

ROAD SAFETY AUDIT: AN OVERVIEW

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Abstract :- Plying on the road is a multitasking activity that requires road users to manage their attention between various driving and non driving tasks. As present and future road users, they are at the risk of injury or death as a result of road crashes caused by inappropriate road geometrics or inappropriate design. To reduce this risk and to attain sustainable safety, road safety audit can play a pivotal role. Road safety audit comprises of independent assessment of design and various other parameters. This paper discusses the need for Road safety audit and the methodology involved.

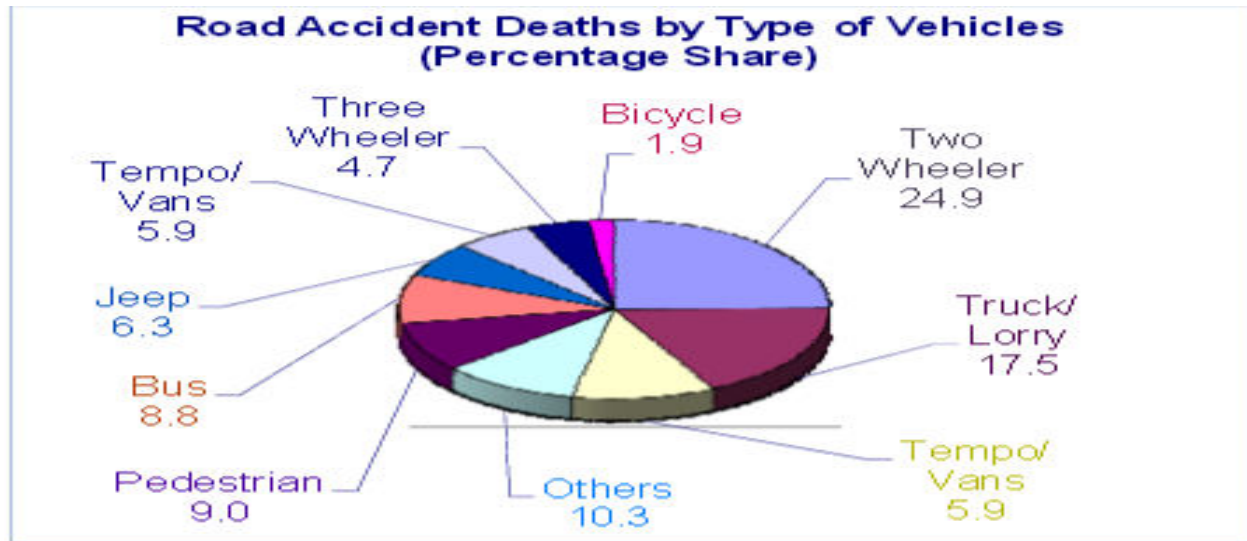
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I. INTRODUCTION

Transportation system has brought about a revolution in the contemporary economic and social relations. However as every coin have two sides, road accidents have become a matter of concern now-a-days. India being a low income, developing country is going through a phase of rapid and unplanned development. One of the major challenges that India has to face is that of road safety. India has the highest number of road traffic fatalities in the world. Hence for a better and safer system road safety audit is a necessity. Road safety audit is a formal procedure for independent assessment of the accident potential and likely safety performance of a specific design for a road or traffic scheme whether new construction or an alteration to an existing road. It is therefore necessary to give increasing attention to the operational characteristics of highway transportation and study the need for better geometric design, capacity, intersections, traffic regulations, signals, traffic signs, roadway markings, parking facilities and design of street lighting. The main idea of road safety is making the road transportation system for the users in the most efficient way without compromising the performance of the system.

II. NEED FOR STUDY

As per the National Crime Records Bureau (NCRB), in the year 2013 there were 4, 43,001 road accidents resulting in the death of 1, 37,423 people(alarming 15 deaths an hour) contributing to 36.4% share of Road Accident Deaths in Un-natural Total Deaths. The “Save life foundation” estimates that road accidents are now the leading cause of death for Indians in the 15-40 age group and that these deaths shave off 2.5 percent of India’s annual GDP. 10% of the global accidents occur in India, in terms of absolute numbers more people die in road crashes in India than anywhere else in the world. Basic traffic rules on road like Lane Discipline, Overtaking, Speeding, Acceleration/Deceleration, U-Turns, Stopping/ Parking, Driver Signals, Night Driving, Mirrors, Tailgating etc are not adhered to by Indian road users.



Road Safety is the product of a complex system that involves interactions among the vehicle, the environment and the road user. Advanced road and traffic engineering, traffic legislation, driver training, traffic enforcement and post crash management are the various ways to improve the system. Thus Road Safety Audit is the need of the hour as it paves a way for safe and superior traffic conditions in the years to come.

III. ROAD SAFETY AUDIT

The process of safety audit as applied to an individual road scheme can be seen as taking place at up to five stages , some of which can be combined for smaller schemes:

1. The feasibility stage: During this stage, the nature and extent of the scheme are assessed, and the starting points for the actual design are determined, such as route options, the relevant design standards, the relationship of the scheme to the existing road network, the number and type of intersections, and whether or not any new road is to be open to all kinds of traffic.
2. The draft design stage: Horizontal and vertical alignments and junction layout are broadly determined. At the completion of this stage, the design should be well enough established so that, if necessary, decisions can be made about land acquisition.
3. The detailed design stage: Layout, signing, marking, lighting, other roadside equipment and landscaping are determined.
4. The pre-opening stage: Immediately before the opening, a new or modified road should be driven, cycled and walked. It is advisable to do this under different conditions such as darkness and bad weather.
5. Monitoring of the road in use: When a new or improved road has been in operation for a few months, it is possible to assess whether it is being used as intended and whether any adjustments to the design are required in the light of the actual behavior of the users.

IV. METHODOLOGY

1. INITIATING THE AUDIT:

The roads authority will usually commission an RSA but in some cases this may be done by the designer or even by Asian development bank or an external funding agency directly. Where there is a road safety unit within the roads authority, suitably qualified staff may exist in-house to organize the audit. They may be to do the audit themselves or they may find it more convenient to subcontract such work to specialist consultants.

2. GATHERING THE PROJECT REPORTS AND PLANS:

The designer must supply the auditor with the necessary information for a thorough audit. This will include feasibility study and engineering design, reports, drawings, etc.

3. STUDYING THE PLANS:

The auditor reviews the plans and makes a preliminary assessment of potential safety concerns and issues based on the information provided, together with knowledge and experience. Some preliminary discussions with designers during the commencement meeting can help clarify reasons for particular design decisions and allow the auditor to explain his role and the audit process.

4. UNDERTAKING THE AUDIT:

Using appropriate checklists, the auditor first reviews the plans and documents. The auditor then visits the site and carries out an audit, identifies any road safety concerns and suggest ways of minimizing them .The audit findings are recorded in a formal report and given to the designer and to the client ,although the report should give clear indication of what needs to be done and possible alternatives ,it is not necessary for the auditor to provide detailed designs-that is the designer's job. However appropriate diagrams, sketches, and annotated copies of plans can be included in the report.

5. COMPLETION:

The designer will now need some time to review the problems and study the auditor's report to see which of the recommendations to adopt and identify those that might be difficult to implement. At this stage, it may be beneficial for the designer and the auditor to meet and see whether all issues can be resolved to both parties satisfaction. If any issues remain unresolved, the designer presents the area of disagreement to the client, who makes the final decision. The designer then describes and records any modifications to the project and the audit is then complete. The recommendations made and agreed changes are rechecked at the commencement of the next stage of the RSA.

V. BENEFITS OF RSA

1. Provide safety beyond established standards.
2. Identify additional improvements that can be incorporated into the projects.
3. Encourage personnel to think about safety in the course of their normal activities, throughout all stages of a project.
4. Invite interdisciplinary input.
5. Enhance the quality of field reviews.

6. Provide learning experiences for audit team and design team members.
7. Provide feedback to highway designers that they can apply to other projects as appropriate.
8. Ensure that high quality is maintained throughout a projects life cycle.

VI. CONCLUSION

Given India's current traffic scenario, Road safety audit is a necessity and not just an option. It is the responsibility of each and every individual to contribute in educating road users about the correct practices for enabling a safe system for oneself and others. As a research community we have the potential to contribute to India's development and we hope this paper has provided some motivation and direction towards road safety and a better future.

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