



INTERNATIONAL JOURNAL OF PURE AND APPLIED RESEARCH IN ENGINEERING AND TECHNOLOGY

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ANALYSIS OF ROAD TRAFFIC ACCIDENTS AND SUGGESTION OF REMEDIAL MEASURES

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Accepted Date: 05/03/2015; Published Date: 01/05/2015

Abstract: Vehicular Traffic on Indian roads is increasing at an alarming rate resulting in frustrating problem of parking, accidents, delay, congestion and environmental degradation. Road accident in India constitution nearly 30-40 % of the total deaths due to accident of all type, and thus emerge as a major killer. With increasing complexities of roads and road transport problem, it is becoming increasingly important to analyze road accidents scientifically to identify accident-prone location as well as counter measures for reducing accident rate. This paper contain the details of an accident study on National Highways OLD BY PASS of Amravati city which includes field survey, traffic control survey, traffic volume survey, study of road design features, adjacent land use, special considerations. The paper includes collection and analysis of accident data for the past six years and suggestion of remedial measures to reduce the accident rate on two national highway stretches.

Keywords: Subcontractors, Labours, Construction, Procedure



PAPER-QR CODE

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Access Online On:

www.ijpret.com

How to Cite This Article:

Ashish K. Agrawal, IJPRET, 2015; Volume 3 (9): 341-348

INTRODUCTION

Transportation contributes to the economic, industrial, social and cultural development of any country. Among the different modes of transportation, road transport plays the most important role as it renders the overall development of the area. Because of the increasing demand of the society, the vehicular traffic on Indian roads is also increasing at an alarming rate, resulting in frustrating problem of parking, accident, delay, congestion and environmental degradation. Road accident in India constitution nearly 30-40 % of the total deaths due to accident of all type, and thus emerge as a major killer. An accident is “occurrence in a sequence of events which usually produces unintended injury, death or property damage”.

OBJECTIVES

- 1) To initiate in-depth traffic accident data collection.
- 2) To understand the nature of accidents and identify causes/problems along selected stretch on OLD BY PASS.
- 3) To provide recommendations based on this study for reducing accidents

METHODOLOGY

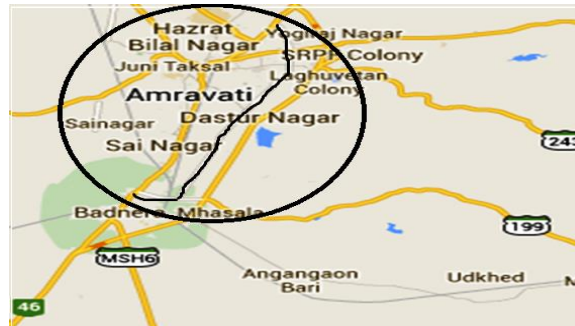
- 1) Collection of accident data pertaining to the stretches under consideration from the case diary files in the road traffic accident cases kept in the highway traffic police station for the past six year 2009, 2010, 2011, 2012, 2013 and 2014.
- 2) Identification of the highest accident-prone spots on basis of the frequency of accident.
- 3) Conduct of detailed field study in respect of deficiencies in geometric design, absence of traffic control devices, etc. at the above spots to identify the causes of accident.
- 4) Statistical analysis of accident data and preparation of the graphical representation of various features of the accident occurred.
- 5) Suggestion of remedial measures to reduce accident rate after analyzing field data and RTA data.

STUDY AREA AND ITS LOCATION

The stretches of roads under the categories of national highway passing through the Amravati had been taken for studies which are been given below: -

1. Old by pass : Stretch from Power House to JuniBastiBadnera (11.8 km)

Traffic congestion is a regular phenomenon in the city because of its roads, frequent processions, public gathering in the city, closure of railway gates, etc. The location of the stretches is shown in the map of the Amravati District as given below in fig



COLLECTION OF ACCIDENT DATA

The details of road traffic accidents occurred during the past six year 2009, 2010, 2011, 2012, 2013 and 2014 on the stretches under consideration were collected from the case diary files in the RTA cases kept in the Highway traffic police station, Amravati. The details collected were analyzed and presented through tables and charts prepared as given in the subsequent section.

DATA ANALYSIS AND INTERPRETATION

The details of accident occurred on highway during six year, 2009 to 2014 were processed separately in order to elicit valid conclusions and thereby to arrive at remedial solution for preventing accident. The detail of accidents reported within the important highway, which are passing from Amravati. The detail investigation was carried out on the stretches.

The detail of monthly road traffic accidents occurred on OLD BY PASS during the year 2009-2014 with respect to total number of cases, types of injury (died, serious, injury), type of vehicles involved (auto, bike, bus, car, truck, heavy vehicles, pedestrian) and time of occurrence (day/night) are presented in fig respectively.

While analyzing the contributing factors of road accident occurred during 2009-2014, it is seen that as per the record available in the police station the causes of accidents reported in 98 % of the cases are 'rash and negligent driving' or 'over speed', or 'reckless overtaking' only. Road engineering factors are not at all reported. Only in very few cases mechanical defects of the

vehicles are reported. During the field, investigation the road condition and deficiencies in geometric design were noted at various accident spots identified.

Observations on monthly variation of total no of accidents occurred on **OLD BY PASS** are given below:

OLD BY PASS

In JANUARY and MARCH number of accidents occurred were more than other months.

Least number of accidents have been occurred in the month of JUNE

Observations on Monthly variation of accident with respect to nature of injuries are as given below:

OLD BY PASS

Maximum numbers of fatalities have occurred in 2009.

Least number of fatalities has occurred in 20011.

Observations on Percentage split-up of accidents with respect to type of vehicles involved in OLD BY PASS are as given below:

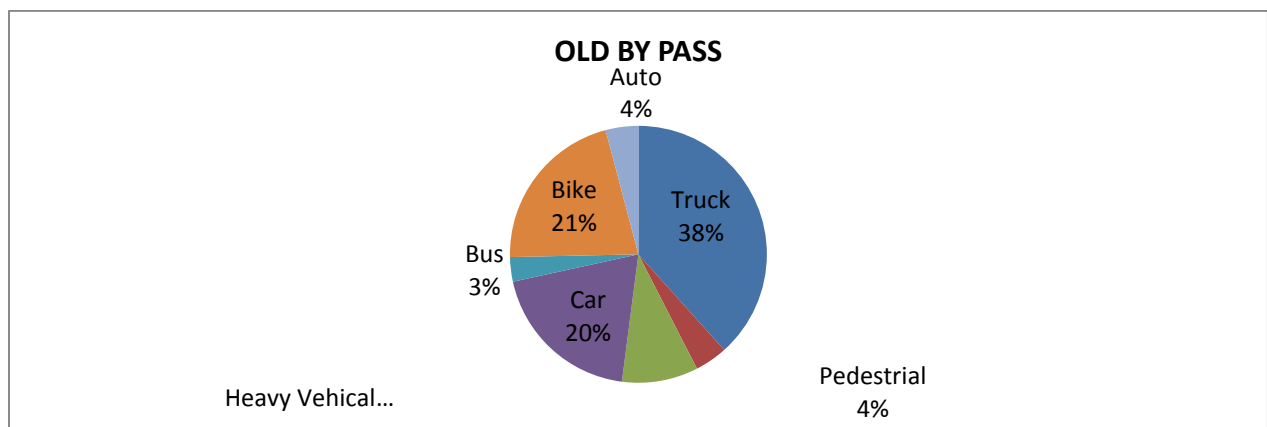


Figure 2 Percentage split-up of accidents with respect to type of vehicles involved in OLD BY PASS

From above figures it has been concluded that the Maximum number of accidents have occurred by TRUCKS and BIKES.

Types of road users injured on OLD BY PASS

OLD BY PASS

From all the accidents that have taken place, in 48% cases Truck drivers have been injured and in 21% cases Bike riders have been in injured on NH 6 .

Identified accident spots (OLD BY PASS)

1. Power House
2. Near Collector Office
3. Near RTO Office
4. Biyani Square
5. Near Circuit House
6. Camp Corner Square
7. Near New Police Quarter
8. Dustur Nagar Square
9. Yeshshoda Nagar Square
10. Near MIDC Office
11. Near Bageya Hotel
12. Railway crossing
13. JuniBastiBadnera

General Problems Identified ON OLD BY PASS

- 1) Huge level difference between shoulder and carriageway.
- 2) Lack of sign boards
- 3) Unauthorized parking on road side during night time.
- 4) Surface condition not good.
- 5) Shrub obstruct the sign boards
- 6) Exit of vehicles from petrol pump is not visible.
- 7) Improper location of sign boards installed by private agencies which obstruct visibility
- 8) Ditch is formed where the side road meets the highway
- 9) Bus stop at junction

Remedial measures and suggestions

The following remedial measures are suggested respectively on problems identified above.

- 1) Maintain the shoulders to flush with the carriageway by proper compaction.
- 2) Install sign boards, at appropriate places.
- 3) Control the unauthorized parking.
- 4) Maintain the road surface properly
- 5) Make sight distance clear by removing the shrubs.
- 6) Put a sign board indicating the presence of a petrol pump.
- 7) Shift the banners, where they could not affect the visibility.
- 8) Repair the damaged portion of the side road meeting the highway.
- 9) Shift bus stop from the junction at least 30 m away.

CONCLUSION

Accident data interpretation

1. In JANUARY and MARCH number of accidents occurred were more than other months in old by pass.
2. The frequencies of accident are more during the Night hours between 10.00 pm to 1.30 am.
3. Out of the total number of accidents, occurred Maximum numbers of accidents have taken place at Night hours on both the highway.
4. From all the accidents that have taken place, in 48% cases Truck drivers have been injured and in 21% cases Bike riders have been in injured on old by pass.
5. From all the accidents that have taken place 47% bike riders, 24% truck drivers and 22% pedestrians have been injured.

General recommendation for OLD BY PASS.

1. In most of the stretches on the NH-6 the shoulder are not well compacted and have huge level difference with carriageway edge, resulted in many accident which might have occurred during overtaking.
2. At the old by pass the traffic sign boards, particularly at intersection, are lacking. They are to install with immediate effect. Pavements marking including zebra line were worn out on the two old by pass. They are to be provided properly.
3. It is observed that at all junctions, the buses are stopping exactly at the junction area itself, which resulted in many accidents due to lack of visibility. Hence the bus stop Are to be strictly shifted 30-40 m away from the junction area.
4. The advertisement boards affecting the visibility of the driver are to be removed or relocated, if required.

ACKNOWLEDGEMENT

We are very thankful to MIDC, SHEGAON NAKA and BADNERA police station for providing us accident data and also to our guide Prof. P. M. CHAPLE for guiding us throughout the session and leading us to a successful completion of this paper.

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