

**Second India Disaster Management Congress  
(November 4-6, 2009)  
Thematic Cluster C: Man-Made Disasters  
Session 3: Road Accidents**

**Introduction**

Road Safety incorporates the development and management of road infrastructure, provision of safer vehicles, legislation and law enforcement, mobility planning, provision of health and hospital services, child safety, urban land use planning etc. Its ambit spans engineering aspects of both, roads and vehicles on one hand and the provision of health and hospital services for trauma cases (in post-crash scenario) on the other. Road safety is a shared, multi-Sectoral, responsibility of the government and a range of civil society stakeholders.

According to WHO statistics (year 2002) about 11.8 lakh people die every year in road accidents, the world over, of which 84,674 deaths are reported to take place in India. In 2004 the number of deaths had increased to 92,618. The mortality rate in India is 8.7 per hundred thousand population as compared to 5.6 in UK, 5.4 in Sweden, 5.0 in The Netherlands and 6.7 in Japan. In terms of mortality per 10,000 vehicles, the rate in India is as high as 14 as compared to less than two in developed countries. The cost of road crashes has been assessed at one to two per cent of GDP in developed countries. A study by the Planning Commission in 2002 estimated the social cost of road accidents in India at Rs.55000 crore annually (2000 prices), which constitutes about 3% of the GDP.

**Context**

There is an alarming increase in road accidents on Indian roads, at a rate of 8% per year while the population of the country has increased by only 2.1 percent. In fact, out of one lakh accidental deaths in India, road accidents, alone account for as many as 60,000 lives. The statistics for the country indicate that there is an alarming increase both in the number of deaths and those injured. The problem of Road Traffic Accident has assumed alarming proportion with ever increasing number of motor vehicles competing for the limited paved space. The resultant congestion in traffic is inevitable and the consequences are road accidents.

Road safety, as a problem, has been analysed in many different ways. Prominent amongst them are the four basic elements; 1) Machine Factor, 2) Human Factor, 3) Engineering Factor and 4) Environment Factor.

Many countries including India have designed road safety strategies but the success of road safety strategies in all countries depends

upon a broad base of support and common action from all stakeholders.

Thus, this session in the Disaster Management Congress would encompass various issues pertaining to Road Accidents and Road Safety. Session would also provide a platform for congregating the segregated research and initiative undertaken for road safety and awareness generation.

### **Objectives:**

The session would have following broad objectives:

- List the Issues, Challenges and causes for Road accidents
- List out various initiatives taken both nationally and globally for road safety
- List various remedial measures for road accidents
- List Civil society and NGO initiatives for Road Accident Initiatives
- Possible ways of Trauma care for Accident survivors
- Policy of Road Transport

### **Sub – Themes**

The Session will deal with are Causes of Road Accidents, Issues and Challenges, Remedial Measures, Policy regarding Road Safety, Response to Road Accidents, Trauma Care for Accidents and NGO/Civil Society interventions for Road Safety.

### **Expected Outcome**

The session is expected to identify various issues and challenges and bring out the areas of comprehensive and actionable research in the field.

## Session Plan

**Session Chairman:** Shri Sunder, Former Secretary, MORT & Fellow, TERI

**Organiser:** Dr. Prakash Jadhav, Faculty, CRTI, Pune

**Facilitator:** Shri Shekher Chaturvedi, faculty, NIDM

The session will be conducted on November 5, 2009 and will be of three hours duration. Detailed session plan is as follows:

Time slot	Speaker
1000 - 1015	Chairman's opening remarks
1015 - 1035	Prof. Dinesh Mohan
1035 - 1055	Prof. Madhav Badami (subject to his confirmation)
1055 - 1115	Dr. Gururaj
1115 - 1135	Representative of ITF
1135 - 1155	Mr. Rohit Baluja
1155 - 1215	Mr. Nalin Sinha
1215 - 1235	Mr. SB Zhaveri
1235 - 1255	Mr. Ranjan Mishra
1255 - 1315	Dr. Prakash Jadhav

Each presentation would be of fifteen minutes and five minutes would be kept for discussion

## Brief Outline of Abstracts

### **Road crashes and deaths in India: Need for integrated policies and programmes**

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Recent years have witnessed rapid motorisation, urbanisation, industrialisation, migration and other changes consequent to globalisation and liberalising economic policies of successive governments in India. An accompanying effect of these changes is the increasing road crashes and deaths due to lack of safety policies and programmes. The psychological suffering of individuals and families are hard to measure and are better realised with interaction of survivors. Road crashes are predictable and preventable and can be controlled effectively, if safety of people on roads is given importance by government, professionals, vehicle manufacturers and the civil society. This requires a Safe systems approach with importance given for making safe roads and safe vehicles to make people safe in road environments in a coordinated and integrated system.

### **Pedestrians, Cyclists and Non-motorised Transport in India: Road Safety challenges and possible solutions**

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In India pedestrians, bicycles, cycle-rickshaws and other non-motorised vehicles (NMVs) have very large presence in urban areas including most metro cities. In spite of the rapid growth in number of motor vehicles in the country, Non-motorised Transport (NMT) has significant modal share in city traffic and continues to grow due to its affordability, flexibility and various environmental, social, and economic benefits to a large section of our society. Through this paper, an attempt has been made to highlight the problems and serious concerns related to road safety and fatalities of pedestrians and non-motorised transport users in Indian cities and discuss various options and remedies to tackle this issue.

### **Road accidents - The man made disasters**

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This paper talks about the fact that there is no provision in Motor Vehicles Act to curb wrong habits of driving like wrong use of signals, misunderstand or ignore markings painted on road, give signal to be overtaken at wrong time and lack of knowledge of lane driving in case of 4 lane or 6 lane Highway or Express way. Ignorance about driving lane and Overtaking lane developing wrongly on Indian roads and these wrong habits only seem to be the main reason of road accidents (man made disaster).

### **Road Accidents Mitigation Program**

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'Aetiology' means a branch of science dedicated to finding the causes of something. European researchers have been busy updating the aetiology of road accidents and studying which technologies can make our roads safer for everyone. In our paper we will be suggesting the remedies for mitigating the road accidents whether it be technical or non technical.

## **Issues In The Motor Vehicles Act Related To Road Safety -Legislative Approach To Improve Road Disaster Management**

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Road safety is all about reducing the incidence of road crashes and creating an ambience of assurance of "safety always for all roads". The universally acknowledged factors contributing to road crashes are driver errors, defective vehicles, defective designing of roads, poor climatic conditions and road user behaviour. None of the above factors are directly related to each other. The Motor Vehicles Act and the rules made there under have been legislated basically for eliminating all possible road hazards and improving the road safety scenario. The regulatory aspects of the law ensure that only skilled drivers could be added to the existing drivers' population and only fit and low-emission vehicles stay on roads. One of the core issues related to this poor scenario of road safety is the grey areas within the legislative framework. Thus there is a need to make certain provisions in the Motor Vehicles Act, 1988 and the Central Motor Vehicles Rules, 1989 clearer. It is also felt it is imperative for laying down improved guidelines in the law and leave less scope for the field officers to continue lousy practices, resulting into stricter regime for driver licensing and vehicle certification and ultimately improving the road safety scenario.

### **Air Disaster: Causes and Remedies**

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Disaster is sudden or rapidly developing events that disrupt the prevailing order of life producing danger, injury, illness, death and loss of property. It has got some element of suddenness producing catastrophic results giving very-meager time to respond. When it comes to aviation disaster this response time is comparatively very less. In this paper we have discussed the extent of vulnerability in air disaster, primal role being played by regulatory bodies to ensure air safety. Furthermore various air disasters causes (both technological and sociological) are discussed in-depth with peculiar cases. Beside this an attempt to provide remedial has also been made in order to bring down the air accident rates and hence ensure that air transport is one of the safest means of transport.

### **Vehicle Condition Reporting System (VCRS)**

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Pollution has been a major problem world over. One of the major sources of pollution is through inefficient utilization of fuel by vehicles. Currently there is no reliable method to keep such vehicles in check. We propose to build a system which tracks these vehicles and helps the traffic police to take strict and timely action. This paper deals in building a system to track and reduce vehicular pollution.

### **Man Made Disasters - Road Accidents**

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Roads are the choicest mode of transport, which provides the best connectivity, when compared to the other modes. The developed economy and increased buying capacity of the common public has resulted in the increased Automobile population and with a better quality road-network, there is an exponential growth of traffic along the roads, which in-turn is also the cause for increased Road Accidents. This paper is a case study of Traffic accident prevention along the east coast road.

## **Walking On Delhi Roads Is A Pedestrian Nightmare**

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At national level, over 100,000 persons die every year in road transport accidents in India. In addition, about 1.5 million people are hospitalized and approximately 7 million suffer minor injuries. The estimated annual loss to the country is to the tune of Rs. 550 Billion annually. This is around 3% of the GDP. Such colossal losses should draw our attention. Paper will suggest possible remedies in current scenario, which involves no financial expenditure and can be implemented without delay. This will facilitate Pedestrians in providing normal walking conditions. The system will work to prevent pedestrian casualties and injuries significantly.

## **Innovative methodology for demarcating high road accident risk prone stretches in the mountainous terrain**

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There is growing global concern over burgeoning road accident induced losses. Terrain conditions in the mountainous regions make roads prone to fatal accidents. Sinuosity (high curvature), gradient and width of the hill roads are identified as major factors making these roads accident prone based upon mutual correlation of these basic road parameters, a methodology is evolved for delineating high accident risk prone stretches of mountain roads.

## **'Anti-Collision Device (ACD) Network' - A Train Collision Prevention System (TCPS)**

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Safety violations due to 'human errors or limitations' and 'equipment failures' occasionally result in Train collisions. Patented by Konkan Railway Corporation, 'Anti-Collision Device Network' (also called 'Raksha Kavach', meaning 'A Train Safety Shield') is an on-board train collision prevention system. Designed as a 'non-signal' system, it provides 'non-vital' 'safety enhancement' layer over the existing safety systems of train operations. 'ACD Network' therefore fills up 'safety gaps' left out due to limitations of existing 'signal' based train protection systems.

## **Need & Strategies for Awareness & Preparedness about Emergencies in Carriage of Hazardous Chemicals by Road**

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Need of awareness about emergencies in carriage of hazardous chemicals by road & Strategies to prepare people for facing hazardous chemicals transportation emergencies.

We all are aware of the hazardous nature of manufacturing, storage & transportation of products originating from chemical industry. The paper contains various provisions as laid down in Central Motor Vehicle Rules, 1989 related to carriage of hazardous chemicals covering the driver, vehicle cleaner, chemical consignor, consignee and transporter. The paper further give details about efforts of Government in identifying the stretches on major higher checking susceptible to major chemical accident.

## **Road Infrastructure and measures for minimizing road accidents**

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We all know that total road network is 3.34 million but the road infrastructure is not up to the mark of international level. And India is a middle developed country. We cannot put vast resources in road security. So as these days we are taking too much about swine flu but as data's show we should do something for safety of passengers. 40% of accidental deaths are caused due to road accidents. This paper talks about methodology to minimize road accidents.

## **URBAN ROAD SAFETY PERSPECTIVES, ISSUES AND STRATEGIES – INDIAN SCENARIO**

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Rapid urbanization in developing countries presents tremendous challenges to the transport systems of expanding cities if they are to meet the access and mobility needs of their communities and provide them with a sustainable, safe and healthy environment. To meet this expansion many developing world cities are increasing the capacity of their road networks, but often at the expense of the safety of the vulnerable road users. As a result many people die and are injured unnecessarily in road crashes, with the consequently social, economic and health burdens imposing heavy constraints on sustainable development. The present paper highlights the road accident scenario at state and city level and the issues emerging out of the existing road safety scenario in the country. It discusses various road safety management strategies with a view on reducing the number and severity of road crashes within the context of the development and transport goals of the local authority.