



Suggestions and Improvements to M D Block in Bangalore City

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ABSTRACT

Urbanization has been stemmed as a need to fulfill man's desire for a better life blessed with the best of facilities that one can afford to be living in. This meant more and more people migrated from their heartlands in the rural environments to the cities and major towns in the country, in search of employment and also a better life. This led to rapid expansion of Urban Settlements and coupled with "the wave of rising expectations", his needs kept on multiplying. One of the major aspects that urbanization was witnessed was the rapid explosion in terms of the number of vehicles that have been on the roads in the recent past. As the financial capacities of man increased, more and more people started owning their own vehicles. This phenomenon when taking place in a massive scale leads to problems as congestion and other traffic related issues. India has also seen a similar trend in the rapid growth of traffic in the past two decades. According to the RTOs of the major cities, the vehicle population in the cities have increased manifold, as much as 500 times. Such a massive increase in the vehicle population leads to problems such as frequent traffic snarls, congestion and delays in commute.

Intersection or Junction Study was aimed at estimating the current traffic scenario prevailing at the Particular Junction at Mohammeden Block in Malleshwaram, Bangalore City. This is facilitated by means of surveys which are conducted for the junction in consideration. Based on the survey conducted, work is done in analyzing the performance characteristics of the junction with respect to its present capacity, the maximum limits of capacities and also on possible improvements to the traffic situation prevailing in the Junction/ Intersection

KEYWORDS : Midblock, Commercial vehicles, Traffic signals

1. Introduction:

Accidents, tragically, are not often due to ignorance, but are due to carelessness, thoughtlessness and over confidence. William Haddon has pointed out that road accidents were associated with numerous problems each of which needed to be addressed separately. Human, vehicle and environmental factors play roles before, during and after a trauma event. Accidents, therefore, can be studied in terms of agent, host and environmental factors and epidemiologically classified into time, place and person distribution. This paper lays emphasis on analysis of Mohammeden Block junction at Malleshwaram in Bangalore city. For the purpose of the study, a Junction Traffic Accident (JTA) was defined as accident, which took place on the road between two or more objects, one of which must be any kind of a moving vehicle^[1].

1.2. Road Safety Problem in developing countries:

Growth in urbanization and in the number of vehicles in many developing countries has led to increased traffic congestion in urban centers and increase in traffic accidents on road networks, which were never designed for the volumes and types of traffic, which they are now required to carry. In addition, unplanned urban growth has led to incompatible land uses, with high levels of pedestrian-vehicle conflicts. The drift from rural areas to urban centers often results in large number of new urban residents unused to such high traffic levels. As a result, there has often been a severe deterioration in driving conditions and a significant increase in the hazards and competition between different classes of road users. In addition, the inherent dangers have often been made^[2].

2.0 Accident Scenario in Bangalore

Central Road Research Institute (CRRRI) Study report, (2008) reveals that the accident record of the country is among the worst

in the world. Road accidents have registered a sharp increase recently following rapid growth in vehicle ownership, construction of high speed roads and expressways. Accident rates could go up further unless both traffic rules and road safety measures are enforced strictly. A review on the road crash analysis world over implies that the human factor attributes to the majority of accidents. A similar instance has been observed in India as well as in Bangalore. In Bangalore about 47% of road users killed are pedestrians & 40% are two-wheeler users. In additions to this annually more than Rs 1550 crores are paid as compensation to the victims & their dependents.

2.1 Motorization in Bangalore

The conversion of Bangalore from being once a "Garden City" to present "Black City" has been rapid. Bangalore has grown exponentially in the past two decades. The Booming Software, Biotech and manufacturing industries have magnified the requirements of basic and service employments, which generated and magnified urban sprawl into problematic proportions. Improvement in the quality of life along with substandard public transportation has resulted in spiraling growth of private automobiles. The resultant offshoot of such a high automobile growth along with supply intensive actions of the government is accidents. The Motorization index calculated by the author (vehicles for 1000 persons) best describes the high intensity of vehicular growth, which projects that nearly every 3rd person owns a private vehicle. Motorization index has nearly doubled within a decade. This calculation is highly conservative since it does not consider high intensity of migration of persons with their vehicles from other parts of state to Bangalore. The high intensity of vehicular growth can be known from the simple area analysis. Karnataka State has 1, 91,791 sq.kms of area whereas capital Bangalore as per revised Estimates have 561 sq.kms of developed area, which works out to 0.29% of state area. Nearly

39-40% of vehicles registered in Karnataka state belong to Bangalore. Such a massive number of vehicles occupy 4.8% of total road length available in Karnataka. Availability of such a massive number of vehicles results in violation of individual spaces thus contributing to accidents^[3].

3. Present Investigation

In the present study Junction at Mohammedn Block in Malleshwaram, Bangalore City is considered.

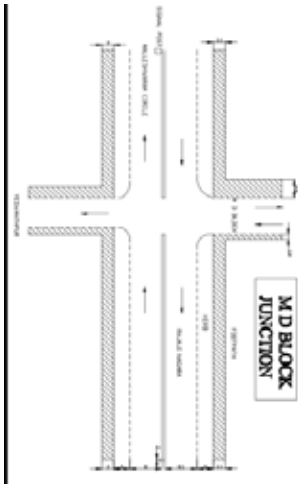


Figure No.1 MD BLOCK Junction



PICTURES TAKEN AT MD BLOCK



Our investigation process is as follows:

1. Collection of accident data from the concerned police station of the junction
2. Visiting the selected junction
3. Traffic volume count per day at each junction
4. Detailed survey
 - a) Measurement of all the roads in the junction
 - b) Measurements of obstruction, medians, corners
 - c) Setback distance from the pavement

MD BLOCK JUNCTION GOOGLE IMAGE



Table No.1 Accident Data at M D Block Junction

Year	Fatal	killed	Non-Fatal	Injured	Total cases
2011	11	12	152	143	174
2012	10	12	123	121	139
2013	11	11	95	91	117
2014	3	4	9	8	15

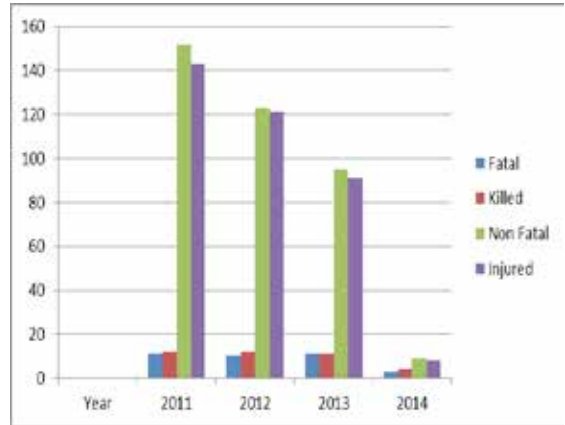


Figure No.2 Accident at MD Block Junction

Table No.2 Traffic Data at M D Block Junction

Direction towards	Total cumulative vehicles/day
Malleshwaram circle	34194
Rajaji nagar	44917
Yeashwanthpur	20060
M D Block	3707

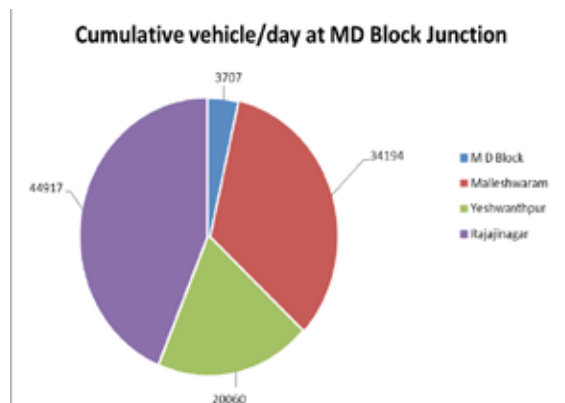


Figure No.3 Traffic data at M D Block Junction

Table No.3 CVPD at M D Block Junction

Direction towards	CVPD
M D Block	455
Malleshwaram	4925
Yeshwanthpur	560
Rajajinagar	2348

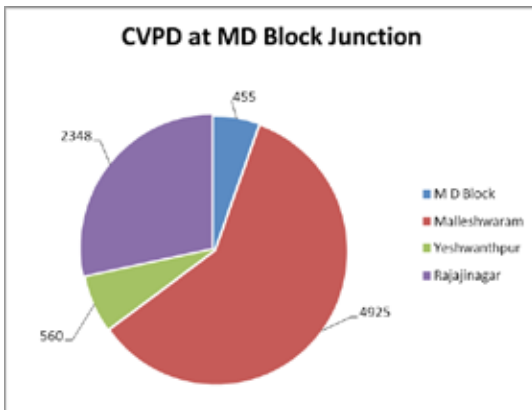


Figure No.3 Traffic data at MD Block Junction

4. DISCUSSIONS & REMEDIAL MEASURES

The main objective of this study was to determine the performance of the un signalized intersection M D Block Junction, Bangalore, Karnataka. The performance evaluation of M D block Junction was done with the several parameters taken during the course of the study. Based on the performance evaluation which was done on the junction, several improvement measures were suggested, out of which the most feasible alternatives have been suggested as a further step in improving the existing traffic scenario.

The following are some of the remedial measures

- a) Pedestrian green time required for major and minor roads are based on walking speed which is equal to 1.2m/s and initial walking time of 7sec. This is the minimum green time required on major and minor roads for vehicular traffic.
- b) Provision of road humps before the pedestrian signals.
- c) Provision of road humps in the stretches before intersection or junction.
- d) Installation of proper sign posts aside the roads.
- e) Providing proper road margins at junctions.
- f) Improving the sight distance at the intersection by increasing the setback distance in the junctions.
- g) Increasing the skid resistance of the pavement.
- h) Provision of grade separated intersections.
- i) Increasing the width of roads at junctions.
- j) Repairs of cracked surface and filling up of pot holes to reduce the accidents.
- k) Installation of cat eyes and road reflectors in the junctions and also near the road humps.

5. Acknowledgement

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