Problems of Urban Development in GUWAHATI

Editor
Dr. Birendra Kumar Bhattacharyya

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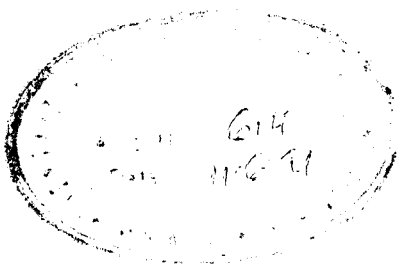

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1

A DECADE OF ROAD ACCIDENT ANALYSIS OF GUWAHATI

Dr. P.K. Bora

GUWAHATI, the premier city of the N.E. Region has emerged only as a city of pristine glory, a city more with a past than with a future. This has come to pass not inspite of but because of urbanisation. The unprecedented boom in its growth specially after the shifting of the capital to the city accompanied by the equally unprecedented disparity between its actual land use and planned land use has told heavily on the civic facilities and level of service provided for its residents.

The one single factor which has the most profound influence on urban land use planning, sewerage planning, accessibility standards and indeed on practically every aspect of urban life is the extent and quality of the transportation network. Guwahati has inherited an antiquated road network unsuitable for modern traffic. Roads are the most heavily built-upon or even encroached upon where they need widening the most. Added to all these are some problems peculiar to this city. The city which has not yet had the benefit of a truck terminal has most of its wholesale godowns in the central business area. The Guwahati railhead which splits the city into two serves as the main railhead for this rail starved

N.E. region. About 70 per cent of the wagons terminate in the city thus generating an enormous amount of truck traffic. There are only two approach roads leading to the city. The Machknowa bus stand which hardly has the space for parking of 30 buses, handles about 450 buses daily. None of the city's main shopping centres has adequate parking facilities. As per one 1984 estimate prepared by the city's traffic Police 1500 trucks, 650 long distance buses and 225 city buses traverse the city several times daily. There are 15000 licenced and 20,000 unlicenced (estimated), rickshaws and other slow moving vehicles in the city. This stupendous volume of mixed traffic winds its way through the heavily padestrianised narrow streets of the city which would be a nightmare even for a developed country.

One way of judging the level of service provided by the existing road network is to monitor and analysis the number and the distribution of road accidents. We at Assam Engineering College have been doing just the same from 1974 (i.e. after shifting of the capital to this city) to 1984. Some of the salient findings of the study have been reported here omitting details, for the sake of brevity.

During the decade under study the city had 3633 road accidents (as registered by the police) in which 464 lives were lost. To identify the accident concentration areas each accident was represented by a dot (situated to scale) on the road network of the city. The results show that the road intersections of Guwahati account for majority of the accidents. This was not unexpected. Some of the city's spots are so accident-prone that the over-lapping of dots do not give the correct visual impression of the intensity of accident concentration. Some of the more accident-prone spots have been listed in Table-1.

One remarkable findings of the study was the number of non-junction spots which has emerged as the accident black spots in the city. Each of these spots has been subjected to further micro study and the results of three of these sites (the sharp turnings beyond Khanapara check gate, the portion of A.T. Road running by Kamakhya and the Amingaon approach road

have been presented in an international seminar (Bora, 1986). These are classic examples of what happens when elementary text book principles are violated and should serve as costly practical demonstrations of undergraduate engineering curricula.

An analysis of the elements involved in fatal accidents shows that a motor vehicle dashed against padestrians in 888 cases resulting in the death of 229 padestrians. In other words pedestrians figured in nearly 24% of the accidents but they accounted for nearly 50% of the fatalities. This clearly shows the vulnerability of the pedestrians on the Guwahati roads. In contrast a motor vehicle collided with another motor vehicle in 1554 cases (43%) resulting in 102 (22%) fatal cases. Two wheelers was involved in 18% of accidents accounting for 14% of the fatal cases. This shows that in terms of shear vulnerability the two wheeler user ranks second to the pedestrian illustrating the lack of protection in this type of vehicle. Non-collision accidents accounted for 15% of all accidents and 16% of all fatalities.

Analysis of vehicle type-wise involvement in fatal accidents reveals that trucks have achieved the dubious distinction of being the number one killer group of vehicles in Guwahati. In 43% of fatal accidents trucks were involved buses make a distant second group with 21% involvement followed by private car (11%) motor cycle (6%) scooter (5%), jeeps (4%), auto-rickshaws (3%) etc. This clearly shows that no measure in regulating truck movement in the city can be branded as over cautious and that the construction of a suitable truck terminal/ terminals and shifting of the major godowns from the heart of the city should be started immediately.

Of the total number of padestrians involved in accidents males accounted for 71%. This is not unexpected considering greater exposure of the male to the hazards of the road. Of the male padestrians involved in accidents 23% died. In other words out of every four male padestrian hit one died. The corresponding figures for females and children are significantly

higher at 30% and 29% respectively. In any programme of road user's education these figures should come in hardy in spelling out priority and emphasis patterns.

Analysis of accidents were done by the hour of the day, day of the week and month of the year. Ther results are presented in Tables 2, 3 and 4 respectively. Table 2 shows that while death stalks the Guwahati road user all hours of the day one is more likely to be involved in a fatal accident between 9 AM and 12 noon and between 6 PM and 9 PM which clearly represent the peak hour flows. These two periods account for nearly 40% of all road deaths. This therefore also shows the hours during which enforcement measures should be intensified.

Table 3 shows that Saturdays and Sundays witness, in general, the highest number of fatal accidents making up 38% of all road deaths. This should shatter the illusion of safe driving on the seemingly less congested weakened roads. It is perhaps this very illusion that gives rise to higher spot speeds, and more severe collisions and greater number of fatalities. This should also remove the laxity of Police supervision one often observes on the Sundays.

Table 4 shows that for some inexplicable reasons the month of January accounts for the highest number of road deaths in Guwahati. While no ready explanation could be offered for this, traffic management and regulation measures should reckon with this characteristic.

As per police records driver's faults (over speeding, reckless driving etc.) account for a staggering 73% of all fatal accidents followed distantly by padestrian's fault (19.5%) sharp turning (3%) alcoholic influence (2%) brake failure (2%) etc. This is a pointer (if any pointer was necessary) to the importance of more stringent measures to be taken in issuing driving licence and undertaking road user education.

For the decade under study Table 5 shows yearwise variation of population per registered motor vehicle, fatalities

per 10,000 population and fatalities per 1000 registered motor vehicle. The population per registered motor vehicle column clearly shows that the rise in motor vehicle population has been consistently outpacing that of human population. Guwahati has registered an 11% per annum increase of motor vehicles compared to 6.5% for the whole of Assam. The fatalities per 1000 registered motor vehicle are equally disturbing. That these figures are higher than many western and other Indian cities and that the road deaths of Guwahati are outnumbering cancer deaths of the city have been reported with supporting statistics by the author elsewhere (Bora, 1985).

What then are the remedies for this appalling situation ? The remedial measures can be broadly divided into two groups—

(1) Short term measures and

(2) Long term measures.

1. Short term measures

(a) Truck traffic through the city should be regulated and planned with extreme care. Any resulting resentment or inconvenience should be weighed against the urgency to save human lives.

(b) Truck terminal/terminals should be made without further delay.

(c) The major godowns should be removed from the heart of the city.

(d) Proper bus terminals should be planned and bus routes plannes with the help of sound traffic engineering principles.

(e) Facilities for padestrians who constitute the largest victim group of road users should be immediately augmented.

Adequate foot paths and zebra crossings should be planned and the road users educated about their use through the powerful and all pervading publicity media which appear to be more used for promoting consumerism rather than for such public causes.

(f) Procedure for issue of driving licence should be made as stringent as in the case of western countries. This is one area where stringency would be rewarded with rich dividends.

(g) The accident black spots identified in this study should have more than their usual share of policing. Each of these spots should be subjected to further micro study and their defects removed. (The author has already analysed twelve of these black spots of the worst kind and the crop of defects associated with each spot has been revealed).

(h) The accident-prone peak traffic hours and days identified in this study call for special vigil from enforcement personnel. Contrary to general notion the deceptively less congested week-end roads of Guwahati claim more lives.

(i) We have speed limits but no device to check speed. Radars have long been employed for the purpose elsewhere and it is suggested that enforcement personnel use the device here too. The cost at present is not exorbitant, atleast no so when compared to the cost of human lives.

2. **Long term measures**

(a) Towns and cities of advanced countries have 25 to 40 per cent of total area as road space while the corresponding figour for Guwahati is only 16 per cent. Even this has been encroached upon at places. As land acquisition and eviction processes are time consuming these processes should be set in motion on adequate scale to gain the much needed external width of roads.

(b) Powerful tools such as traffic system Management (TSM) techniques are now-a-days available for managing urban

traffic. Guwahati should have the benefit of such modern management techniques.

(c) The elementary fact that urban traffic is a function of land use has been neglected for too long a time in the case of Guwahati. As a result the integrated land use planning approach has no where been in evidence. Adoption of such techniques elsewhere has minimised the very demand for transport and dispensed with the need for expensive solutions such as construction of fly-overs and rapid transit facilities. Even now whatever little can be salvaged of this city can be treated with this approach.

For such comprehensive land use planning, the author maintains that a high power apex body with the required degree of autonomy would have to be immediately created and adequate funds provided for execution of the plans. Adhocism has held away for too long a time.

Time is running out for Guwahati. Our actions in the next few years would perhaps make or mar this city.

TABLE-I

List of Accident-Prone Spots of Guwahati Roads

Sl. No.	*Place of occurence*	*Total nos. of accidents*
1.	A.T. Phukan Road	19
2.	Anuradha Cinema Hall	17
3.	Amingaon X Check gate (NH-37)	44
4.	Bharalumukh	50
5.	Bhangagarh	64
6.	Bhutnath A.T. Road	37
7.	Bamunimaidan, G.N.B. Road.	37
8.	Basistha Chariali	26
9.	Beltola	12
10.	Chandmari Chariali	84
11.	C.R.P. Camp (N.H. 37)	31

12.	Capital Complex (G.S. Road)	19
13.	Christian Basti	24
14.	Dispur	65
15.	Fancy Bazar	32
16.	Ganeshguri Chariali	118
17.	Gauhati Club, G.N.B. Road,	29
18.	Jhalukbari Police Point	59
19.	Jorabat	21
20.	Kamakhya Gate, A.T. Road.	47
21.	Khanapara Sharp turning (near check gate.)	143
22.	Kalapahar	11
23	Kahilipara	13
24.	Lachit Nagar	13
25.	Maligaon Over Bridge	35
26.	M.G.R. (from Paltan Bazar to Machkhowa).	29
27.	Maligaon Chariali	62
28.	Machkhowa	22
29.	Near Kamrup Flour Mills.	21
30.	Near T.C. Girls High School.	12
31.	Noonmati	14
32.	Narangi	13
33.	Paltanbazar, G.S. Road	66
34.	Panbazar	49
35.	Stadium Over-Bridge	12
36.	Santipur	29
37.	Sarabvati	24
38.	Saraighat Bridge	35
39.	Silpukhuri	32
40.	Ulubari intersection	45
41.	Ulubari (Marisali, Super Colony)	68
42.	Uzanbazar	15
43.	Zoo-Narengi Tiniali	42

TABLE-2

Daily Variation of Accident Occurence by Hour of Day Fatalities on Hourly Basis

Time Interval in Hour	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*	*1983*	*1984*	*Total fatalities on Hourly basis.*
12 midnight to 3 a.m.	3	—	2	2	2	—	2	1	4	1	—	17
3 a.m.—6 a.m.	—	1	3	2	1	3	3	—	3	4	1	21
6 a.m. — 9 a.m.	4	4	4	4	11	3	4	1	4	12	5	56
9 a.m. — 12 noon	5	6	8	5	7	10	12	9	9	9	11	91
12 noon—3 p.m.	2	4	5	6	2	11	5	2	8	8	18	71
3 p.m. —6 p.m.	4	3	5	7	8	6	6	12	9	7	5	72
6 p.m. —9 p.m.	1	3	8	4	4	10	10	3	9	15	13	80
9 p.m.—12 midnight	1	14	5	1	3	4	4	6	2	7	9	56
												464

TABLE-3

Weekly Variation in Accident Occurence by Day of the Week

Day of a Week	*Nos of Fatalities on Average Day*											*Total Nos. of Fatalities on average day*
	1974	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*	*1983*	*1984*	
SUN	3	13	11	7	6	7	18	6	9	7	12	91
MON	2	1	3	7	5	9	6	3	7	10	13	63
TUE	3	5	5	4	8	11	7	7	5	11	6	72
WED	1	2	7	1	5	2	1	7	6	6	4	42
THU	3	1	3	2	5	3	6	3	7	5	9	47
FRI	2	3	6	5	6	8	7	4	5	8	10	64
SAT	6	10	5	8	3	7	9	4	10	15	8	85
												464

TABLE-4

Variation of Fatalities by Month of the Year

Year	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*	*1983*	*1984*	*Average Total Fatalities Rate*
January	3	5	—	5	9	9	4	5	5	—	15	60
February	—	2	1	4	3	5	5	1	5	2	5	33
March	1	3	1	6	4	5	2	2	7	2	6	39
April	2	1	2	—	—	6	2	4	3	11	4	35
May	1	3	2	1	2	2	5	4	6	1	8	35
June	1	1	6	4	1	4	3	2	3	7	6	38
July	1	4	7	1	7	3	4	5	2	4	4	42
August	3	2	1	2	2	4	3	1	2	3	4	27
September	1	2	1	1	2	1	4	2	4	8	5	31
October	5	1	3	2	1	5	5	3	6	2	5	38
November	1	4	5	2	5	2	5	2	4	11	—	42
December	1	7	10	3	2	1	4	3	2	11	—	44

TABLE-5

Population Per Registered Motor Vehicle

Year	*Population Per Registered M¼ Vehicle*	*Fatalities/10,000 Population*	*Fatalities Per 1000 Registered M/Vehicle*
1974	15.91	0.57	0.90
1975	15.02	0.96	1.44
1976	14.02	1.06	1.49
1977	13.09	0 80	1.05
1978	12.32	0.95	1.17
1979	11.82	1.14	1.35
1980	11.60	1.08	1.26
1981	11.34	0.78	0.88
1982	10.51	1.09	1.14
1983	9.77	1.34	1.30
1984	9.11	1.30	1.18

REFERENCES

(1) Bora, P.K.—"Case study of Accident Black Spots in Guwahati", International Seminar on Road 'Safety' Srinagar, Sept., 17-18, 1986, Preliminary Publication' pp-III 185-197.

(2) Bora, P.K.—"Cancer or Wheels", Assam Tribune, June 28 and 29, 1985.