Litigation
- PMHS – Post Mortem Human Subjects
- RSST – Road Safety Study Team
- RTC – Road Traffic Crashes
- SIDA – The Swedish International Development Cooperation Agency
- SRS – Sample Registration System
- TERI – The Energy and Resources Institute, New Delhi
- THUMS – Total Human Model for Safety
- TRACE – Traffic Accident Causation in Europe project
- TRL – Transport Research Laboratory
- TRIPP – Transportation Research and Injury Prevention Programme
- TRRL – Transport and Road Research Laboratory (UK)
- UEMOA – West African Economic and Monetary Union
- VKT – Vehicle Kilometers Travelled
- VMT – Vehicle Miles Travelled
- VRUs – Vulnerable Road Users
- WHO – World Health Organisation
- YLD – Years lived with disability
- YLLs – Years of life lost

Authors

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Christer Hyden obtained his civil engineering degree at Lund University in 1971. Since then he has been employed at the Lund University in the Department of Traffic Engineering (now the Department of Technology and Society). He completed Ph.D. research on Traffic Conflicts: The development of a method for traffic safety evaluation: The Swedish conflict technique. His main areas of research are safety in urban areas, assessment technique like the traffic conflict technique, speed, speed limiters in cars, and ITS. He has been the Chairman of ICTCT-International Cooperation on Theories and Concepts in Traffic Safety. He won the Volvo traffic Safety Award, 1991, and Sigge Thernvalls Stora Byggbpris.

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She continues to work with several European organisations on road safety data collection and management policies.

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Contents

CHAPTER 1 ■ Understanding the Road Safety Performance of OECD Countries	1
<hr/>	
KAVI BHALLA and DINESH MOHAN	
1.1 OVERVIEW	2
1.2 ECONOMIC DETERMINISM: ROAD SAFETY PERFORMANCE AS A DEVELOPMENTAL OUTCOME	4
1.3 RISK SUBSTITUTION: CAR OCCUPANTS ARE AT MUCH LOWER RISK THAN PEDESTRIANS	7
1.4 POLITICAL ACTION: THE ROLE OF INSTITUTIONS AND INTERVENTIONS	10
1.5 CONCLUSION: WHAT DOES THIS ALL MEAN FOR DEVELOPING COUNTRIES?	13
CHAPTER 2 ■ Road Traffic Injury as a Public Health Problem	17
<hr/>	
DINESH MOHAN	
2.1 INTRODUCTION	18
2.2 TRANSPORTATION SYSTEMS AND HUMAN ERROR	19
2.3 ROAD TRAFFIC INJURY AS A DISEASE	20
2.3.1 There is no basic difference between traffic injuries and the occurrence of any other disease	20
2.3.2 Road traffic injury can be defined as a disease that results from an acute exposure of the human body to a transfer of energy from the environment around it	20
2.3.3 “Accidents” and injuries are not “Acts of God”	21
2.3.4 Not all injuries can be prevented	21
2.3.5 Injury control measures can be developed systematically	22
2.4 DEVELOPING INJURY CONTROL MEASURES	22
2.4.1 Safe infrastructure and systems	22
2.4.2 The energy control approach and Haddon’s ten strategies	23
2.4.3 Resource allocation analysis, strategy identification, and planning – Haddon’s matrix	24
2.5 SUMMARY	26
CHAPTER 3 ■ Public Health Burden of Road Traffic Injuries	29
<hr/>	
KAVI BHALLA	

3.1	HEALTH IMPACTS OF ROAD TRANSPORTATION SYSTEMS	29
3.1.1	Why do countries build roads?	30
3.1.2	How does road transport harm health?	31
3.2	MAGNITUDE OF THE PUBLIC HEALTH BURDEN OF ROAD TRAFFIC	32
3.2.1	About the Global Burden of Disease (GBD) Project	33
3.2.2	Estimates of the Global Burden of Disease	34
3.3	MEASURING THE LOCAL BURDEN OF INJURIES	37
3.3.1	General approach	37
3.3.2	Definitions of key concepts	38
3.3.3	Triangulating from local data sources	39
CHAPTER 4 ■ Land Use-Transportation Planning, Mobility and Safety		45
GEETAM TIWARI		
4.1	INTRODUCTION	46
4.2	ROAD TRAFFIC CRASHES AND LAND USE PLANNING	47
4.2.1	Transportation planning system and safety	48
4.3	CONFLICTS AND TRADE OFFS IN TRANSPORTATION PLANNING	50
4.4	TRANSPORT-LAND USE PATTERNS IN LOW INCOME COUNTRIES	51
4.4.1	Urban planning policies and relocation of poor households	52
4.5	IMPACT OF TRIP LENGTH AND MODE OF TRAVEL ON FATALITY RISK	54
4.6	MOBILITY AND SAFETY CONFLICT	55
CHAPTER 5 ■ Safety Promotion: Education and Legislation		59
DINESH MOHAN		
5.1	INTRODUCTION	60
5.2	INFLUENCE OF SYSTEMS AND THE ENVIRONMENT ON 'HUMAN ERROR'	60
5.3	LIMITATIONS OF ROAD USERS	61
5.3.1	Perception of risk	61
5.3.2	Involvement of the whole population	61
5.3.3	Evidence on limits of education	62
5.3.3.1	Example 1. Promotion of seat belt use	62
5.3.3.2	Example 2. Promotion of helmet use	63
5.3.3.3	Example 3. Children and traffic safety	63
5.3.3.4	Example 4. Driver education	64
5.4	EFFECTIVE COMMUNICATION	65
5.4.1	Effective education programmes	65
5.4.2	Unsuccessful education programmes	66
5.5	CONCLUSIONS	66

CHAPTER 6 ■ Recording of Traffic Crashes **71**

GEETAM TIWARI

6.1	INTRODUCTION	72
6.2	TRAFFIC CRASH DATA	72
6.2.1	Primary level data in India	73
6.2.2	Error analysis of data recording forms	74
6.2.3	Reliability and accuracy of recorded data — case study Bangalore	74
6.2.4	Critical variables for identifying causal factors	76
6.2.5	Use of data in recommending countermeasures	76
6.2.6	Black spot analysis	77
6.2.7	RADMS (Road Accident Data Management System) Tamil Nadu	77
6.2.8	Filling out the Accident Recording Form (ARF)	78
	6.2.8.1 Role of the Admin cell	79
	6.2.8.2 Strengths and weaknesses of RADMS	79
6.2.9	National Crime Record Bureau (NCRB) data	80
6.3	CONCLUSIONS	81

CHAPTER 7 ■ Traffic Conflict Techniques: Some Data to Supplement Accident Analysis **89**

CHRISTER HYDEN

7.1	INTRODUCTION	90
7.1.1	The lack of safety assessments	90
7.1.2	The insufficiency of using only accidents in assessment	91
7.1.3	Traffic conflicts – an overview	91
7.2	THE SWEDISH TRAFFIC CONFLICTS TECHNIQUE	94
7.2.1	Training of observers and reliability	94
7.2.2	A new definition of serious conflicts	95
7.2.3	Product validation	97
7.2.4	Process validation	98
7.2.5	Use of the technique	98
	7.2.5.1 Recording	98
	7.2.5.2 Analysis of conflict studies	98
7.2.6	Example of practical use of conflict, behavioural and interactional studies in India	100
	7.2.6.1 Background	100
	7.2.6.2 Results	100
	7.2.6.3 Output of the project	103
7.2.7	A novel approach to the severity concept	104
7.2.8	Image processing – more conflicts, more information	104
	7.2.8.1 Background	104

7.2.8.2	Video analysis system at Lund University (Laureshyn 2010)	105
7.2.8.3	Video analysis system at University of British Columbia (Ismail et al 2009)	105

CHAPTER 8 ■ Statistical Considerations in Road Safety Research 109

SHRIKANT I. BANGDIWALA

8.1	INTRODUCTION	110
8.2	SAMPLING WHAT WE STUDY	111
8.3	NON-CONSTANT EXPOSURE	112
8.4	COUNTING RARE EVENTS	113
8.5	MULTIPLE FACTORS OPERATING IN DIFFERENT PHASES	114
8.6	INTERVENTION APPROACHES – TACKLE THE WORST CASES	115
8.7	INTERVENTION APPROACHES – DESIGN OPTIONS	116
8.8	UNDERSTANDING RELATIONSHIPS – STATISTICAL ANALYSIS	118
8.8.1	Comparing binary variables across groups	120
8.8.2	Comparing count variables across groups and over time	121
8.9	STATISTICAL TESTING AND THE ROLE OF CHANCE	122
8.10	CONCLUDING REMARKS	123

CHAPTER 9 ■ Speed and its Effects on Road Traffic Crashes 127

DINESH MOHAN

9.1	INTRODUCTION	127
9.2	THE EVIDENCE	128
9.2.1	Reaction time	130
9.2.2	Braking distance	130
9.2.3	Relationship of speed to severity of injury sustained by crash victims	130
9.3	SPEED LIMITS	132
9.4	ROAD STRUCTURE AND SPEED	133
9.5	CONCLUSIONS	133

**CHAPTER 10 ■ Human Tolerance to Injury: Role of Biomechanics and
Ergonomics** 137

DINESH MOHAN

10.1	INTRODUCTION	138
10.2	METHODS OF BIOMECHANICS RESEARCH	138
10.2.1	Use of artificial systems	138
10.2.2	Use of volunteers	139
10.2.3	Use of human cadavers	139
10.2.4	Animal experiments	140
10.2.5	Computer models	140
10.3	BIOMECHANICS AND MOTOR VEHICLE OCCUPANT INJURIES	140

10.3.1	Bus safety	141
10.3.2	Safety of road users outside the bus	141
10.3.3	Crashworthiness of Country Specific Motor Vehicles (CSMV)	141
10.4	ERGONOMICS	142
10.4.1	Manual handling	142
10.5	CONCLUSION	143
CHAPTER 11 ■ Safer Vehicle Design		145
SUDIPTO MUKHERJEE and ANOOP CHAWLA		
11.1	INTRODUCTION	145
11.1.1	Safety must be engineered	146
11.1.2	Newton's means of safety	146
11.1.3	Slow it down	147
11.1.4	Design for VRU	147
11.2	ADVANCED METHODOLOGIES	147
11.3	CONCLUSIONS	149
CHAPTER 12 ■ Risk Evaluation and Road Safety		151
SYLVAIN LASSARRE		
12.1	INTRODUCTION	151
12.2	RISK INDICATORS IN PUBLIC HEALTH	152
12.2.1	Mortality rate and number of years of life lost	153
12.2.2	Factors influencing the mortality rate	154
12.2.2.1	Demographic factors	155
12.2.2.2	Geographical factors	155
12.2.2.3	Mobility factors	156
12.2.2.4	Economic factors	157
12.3	RISK INDICATORS IN ROAD TRANSPORT	160
12.4	MODELS OF ACCIDENT FREQUENCY AND SEVERITY	161
12.5	CONCLUSION	162
CHAPTER 13 ■ Investigating Driving Failures and Their Factors by In-Depth Accident Studies		163
PIERRE VAN ELSLANDE		
13.1	INTRODUCTION	164
13.2	IN-DEPTH ACCIDENT STUDY AS A COMPLEMENTARY TOOL FOR ROAD SAFETY	165
13.2.1	Data collection and elaboration	165
13.2.2	A sequential analysis	166
13.2.2.1	The driving phase	166
13.2.2.2	The rupture phase	167
13.2.2.3	The emergency phase	167

13.2.2.4	The crash or collision phase	167
13.2.3	A functional analysis of human difficulties	168
13.2.3.1	Driving as a complex task calling for system adjustment	168
13.2.3.2	Human functional failures	168
13.2.3.3	Factors of human failures	170
13.3	IN-DEPTH STUDY OF POWERED TWO-WHEELER ACCIDENT MECHANISMS	170
13.3.1	PTW losses of control	171
13.3.2	Wrong interaction with others	172
13.4	CONCLUSION	173
CHAPTER 14 ■ Human Body Models		175
<hr/>		
KARIN BROLIN		
14.1	INTRODUCTION	175
14.2	MODELING AND METHODS	176
14.3	OVERVIEW OF WHOLE BODY MODELS	179
14.3.1	Crash models	179
14.3.2	Pre-crash simulations	181
14.3.3	Biomechanical properties	182
14.3.4	Hard tissues	182
14.3.5	Soft tissues	183
14.4	DISCUSSION	184
CHAPTER 15 ■ Highway Safety in India		187
<hr/>		
GEETAM TIWARI		
15.1	INTRODUCTION	188
15.2	TRAFFIC CRASHES ON INDIAN HIGHWAYS	188
15.3	TRAFFIC ON NATIONAL HIGHWAYS AND STATE HIGHWAYS	190
15.4	SAFETY ON NATIONAL HIGHWAYS	191
15.5	LITERATURE REVIEW	194
15.5.1	Shoulder width	195
15.5.2	Highway geometry (horizontal curves)	195
15.5.3	Guardrails	196
15.5.4	Rumble strips	197
15.5.5	Designing safe highways – active speed control on highways	198
15.5.6	Safety management on highway corridors passing through desolate areas	199
15.5.7	Speed management on highways passing through agricultural fields	199
15.5.8	Speed management on highways passing through industrial areas	199