

Understanding our
civic issues

Travel Safety In Mumbai Metropolis

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Mumbai is a sprawling city of 13million people and growing in size and population every year. There is a need to travel great distances to the work place and back for adult men and women and to the place of learning and back for students. In addition, there is tourist travel, en-route travel, travelling to home place and back for the immigrants, business travel, travel for shopping, medical needs and the usual day-to-day human requirements for living. Travelling, therefore, is the greatest daily human activity and business in Mumbai.

All types of travelling systems are used for travel into Mumbai, i.e., air, sea, road and rail; however, within the city, road and rail travel predominate. Of these, the bulk of the people are carried by the suburban railway system. It is estimated that over 6.5million people travel by the railways daily in Mumbai city. It would be reasonable to assume that a similar number may be travelling by vehicles daily on the roads of Mumbai.

Rail Travel

The local or the suburban train system, which was, without doubt, an efficiently planned system at one time, carries the largest number of commuters in Mumbai; today, the number of travellers has far outgrown its capacity. The consistent effort by the railways to increase the capacity periodically has not been able to keep pace with the migration of outside population to the city. Though stressed beyond limits, the suburban train system is doing its job of carrying the bulk of traffic fairly well even today, but it is not without its risk.

It is not necessary to go into minute details of the existing railway tracks, work-in-progress and future plans for the purpose of this article; suffice it to say that the total length of rail tracks on the Western Railway from Churchgate to Virar is 228km and Central Railway from Chatrapati Shivaji Terminus (CST) to Karjat, Kasara, Diva-Vasai and by harbour line from CST to Mahim and Panvel is 548km as on date. That brings the total length of all the railway tracks to 776km in the Mumbai suburban area. Work is in progress at many places to increase the number of tracks and there are time-bound plans for expansion for future right up to the year 2020.

From the point of view of safety, the suburban train system has two major risk factors to contend with-accidents and crime.

Accidents

The types of accidents and the casualty figures in the Central Railway from CST to Karjat, Kasara and Panvel and in the Western Railway from Churchgate to Virar combined together as per statistics provided by the Government Railway Police, Maharashtra State, are given below:

Table 1: Data on Railway Accidents			
	2001	2002	2003
<i>Accidental Deaths</i>			
While crossing the railway line	2227	2078	2148
Falling off the train	646	617	532
Others	142	104	127
<i>Total Accidental Deaths</i>	<i>3015</i>	<i>2799</i>	<i>2807</i>
<i>Injured Persons</i>			
While crossing the railway line	1147	1127	856
Falling off the train	1454	1336	1413
Others	144	151	218
<i>Total Injured Persons</i>	<i>2745</i>	<i>2614</i>	<i>2487</i>
<i>Terrorism Casualties</i>			
Deaths due to Bomb Blast	0	0	11
Injured due to Bomb Blast	0	25	82
<i>Total Terrorism Casualties</i>	<i>0</i>	<i>25</i>	<i>93</i>
Total Casualties	5760	5438	5387

The Table shows that total accidental deaths in Central and Western Railways, together, are about 3,000 in a year (plus/minus 8%). The total injured persons in the railway accidents are 2,600 (plus/minus 6%). It is evident from this data that 75% of the railway-accidental deaths in Mumbai occur due to collisions between people and trains while the people are crossing the railway lines in defiance of the rules and sound advice; the cause of about 20% of the accidental deaths is people falling off the trains. The other reasons for accidental deaths in railways are: people falling in the gap between the platform and the coach while struggling with other passengers to board the trains in a rush and some travellers hanging outside the compartments die when they get hit by poles, trees or any such stationary object close to the rail tracks. In addition to these, a total of 11 deaths occurred on account of terrorist activity in the year 2003.

The record of the injured persons shows that on the average about 50% of the people are injured because of falling off the trains while 35% of the people are injured while crossing the railway tracks and about 15% due to other causes. Terrorism accounted for 25 people being injured in the year 2002 and 82 in the year 2003.

The trend of the accidents is seen to be on the decline and the credit must go the efforts of the police (GRP), the volunteer passenger organisations, such as the Mumbai Suburban Railway Passengers' Association and the railway authorities in the measures taken to reduce the accidents and increase safety awareness among passengers. A lot more needs to be done.

In the ultimate analysis, the single most important cause leading to fatalities in railway accidents is unauthorised crossing of railway lines. It is forbidden to cross railway tracks, except at authorised and controlled level crossings, but people still avoid using the foot bridges and take short-cuts across the railway lines at all places, some of which are at bends with reduced visibility. Also, the criss-crossing of rails at both sides of the railway stations often confuses the commuter about the track the trains are likely to run on. The high speed of the trains and the great distance required to bring the train to a stop practically rules out the option to halt the train to save anyone crossing the rails.

Looking into the entire accident record, one fact comes out loud and clear is that most of the accidents are caused due to the fault of the people themselves in the form of disregarding rules or because of carelessness or hurry. Also, excess of passengers over the capacity is the root cause of the extra rush during boarding and alighting leading to risky behaviour such as fighting, pushing and jostling to get into the trains and some forms of risky travel practices such as hanging outside the compartment or travelling over the roof of the coaches, etc. Of late, it is also seen that overcrowding is the major cause of fights between the passengers inside the compartments, resulting in the weaker or the outnumbered passengers being thrown out of a running train - a very brutal, callous and inhuman behaviour.

The railways have taken many steps for improving the rail-safety, such as:

- Improvement and updating of the signal system,
- Increasing the number of rakes to increase capacity,
- Adding more tracks to increase capacity and speed up traffic,
- Removal of some of the vertical poles close to the tracks,
- Reduction of the distance between compartments and platforms.

The railways refuse to take any responsibility for the accidents caused on account of unauthorised crossing of the railway tracks, people hanging outside the compartments, people sitting on rooftops of trains or people falling between the platform and the compartments. While legally they may be justified, it is not a very humane approach, for many accidents are caused due to their own carelessness too, such as piling of the sleepers or other railway items far too close to the tracks, construction of cable carrying or any other structure on the walls of tunnel that could cause injury to the people who may have some parts of their bodies protruding out of the compartments. Sometimes railways are reluctant to remove vertical poles too close to the tracks due to so-called technical difficulty. Vertical poles too close to the tracks can always be removed if there is a will to do it. A suitable technical solution can always be found and implemented.

There are standards given such as the maintenance of a minimum horizontal distance of 7ft from the centre of the tracks to the vertical poles, 5ft 6inches (plus/minus 6inches) from the centre of the tracks to the face of the platform and 2ft 6inches (plus/minus 3inches) height of the platform from the top of the rail to maintain a safe vertical clearance between the compartment and the platform. However, these can not always be adhered to on account of the variety of technical reasons and space constraints, e.g., the

level of the rails is consistently required to be raised to avoid water logging of the rails or track maintenance and then there is the vertical alignment of tracks and proper sloping to be ensured. The railways have failed to achieve the co-ordination of the raising of platform level with that of the rails because both works fall under different heads, different supervision and different budgets. Nevertheless, that calls for additional expenditure and the railways are perpetually short of funds and suffer budget-cuts.

Make Rail-Travel Safe

The major works by the railways apart, it is quite possible to make rail-travel safer by adhering to the set norms of railway safety, high quality of maintenance and vigilant supervision by the railway authorities, observance of rules and regulations by all without exception, avoiding risky behaviour/practices while travelling and by adopting humane values of tolerance and universal brotherhood by the passengers.

The railways must build sufficiently broad and strong foot-bridges/subways for crossing the tracks and also close the crossing points, frequented by the pedestrians for crossing the tracks with fencing, etc. Effective ways to avoid accidents for the citizens are: self-vigilance, adherence to the rules/regulations and following safe practices, that means no crossing of rail-tracks by the passengers, no hanging outside trains, no sitting on train roof-tops and no jostling while boarding/alighting from the trains, especially moving trains.

Crime

Crime thrives in every metropolitan city. Mumbai is no exception. The crime in railway travel is basically of two types: under the Indian Penal Code and under the Railways Act for crimes committed against the Railways. We are not examining the crimes under the Railways Act here, as they do not really constitute risk to life or limb or property of the passengers, as this paper is limited only to travel-safety of the commuters.

Table 2: Data on Railway Crimes			
	2001	2002	2003
Picking Pockets	556	566	476
Bag Lifting	332	227	269
Chain Snatching	275	192	206
Other Thefts	593	709	638
All Thefts	1756	1694	1589
Robbery	29	22	32
Murders	13	3	9
Rapes & Molestation	7	6	20
All Other Crimes	218	209	180
Total Crimes	2023	1934	1830

The Table shows that about 88% of all crimes reported in the suburban railways of Mumbai pertain to thefts, of which about 32% are by picking pockets and about 14%-15% are on account of chain snatching and bag lifting.

The present times present a new and grave danger to the railway traveller, i.e., the risk of mindless violence due to bomb blasts caused by the terrorists to spread fear. This new threat requires far greater awareness, alert disposition, reporting suspicious behaviour/unclaimed baggage or articles and co-operation with the authorities from the commuters to safeguard their lives.

Road Travel

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Road Travel

Mumbai metropolis has a total of 1,615km of asphalt roads and about 311km of cement concrete roads. By the end of this year the road length will go up to 1,700km and 400km, respectively, in these two categories. The vehicle population in Mumbai is 1.15million registered vehicles and 0.15million floating vehicles bringing the total number of vehicles of all kinds on the Mumbai roads to 1.3million. Also, nearly the entire population of 13million people may be presumed to use the roads every day at some time or the other.

Causes of Road-Accidents

No moving vehicle is ever free of the possibility of involvement in an accident. Road safety, yet, is a far more complex subject than rail safety for Mumbaikars because it has far too many facets. However, road safety, has one thing in common with rail safety-most of the accidents are caused because of human error in terms of defiance of rules and regulations made for road travel, overly aggressive driving, drunken driving, tiredness, negligence/casual attitude, listening to loud music while driving, use of mobile phones while driving, etc. The various causes contributing to road accidents are:

- Human error
- Mechanical failure
- Poor visibility
- Dangerous curves in the road
- Bad road conditions and/or oil spillage on the roads
- Absence of signs on the road giving advance warning of conditions to come

- Wrongly placed hoardings reducing visibility and causing hazardous distractions
- Pedestrians, mainly children, old and/or physically handicapped people crossing the road without following proper rules/precautions
- Debris or big concrete blocks left carelessly on the roads and open manholes in the roads.
- Animals on the road

It will be of interest to have a look at some statistics provided by the Mumbai Traffic Police about road accidents in Mumbai metropolis.

	Year 2001		Year 2002		Year 2003	
	Accidents	Injured	Accidents	Injured	Accidents	Injured
Fatal	523	543	462	475	377	394
Serious	1794	1885	1409	1461	1391	1504
Minor						
Slight	4799	5009	4886	5080	4471	4716
	19213	0	18713	0	18923	0
Total	26329	7437	25470	7016	25162	6614

The trend is clear from these figures that the number of accidents, fatalities as well as injuries are on the decline, though the population and, thereby, the number of road users, has gone up. The credit is certainly deserved by Loss Prevention Association of India (LPA), which is genuinely committed to the cause of road safety and increasing its awareness among the citizens, the traffic police, the RTO and the MCGM. That also proves the maxim that most of the accidents are avoidable. Also, measures such as wearing of helmets by riders of two-wheelers and seat belts by the occupants of the vehicles, strengthening/reinforcing the bodies of cars and crumple zone designs have helped reduce fatalities and injuries.

Improving Road-Safety

The major responsibility of reducing road accidents naturally goes to the government authorities and law enforcers-maintenance of roads, building road dividers and foot-paths, putting up road signs to warn the drivers in advance of the oncoming dangers/situations preferably in luminous paint, painting of the zebra signs and speed-breakers to make them stand out prominently, enforcing safety standards and control of traffic with traffic lights/signs as well as traffic police. Blind curves should be eliminated as far as practicable. Fairing of roads and sloping must be taken care of at the planning stage itself at the curves/bends. There must be timely removal of debris or other obstacles from the roads. Lighting of roads must be appropriately taken care of. Hoardings must not be permitted where they are likely to cause a hazard to road safety. Rules and regulations must be formulated to control hoardings, display and lighting of hoardings. As far as possible, no level crossings of rail-tracks must be left unmanned and where such unmanned level crossings exist, care must be taken to warn the motorists well in advance by painting appropriately prominent signs.

Proper legislation is required to be introduced to ensure that manufacturers of motor vehicles are bound by law to introduce some of the latest safety measures. Awareness campaigns must be frequently undertaken with the help of NGOs to hammer home the importance of safety and its various measures on the motorists. Training for carriage of hazardous material must be regularly undertaken for the benefit of the manufacturers of such materials, carriers, drivers, RTO officials, firemen and traffic police. Government authorities and the NGOs are doing their best; it is necessary that the citizens do theirs. The most important step in improving road safety is defensive driving. All the motorists must be compulsorily asked to undergo courses teaching defensive driving. Tests must be held and failed candidates must be asked to reappear and pass under the threat of withdrawal of driving licence.

Defensive driving is anticipating situations/factors that can possibly lead to accidents, manoeuvring your vehicles in a way that enables you to stay out of the majority of accident-prone situations and avoiding aggressive behaviour. The LPA calls Defensive Driving 'a system for successfully solving driving problems and a professional driver's 'code of the road'. The Defensive Driving Code as given by the LPA is:

- Care, courtesy and consideration for other road users
- Knowledge of traffic rules and regulations
- Alertness for the illegal acts and driving errors of other drivers
- Concern for accident prevention regardless of who is in the right

Travelling Safely

Pedestrian safety is as important as driving safety because we, as pedestrians, cross paths with all kinds of vehicles including trains.

Road travel and rail travel have different set of rules. Road vehicles can be brought to a stop by braking before a collision occurs or turned away in a safe direction. The trains being extremely heavy objects and travelling at great speeds on the steel-rails have tremendous momentum and therefore can't just be braked to a halt, nor can they be turned at will to avoid collisions. Therefore, there is a vast network of signals and the rail movement is strictly controlled as per the set rules. Also, the rails are always positioned on a raised earthwork all along, making it practically impossible for other vehicles to cross the railways except at the planned level crossings. Also, the railways are always given a right of way. The vehicles/pedestrians crossing the railways at level crossings are always subjected to a control. At unmanned crossings, we must look out and cross at our own risk and responsibility. Thus, we reduce the risk of collisions. It must be accepted, however, that the risk of accidents can not be eliminated altogether.

Conclusion

A gigantic city, such as Mumbai has its gigantic travel problems. Some sound planning, efficient management and a fairly disciplined citizen population have helped to control the accident rate in spite of a very heavy travel count, the highest in the country. There is sufficient room to reduce it drastically with the co-operation of the travellers themselves. Most of the accidents are attributable to ignorance, negligence, carelessness, flouting of

set norms/rules, drunken driving, over-speeding etc. A loss of an able bodied young and/or learned person is not just a loss to his/her family, it is a loss to the nation.

We need to undertake a vigorous awareness campaign to instil discipline in the people at young age itself. Right from school days the children must be taught travel safety and the proper rules of travel and the reasons why they need to be implicitly obeyed. Adult awareness programmes must also be undertaken in the public places. e.g. on the railway platforms, on TV channels and by distribution of brochures/booklets to instil these values in the grown up people too. The educated children can be made to take part in the adult awareness programmes and will prove to be a great motivating force even for their elders. Past experience shows that a concerted effort in such a constructive direction always achieves immediate results. Well, then let us do it and earn a pride of place for 'AAMCHI MUMBAI' among mega-cities as a safe and a disciplined metropolis.

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The facts presented and opinions expressed in this booklet are those of the author alone.

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