

Tsunami on Roads Wake Up India!



Dr Sanjay Kulshrestha

Edited by: Pradeep Dnyakar
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COVER PAGE

(1)

In 80-90% cases human error is directly or indirectly responsible for road accidents. We frequently blame the hardware or the machine we are driving in, but the fact is that it is the software, the driver's brain that is the real culprit behind the majority of such cases".

In India there are two important areas for political commitment. One is inside Parliament and State assemblies and the second is on the road. I may not be wrong in saying that the road to Parliament starts from the 'road' itself. Traffic jam is often used as a weapon by political parties to show their power or nuisance value.

Don't administrate your vehicle like a train, otherwise the better would way to get stuck in a jam, this is called a carpool in no way it is different from car-pool. You have to cross the road only when it goes over a jam.

We spend a significant proportion of our income on vehicles for their purchase and maintenance. Most of us consider daily fuel consumption to be the running cost of vehicles. However, the actual daily running cost of the vehicles is quite different. A proper understanding of these financial aspects of vehicles helps us in taking correct decisions and also to do a significant saving. [See chapter The Economics of the Vehicles]"

If you have some suggestions or comments, please share with us:

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BACK PAGE

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*Dedicated to victims of road
accidents who die for want of
timely medical help*

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EXCERPTS

“On the roads all are equal. Thus you are forced to pass through a system on roads where there are several categories of other road users, having different attitudes towards road safety or traffic rules. You have to mix up and compromise with all other categories of road users. You cannot avoid road traffic howsoever big you may be in your status in the country.”

The accidents *“India has the largest number of deaths in road accidents in the world. On an average, there is one serious accident every minute and a death every five minutes in road accidents. In India, deaths in road accidents are 3.5 times more than the total number of deaths occurring owing to homicide. Similarly, in 2007 only two people died everyday in terrorist related activities in India while in the same year road accidents claimed 314 casualties everyday.*

“It is an irony that in India a severely injured road accident victim lying in a pool of blood may fail to attract the attention of even a single person among the commuters or the spectators standing barely a few feet away, while on the contrary a struggling human life 70 feet deep in the bore well, may attract the attention of the whole nation. I don't see any example worse than this to see such a discrepancy in attention and attitude of the Indian society as well as of the government towards the human life”

The vehicles *“Up to March 2009 there were about 12 crore motorized vehicles on Indian roads. Every year approximately 1 crore vehicles are coming on roads. The attitude of the government at present appears like that of a manager of a cinema hall, where, in spite of knowing the fact that virtually there is no space inside, he continues to sell tickets saying 'go and enjoy the show'. There is already flowing a flood of vehicles on Indian roads. The government is probably waiting this flood to take the shape of a tsunami on the roads”*

The roads *“There are clearly two groups working on roads, one belongs to road-makers while the other to road-diggers. Both work in 'close in coordination'. It is very common to find that once the road is complete, the very next week you see people from another department start digging it again. In India, roads are being raped repeatedly and we all observe it silently without any concern.”*

“Road is one of the biggest employers in our country, providing livelihood right from a labourer to the minister. Except grassroot workers, who earn for the job done, most of the other persons in the series above them probably get disproportionate payment for their jobs.”

The public. . . . “We, the conscious citizens, often make a lot of hue and cry about chaotic traffic conditions, but when it comes to observing rules, they are always meant for others? What should we call ourselves, hypocrites or something else? Why do we tend to follow traffic rules only when asked to do so, or under pressure of law? If we really think ourselves as part of a civilized society, then why do we not understand that our role really matters a lot. If we are honestly and sincerely committed to safe driving or follow traffic rules meant for our safety, we would be able to reduce the traffic-related burden to a great extent.”

The traffic police. . . . “I must say that traffic policemen take harsh decisions only after giving a sufficient time to the commuters and not from day one. People take undue advantage of this. In this regard the role of the traffic police should be clearly defined. What do we expect from the traffic police, whether to behave like a mother or as a perfect law-enforcing agency? Should it ask the commuter ‘Beta helmet pahan lo, otherwise you may suffer head injury’ in a way as if mother says ‘Beta sweater pahan lo’ otherwise you will catch cold’ and nothing beyond this.”

The pedestrians “They vote, they contribute to revenue, they have equal rights on the road and equal right to government’s budget for infrastructure, but what they get in return is thick smoke, splashes of mud and a threat to their lives. Any enhanced facilities for the motorized vehicles adversely affect the safety of non-motorized vehicle-owners or pedestrians.”

The Government and NGOs “There are so many ‘serious discussions’ and conferences going on at government and NGO levels from time to time. People come to such meetings bubbling with knowledge that really impresses the gathering and the media, but the fact is that no serious action is taken beyond paper work or recording of minutes or updating their website. Thus road traffic continues to remain in its dismal condition.”

“The government is very active only in making some committees for the detailed study on traffic related problems. It appears that the guidelines prepared by these committees are basically recommendatory or just a suggestion and not mandatory for the government to follow. Sometimes the proposal is so extensively and slowly churned through committees and sub-committees on planning, finance, etc, causing a considerable delay in implementation or making it too late.”

PREFACE

For the last many years I have been observing tremendous deterioration in Indian traffic conditions like traffic congestion, rising road accidents, the attitude of the public on roads, environmental pollution, etc. Although this deterioration is being observed for the last two decades, during last few years it has been so rapid that it has started distracting our attention and affecting our daily routine seriously. I believe many other socially conscious citizens may also be thinking in the same manner. As for me, I could not confine myself to 'thinking business' only but took one step forward to express my ideas and feelings in writing. This book is supposed to be just a wake-up call for both our country and countrymen as both are in various ways responsible for the present deterioration in traffic. The various aspects of road related problems in this book have been discussed in a rational and scientific way, touched with bindaas, forthright approach, some philosophy and a tinge of humour.

Though I belong to the medical profession, in this matter, I have explored this subject not as a medical professional but as a common citizen. I have tried to analyze this problem from almost every angle be it commuter on the road [pedestrian, cyclist or motorized vehicle owners] or government authorities who regulate it, provide road infrastructure, health care for accident victims, etc. I strongly believe in a logical and reason-based analysis of every problem I am faced with. For this purpose the discussion of every aspect of road related problems in this book has been subdivided into smaller subheadings. These subheadings may break the flow of the reading, but I feel it may help us to understand the problem in its totality. It may be noted that this is not a road manual or a guideline for road traffic. On the contrary, it is an honest and unbiased attempt to discuss whatever has been happening on our roads.

My criticism may not be to the liking of persons of concerned fields and departments. But here I have tried my best to remain honest in criticizing them. I believe that unless we are honest in analyzing the problem, we cannot find a proper solution to it. My sole purpose here is to make the public and authorities sensitive about it, so that all of us start thinking seriously about this problem. The suggestions in my book do not claim to be the best ones as there could be other better and more effective ways to tackle this problem. I have been actuated by best intentions to extend help as a modest and responsible citizen of India.

At present whatever literature is available and whatever we discuss is mainly confined to road accidents. No doubt, accidents are the most important aspect of traffic related problems, but the problem goes much beyond the phenomenon of accidents. Traffic related hazards are now more or less a global phenomenon, affecting significantly all countries irrespective of the fact whether it is a developed or developing or underdeveloped country. Gauging the magnitude and gravity of the problem of vehicular chaos on roads the world over, even the eminent religious leader of the Vatican felt deeply concerned about it and thought in to the advantage of humanity to issue a kind of moral and humanitarian conduct containing an interesting kind of ten commandments to be observed meticulously by all concerned while on the road.

I am confident that this book will fulfil my hope, concern and aspirations to improve the traffic related problems in India.

Dr. Sanjay Kulshrestha

ACKNOWLEDGEMENT

This book has been made possible with the help of several persons to whom I would like to pay sincere gratitudes. I am very grateful to Mr. R K Laxman who, despite his heavy work load and health problems, gave time to design the cover page of this book and provided his cartoons of traffic related problems. I am sure his cartoons and sharp wit would make the contents and the discussions in this book delightfully meaningful. I believe that many a time humor is a more effective way to send a message across than preaching. Though there are lot many things about his cartoons which I like, it is his constant efforts to impress upon the problems of common man of our country, is the most admirable among all. I wish to express my deep sense of gratitude to Mr. Pradeep Vijayakar, assistant editor, The Times of India, Mumbai, for editing the manuscript and for his constant guidance and constructive criticisms. I gratefully acknowledge the help of Dr R P Tiwari, Formerly Prof. & Head, Dept. of English, R B S College, Agra for reading my manuscript carefully. His suggestion have been incorporated. It is only too formal to thank my wife Dr Meeta Kulshrestha, Consultant General Surgeon, for her cooperation and encouragement throughout the course of investigation. My lovely daughter Shraddha deserves all appreciation for providing emotional relief through her pleasant remonstrations.

These acknowledgements are not only for those who helped me in writing this book but also those who helped me in becoming what I am today. I will ever remain indebted to my parents, teachers and country.

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Chapter - 1

INTRODUCTION

In our routine life every one of us has to come on the road almost daily with some or other purpose. In other words, you cannot avoid road traffic howsoever big you may be in your status in the country. You may make a cozy paradise for you and your family, but you can't escape the menace of road traffic. The second peculiarity about road traffic is that on the roads all are equal. In other words, the road is a great leveller. Thus you are forced to pass through a system on roads where there are several categories of other road users, having different attitudes towards road safety or traffic rules. You have to mix up and compromise with all other categories of road users. Even if you have the best intention to follow safe driving, you may be the victim of other's rash driving or rage.

Today a significant portion of our time is spent on roads. So, the advantages of travel in our life cannot be overemphasized. However, the price we are paying for it is extremely high. A decade ago, we used to be worried only about one aspect of traffic hazards i.e. accidents, but now this subject of road traffic is something far beyond road accidents. There are no signs of control over deaths due to accidents. In addition, many new and equally hazardous problems have come up in recent times like pollution, alarming traffic congestion, arrogance on roads, and the like. All these are going from bad to worse at a break-neck speed.

Unfortunately, a majority of road accidents involve young males who may be somebody's son or husband. Do you remember any incidence when you have gone to console a family that has lost a young member in such an accident? We may be very tactful and vocal in offering consolation, but in such a situation we all find ourselves at a loss for words. We become speechless when we see small kids and wife of the deceased or parents of a young man sitting by the side of the dead body. How does one console a wife whose life and dreams have just been shattered? What about the small kids playing by her side who have no inkling of the tragedy that has befallen them. Had this been a natural death of a person who has finished his or her responsibilities, you find some words to start a conversation. But on the occasion of such a tragic and young death, you don't know what to say and from where to start. You even

avoid making eye contact with the family and dependants. In fact, you yourself are not able to come to terms with the tragedy. The news comes so suddenly that you have never thought in your wildest dreams about it. You may have met him or talked to him the other day. How could this have happened? Slowly information trickles in and you may come to know that your close one was alive for quite some time at the accident site lying in a pool of blood, but succumbed to his injuries for want of timely medical aid. You also realize that his wife is not aware of any Will, insurance policy and other documents about assets or savings of the deceased making you realize the financial problems she is going to face, besides the severe emotional trauma. Do I need to give some examples of such tragic accidents that have made the life of many families miserable? I don't think so. Just stretch your memory a little and every one of us must be remembering a few such tragic cases amongst our friends, neighbours or family circles. On an average every minute one serious accident is occurring and every five minutes a person is dying owing to road accidents in India. It is an alarming, nerve-racking and mind-boggling scenario. Road accidents are amongst the most important hazards being faced by modern society. India, presumably, is the worse hit.

If we consider other problems pertaining to road traffic, we see that traffic congestion and pollution come probably next to accidents and we cannot afford to ignore this menace anymore. Both these problems have common denominators i.e. volcanic expansion of vehicles and a severely lagging road infrastructure. During the last 20 years pollution has increased eight-fold in our country. According to a report in 2007, the World Health Organisation (WHO) has confirmed that air pollution in India causes 5,27,700 premature deaths a year. Similarly, during the last 60 years the number of vehicles in India has increased from 3.5 lakhs (1950) to 12 crore (2009) i.e. 335 TIMES while the roads have grown only 8 times. This yawning gap is responsible for the severe traffic congestion on our roads. In India, on an average we lose 2-3 hours per week due to traffic jams. If we talk in monetary terms, in a single metro city, each year on an average fuel worth 100 crore rupees is wasted owing to traffic jams, without the need to calculate it for the whole country. The existing roads, instead of being widened with the demands of constantly increasing traffic load, are being narrowed owing to unauthorized encroachments. Chaotic traffic scenes are common everywhere. Often, there is a blame game going on between the public and the authorities. People complain that the concerned authorities are not taking it seriously while the authorities maintain that it is the people who do not follow traffic rules. Sometimes traffic



*It has eased the traffic congestion greatly.
But, sir, it looks like we have to start
planning flyovers over these flyovers soon...*

is so chaotic that even the most sincere efforts by the traffic police are thwarted. Poor as well as haphazard town planning, without regard to the growth rate of vehicles, population, commercial development of that particular city, is further aggravating the sinking infrastructure.

Aggressive behaviour and deteriorating road manners among drivers is another serious aspect of road traffic. News about commuters beating up or brutally killing someone on the road out of rage is not uncommon these days. Traffic etiquettes are deteriorating very fast to an alarmingly low level. Aggression on roads has now become a subculture in India. One of the indirect but significant problems among road users is that of an increased incidence of diseases like diabetes and cardiac problems. Too much dependence on vehicles leading to physical inactivity is one of the main contributory factors. A few decades ago, we were known mainly for the communicable diseases. While that problem still persists, we are now making new records in terms of morbidity and mortality in non-communicable diseases also. The volcanic expansion of vehicles and resulting CO₂ production also has a direct impact on global warming with long-term serious consequences. As far as tackling the issue of global warming is concerned, not to speak of the public, even the attitude of the most developed countries has remained confined to 'formal table talks'.

So far as dealing with road traffic hazards is concerned, the governments as well as Indian citizens are showing utter apathy. At present this grave problem is receiving much less attention than it deserves. Whatever measures are being taken, are going well behind schedule. Will it be true to say that Indians getting rich means India is also getting rich? Certainly not. On one hand, it is the rich and desperate people who are responsible for the volcanic expansion in the number of vehicles in the country, while on the other hand, there is government machinery that is responsible for providing and maintaining the infrastructure for smooth road traffic in the country. I believe the country's economy is not keeping pace with that of its people with the result it is unable to provide timely and adequate infrastructure. Another possibility could be that the country might be having adequate funds but traffic hazards and good infrastructure are not accorded priority. The fact that prosperity is more evident from the insides of our houses, but we fail to find a corresponding richness on the road also supports the same theory.

There might be so many 'serious discussions' in conferences or meetings going on at government and NGO levels from time to time. People come to such meetings bubbling with knowledge that really impresses the gathering and the media, but in spite of all the brain-

storming sessions of these 'successful meetings', no actual results are obtained. Thus road traffic continues to remain in its dismal condition.

The above facts are sufficient to prove that it is as alarming a situation on the roads as an earthquake or a tsunami. If we do not tackle it on a war footing right now, considering it a man-made disaster, it will be too late to mend fences. Justice delayed is justice denied. Now the question is, what should be done or what should be our priorities? In fact, the problem is extremely complex and there is no easy and single solution to it. Attempting to improve traffic conditions is really like opening the Pandora's Box. The first and foremost thing is to look at the problem with a wide vision. There are three or four main components of road traffic i.e. the road itself, the commuters on the road, the vehicles and the agencies and authorities that regulate traffic and build road infrastructure. We should consider the traffic problem from all these angles to fully comprehend it. Unless we know the real situation or the root cause of a disease, we cannot treat it completely and whatever measures are taken, will only prove to be symptomatic or temporary and not curative. Traffic problems are seen in two different areas of the country, one is the highway and the other is inside the city. So far as highways are concerned, accidents seem to be the main problem and spending money on better infrastructure along with increasing awareness amongst commuters would solve the problem to a large extent. However, inside the city in addition to accidents, there are several other traffic-related problems (mentioned above) making the situation complex where there does not seem to be a simple and straightforward solution. In cities, unlike highways, money alone will not solve the problem, no matter how much of it is pumped in. Instead, it would call for a strong political will and bureaucratic action.

Last but not the least, we, the conscious citizens, often make a lot of hue and cry about chaotic traffic conditions, but when it comes to observing rules, they are always meant for others? What should we call ourselves, hypocrites or something else? Why do we tend to follow traffic rules only when asked to do so, or under pressure of law? If we really think ourselves as part of a civilized society, then why do we not understand that our role really matters a lot. If we are honestly and sincerely committed to safe driving or following traffic rules meant for our safety, we would be able to reduce the traffic-related burden to a great extent.

The forecast: A time will come when road traffic will decide as to who will rule India. The issues of poverty, education, social upliftment, communal harmony, reservation, etc. are no more fancy or catchy words now. In fact, every year, at the time of budget or elections or with every five year plan, we are seeing the same issues being highlighted with

no actual change. Instead of 'roti, kapda aur makaan,' the new slogan that would probably work is 'bijli, paani aur yatayat'.(power, water and traffic) The reason is that these three things are the most desired civic amenities of our daily life. I believe the government, in its schemes, should give priority to such issues that affect everyone in the country whether urban or rural, rich or poor, high or low, of any religion or creed. In fact, road traffic hazards should be made part of an aggressive national programme like those against tuberculosis, AIDS or polio.

Chapter 2

ROAD ACCIDENTS

Road traffic accidents have become an established major epidemic today in India. Although we are facing so many serious problems in our lives directly attributable to increased road traffic, accidents represent the most severe of them all. This probably justifies discussing road traffic accidents on a priority basis. India has the largest number of deaths in road accidents in the world. In India, road traffic accidents claim more than one lakh lives per year [1,14,590 in 2007]. On an average, there is one serious accident every minute and a death every five minutes in road accidents. If we analyse all the causes of mortality in the age group of 5-45 years in our country, road accidents are next only to tuberculosis and AIDS. More than 50% deaths in road accidents occur in the young [15-45 years] who represent the most productive age group.

When we compare it with other types of violent deaths, we find that the number of deaths owing to road accidents is significantly high. For example, in India, deaths in road accidents are 3.5 times more than the total number of deaths occurring owing to homicide. Similarly, in 2007 only two people died every day in terrorist related activities in India while in the same year road accidents claimed 314 casualties everyday. As regards war, it is not a common phenomenon, but as per the world average, death rates in road accidents are seven times bigger than those occurring owing to wars. So you can very well understand where the actual war is raging, on our borders or on our roads. However, unfortunately, this problem of road accidents is not receiving the attention as per those terms.

[I] THE SOCIAL IMPACT

In case of accidental deaths, the quality of life of the dependents deteriorates significantly. In more than 90% cases family members [especially those belonging to middle or poor classes] are forced to live a miserable life. Death is not the only indicator of the seriousness of the problem. Those who survive accidents may have to face many kinds of problems like permanent disability, loss of limb and so on. For every death that occurs there are four people who get permanently disabled and 15 persons who sustain serious injuries. They have to bear an enormous financial burden of prolonged medical treatment as presently only 1%

of the Indian population has medical insurance. This financial burden coupled with the fact that there is no constant source of income, affects the quality of life of even a higher class family. In fact, the entire family of the disabled person is adversely affected. Other family members have to devote more time to the victim's care affecting their profession as well. Even if the person resumes his/her job, his efficiency may suffer a setback owing to disability.

A physical disability may prove to be disastrous especially for the people like farmers, labourers, etc who depend mainly on physical activity or fitness for livelihood. Children's life and education may be affected either directly as in the case of injury they have to drop out from school, or indirectly when the sole-earning member meets with an accident and cannot afford to pay the school fees. In some cases children's quality of education may suffer as they may have to shift to a less reputable institution. All this is in addition to the emotional or psychological trauma undergone by the kith and kin. Some of the survivors may suffer a life-long anxiety or fear of roads or speed or may even go into depression.

[III] ROAD ACCIDENTS: A HEALTH ISSUE?

It has not been clearly defined which department or ministry should really deal with the issue of road accidents. Whether it is more a transportation, civil, automobile engineering issue or an issue related with the traffic or health authorities, is yet to be defined. Owing to this unfortunate fact, the problem of road accidents resembles an orphan who nobody likes to claim. This is also responsible for the blame game amongst the various authorities. That is why, despite being an alarming and grave situation, it is not getting the understanding and attention it deserves.

I, as a medical professional, feel that it is mainly a public health issue as it is directly responsible for a very high number of deaths, disability and serious injuries mentioned earlier. Besides this, indirect factors like vehicular air pollution which lead to about 5,27,700 premature deaths in India every year, are sufficient proof to show that this issue belongs entirely to preventive and social medicine. The next question is, if it is basically a health issue, then how does it differ from other health problems that we are facing in our lives? There are some special features of road accidents that make them different from the other health problems that prevail.

1. Failing to do our best: When an accident occurs to your close one, often either you do not know or come to know very late. There is a horrifying possibility that the person might be having very severe injuries and may be struggling for his life at the accident site and quite likely there may not be any close one by his side or he may not be

able to get even primary aid. You may be completely unaware of this fact and comfortably watching television at home. You may regret this fact lifelong that in spite of being able to afford the best treatment in the world, you could do nothing for him/her. Contrarily, if someone in your family is sick at home, you ensure immediate medical aid. For example, if someone has a heart attack, you would promptly rush him to the nearest cardiac I.C.U. and provide the best of treatment. Even if he does not survive the heart attack, you have the satisfaction of knowing that you did all you could.

Some times it is possible that you are present at the accident site but helpless as there is no quality medical facility within reach or you have to compromise on medical care as trauma care in most places in our country is practically non-existent at present. We may always regret that many a life or limb could not be saved for want of good trauma care or blood transfusion facilities, etc. I am sure each of us has some memories of terrible accidents involving some loved ones or acquaintances that we feel could have still been with us had they received good first aid at the time of accident.

2. Risk to others: A person who drives recklessly not only risks his own life but also that of other commuters on the road. On the other hand, if you do not care about your health or diseases then you are the only one who will suffer. If you are careless about your health it is probably nobody else's business but the moment it starts affecting your driving habits, it certainly becomes everybody's business! A drunken driver or one who disregards traffic rules is like a potential murderer let loose on the roads, causing a serious health hazard!

3. A single mistake that costs you dearly: one single mistake or carelessness may prove to be very risky to your health or may even be fatal. However, this is not so with most other diseases. For example, if you develop poor eating habits or a sedentary lifestyle today, it would take a long time or even years to develop diabetes or hypertension. Even the dreaded diseases like cancer gives us some time. Except road accidents, I don't remember any other mistake, crime or misjudgement in your life where there is provision for such a heavy penalty.

4. Mistake could be instantly fatal: It happens at the time when you least expect it. You may argue that there are many other diseases where a sudden death is also expected like heart attack, brain stroke and the like. The reason is that deaths in these conditions mostly occur in old age when the probability of being behind the wheel is not much. While in road accidents mainly young adults are involved where it is the number one cause for a sudden death.

5. No straightforward solution: Road traffic accidents are a very complex issue and there is no easy way out. The reason is that road accidents are caused by a vast range of direct and indirect factors. Likewise, a solution can be found only by the collective efforts or co-ordination of many departments. At present there is no single body to ensure a proper co-ordinated functioning of these authorities. While in most of the other health problems the management is straightforward, it may be possible that owing to paucity of funds it may not be available to all. However, in case of road accidents, money alone cannot solve the problems that you would probably realise at the end of this discussion.

6. Extreme carelessness among us: Though we are very much concerned or particular about our health in general evidenced by the fact that we take a keen interest in hygiene, diet, fitness and so on, as far as road accidents are concerned, a significant degree of ignorance or reluctance has been noticed among both the people and the authorities. Whenever we come across a tragic accident on roads while driving, we become scared and drive very carefully. BUT alas, only for a short time!

Similarly, seeing some ghastly or gory pictures of accidents in newspapers we do shiver BUT only for few minutes and after some time we get busy in our routine activities thinking it is a part and parcel of life.

[III] CAUSES OR RISK FACTORS OF ROAD ACCIDENTS

If we consider road accidents as a disease then a proper understanding of its causes is extremely essential. Unless we know the reasons properly and clearly, we cannot treat this malady.

(1) Human Errors and Factors

Perhaps you may not believe but it is true that in 80-90% cases human error is directly or indirectly responsible for road accidents. We frequently blame the hardware or the machine we are driving in, but the fact is that it is the software, the driver's brain that is the real culprit behind the majority of such cases. You would be surprised to know that vehicular faults, pedestrian's fault and defective roads are responsible only for 3-4%, 2-3% and 1-2% of total accidents respectively. Human errors can further be divided in to the following categories:

[A] The Speed

Speed is the single most important factor for the road safety. All of us seem to be in a great hurry while driving, but we should also realize that among all human errors, speeding is the most important cause of road accidents. Let us consider how speed affects us while driving.

1. The Risk: When we drive fast, the momentum and the kinetic energy of the vehicle increases. Thus when a collision occurs the impact is much more and can be fatal. For an example, if some one is going to make a suicidal attempt from the first floor [4mt] then there are chances one may not succeed. If the same person makes an attempt from the fourth floor [16mt], there is a fair chance that his wish may be fulfilled. The reason is that in his latter attempt, the velocity near the ground would become double to that of the previous one [64 km/hr against 32 km/hr]. Similarly, on some auspicious occasion while breaking a coconut you must have noticed how easily a very hard coconut turns into pieces when you strike it on the floor with a greater force. Now probably you can understand how dangerous the speed factor could be on roads.

Up to a speed of 30 km/hr, the risk of a crash being fatal is minimal. Once the speed increases, the risk of a fatal crash increases exponentially. For an example, there is three-times risk of a major accident at a speed of 50 km/hr, four times at 65 km/hr and twenty times at 80 km/hr as compared with that of risk at 30 km/hr. The chances of an accident being fatal are nearly 100% if it occurs at the speed of 100 km/hr. In general, an average increase of 1km/hr in speed can cause a 3% increase in the chances of serious injuries. This risk is in relation to the occupants inside vehicles. If we consider the risk of fatal injury caused by the moving car to the pedestrian we find that at a speed of 30 km/hr there is only 10% risk while risk at the speed of 45 km/hr is about 50%.

2. When you drive fast the reaction time available to your brain reduces. You have to take split-second decisions when you face some abnormal situation. Our normal reaction time in such a situation varies from 0.5 seconds to more than 2 seconds. In India with chaotic traffic conditions in the cities, anything can happen on roads like vehicles appearing from all directions, wrongly-parked vehicles, stray animals or road disappearing in to nowhere. If the speed is not very high you can control the vehicle easily and safely in such situations. Two-wheelers lose balance more easily as compared to four-wheelers when brakes are applied all of a sudden.

3. Speed also affects you both physically and mentally. When you drive at a slower speed, your drive is very comfortable. You can talk to your co-passengers or you can enjoy music, etc. In simple words, you just enjoy your driving. On the other hand, when you drive fast you grip on the steering very hard and your body muscles also get taut as you become conscious of driving. Often, you lean forward and you fix your gaze on the road. You have to concentrate more on driving and

you cannot afford distractions. Besides, due to chaotic traffic on ordinary highways you have to use the clutch and brakes more frequently making your thighs stiffer. You develop all the symptoms of fatigue like stiffness of arm and neck muscles, headache, etc. These changes are very tiring and at the end of your drive you feel very exhausted both physically and mentally.

4. A high speed also affects fuel consumption as at a speed above 60km/hr the petrol consumption increases by 30-40%. Though this point is not related with road safety, with the rapidly rising cost of fuel even the people of rich countries are now seriously considering this important.

Why Do We Drive Fast?

1. To Save Time: When you ask someone why he drives fast most of the time his answer is that he is in a hurry. Everybody feels he is the busiest or the most in demand. Yes, it is true that time is a precious commodity or rather time is money. Is it really more precious than our life? On an express highway [that constitutes only around 500-600 km in India] maybe one can save some time without much compromise with safety. But given the condition of our national highways as in most of the cases, it is a futile exercise. For example, if you have to travel 200 km, you may probably save 30 minutes by driving fast but only after an exhausting and risky drive. Consequently, you may not be able to maintain good speed for a long stretch of time. After so much overtaking the time you save is being lost by a very slow moving traffic ahead once you approach a town on the highways as there are no by-passes for most of such towns or owing to jams or check-posts. Suppose, by such exhaustive driving you have saved some 30 valuable minutes, what will you do with these so-called 'valuable 30 minutes'? At the most you can have a cup of tea or relax for a few minutes. Now, honestly you calculate how much time you spend daily sitting idle in front of the television. If you are not a taxi driver then an honest comparison of the hours saved on the highways vis-a-vis time spent for entertainment would confirm that in majority of cases, saving of time is not a genuine reason for speeding [according to Audience Measurement and Analytics Limited which tackles the cable and satellite viewers in India, on any regular day an individual spends two and a half hours watching TV]. These 30 minutes saved could cost you and your loved ones dearly. So don't go by the dictum 'time is money', instead remember 'no life, no money'.

2. Thrill Seeking: Young people, especially adolescents, do crazy things on the road just for the thrill or to prove themselves. It is also a fact that in the age group of 15- 20 years, road accidents are the number one cause of death in India leaving behind even AIDS and

tuberculosis. The desire for driving is unusually very intense. Once an adolescent learns driving, he can hardly wait and driving becomes suddenly the most important thing in his life. Whether he derives any pleasure from reckless driving only he can tell but once an accident occurs, the condition of both the driver and his vehicle certainly become a reason for creating a strange kind of thrill among spectators and passers-by.

[B] Dangerous Overtaking

This is the second-most common human error responsible for accidents. While overtaking, owing to high speed as the accelerator is pressed to its fullest extent, the chances of fatal accidents are much greater. Ponder over the following facts before overtaking:

1. First and foremost, do you really need to overtake the vehicle ahead? You must have observed that on highways most vehicles run in clusters of different speeds. Some drivers choose to drive at a slower speed while others choose a higher speed. So you may find clusters of vehicles running either around 30-40 km/hr or 50-60 km/hr or 80-90 km/hr and so on. If you are moving at 80-85 km/hr, you are fully justified in overtaking a vehicle moving at 30-40 km/hr or 50-60 km/hr. However, it is not wise to overtake a vehicle moving in the same cluster [speed range]. For example, if you are moving at 80-85 km/hr, then you will not gain much in overtaking a vehicle moving at a speed of 85-90 km/hr. Throughout the journey you would find that various vehicles belonging to the same cluster will keep on changing their positions and ultimately everyone will reach the destination more or less at the same time. If you have unnecessarily overtaken such a vehicle then just to maintain your position you have to drive under stress. In such situations I personally feel more comfortable in keeping behind some other vehicle. If you have seen the fleet of cars of a VIP, you must have noticed that the VIP's car enjoys the middle position and it is the pilot car that is the front runner.

2. Time: Assess whether you have ample time to overtake or not. It is the difference between the speed of the two vehicles [yours and the one that you are going to overtake] that will determine how much time it will take to overtake. If the speed of the vehicle ahead is much slower than yours, it would take less time to overtake. On the contrary, if you try to overtake a vehicle that is running with a speed closer to yours, it would take much more time to overtake. It has been found that in a majority of cases the actual time required to overtake a vehicle is just the double of what is estimated by the driver. If another vehicle is coming from the opposite direction, judge whether you would be able to overtake without colliding.

3. The road: do you have a clean, straight visible patch of road without vehicles? Whether the condition of the road is good with no water, mud, sand and potholes, otherwise on applying sudden brakes your vehicle may skid.

4. Pick-up: Before trying to overtake another high speed vehicle, do check the pick-up of your vehicle, especially if it is overloaded. It might land you in trouble in the midst of overtaking. So don't be adventurous with a khatara, a ramshackle vehicle.

5. Is the driver ahead aware of your intention to overtake him? Wait for him to give you a pass. Most of us become impatient if other vehicles do not give us a pass. Some aggressive drivers become desperate and forcibly try to overtake and frequently meet with an accident. Discreet judgment is very necessary.

6. It is very risky when you try to overtake forcefully more than one vehicle in one go. If your attempt at overtaking all the vehicles is unsuccessful, then one of the drivers of vehicles that has been just overtaken, has to create space to accommodate your vehicle in front of him just to save you. Just imagine what would happen if there is a driver who is not the forgiving type and decides to teach you a lesson by not accommodating your vehicle?

[C] Fatigue or Sleep

Fatigue seriously affects our reflexes and is responsible for about 10-15% deaths owing to road accidents in India. Its occurrence in developed countries is even more e.g. UK [20%] and USA [30%]. Some facts that need consideration in this context are:

1. Quite frequently you stay up late preparing for a long journey and get up early. If our sleep is less than 5-6 hours in the preceding night, chances of dozing off behind the wheel are very high [10 times]. If you are a late riser then do not start an early morning drive because your sleep is not complete. So, instead of the wall clock, follow your own body clock.

2. The chances of sleep are the maximum in the late night especially between 2 am to 5 am.

3. The more luxurious the car the more the chances of tending to sleep. In a luxury car running on an express highway, the comfort level is like one's bedroom, so it is no surprise if the driver dozes off. In fact, in a car where everything is powered needing no physical exertion, the only part of your body that moves in this situation are your eyelids. The naughty eyelids may also feel why should they work when other

parts of the body are taking rest? This probably also explains the increased incidence of dozing behind the wheel in the developed countries. Have you seen a pedal cyclist or rickshaw puller sleeping while moving? Similarly, you rarely feel sleepy while driving on the congested city roads or on uneven or pot-holed highways.

4. Avoid starting long journeys on a full stomach because hyperglycemia can make you drowsy and secondly in case you meet with an accident there are chances of aspirating food contents into the wind pipe causing respiratory arrest. Instead of a heavy meal, take small meals at frequent intervals.

5. If you have a driver, always ensure whether he has taken sufficient rest or not. One General Manager of a big company went to some other city and had a hectic day and at night attended a party there. He decided to return at 4 a.m. the next day. The driver was very tired, but he could not dare say no to such a senior person. On the way, he dozed off and met with an accident and both died on the spot. Always have a good rapport with your driver so that he feels free to convey you his problems.

6. Certain medicines tend to induce drowsiness e.g. cough syrup, anti-allergic or antipsychotic drugs. Consult your physician about this when taking any medication.

In case you are tired, avoid driving alone. A co-passenger can help a lot in such situations. He can observe your signs of fatigue or drowsiness, e.g. droopy eyes, yawning and staggering of the car much earlier and can warn you. Secondly, he can drive while you can take some rest. Thirdly, talking to co-passengers when you feel sleepy is a good way to keep sleep away. You can also try listening to music or use chewing gum which can help to keep you alert. Above all, do not make it an issue to continue driving, take a coffee or tea break.

A few car companies have developed an alarm to detect sleepiness in drivers. A camera fitted on the dash board reads the pattern and rate of eye lid movements; passes on the information to an analyzer that gives an audio alarm. It works even when the driver is wearing dark glasses. It is up to us to decide if we need to pay for such a costly technology for our careless attitude.

[D] Drunken Driving

This is a serious problem on the road and a separate chapter has been devoted for discussing it in detail [see chapter 5]

[E] Risk Taking Behaviour

There is a definite correlation between the two facts that whenever the traffic condition is better, there is a temptation among drivers to take a greater risk. It is a frequent finding that when we are more experienced as drivers or when we have better roads or safety features in vehicles, we develop an increased tendency for taking risks on roads. For example, when we have seat belts and air bags in the vehicle we feel better protected against any accident and are tempted to take risk by driving faster. This risky behaviour will nullify any advantages obtained by having seatbelts and airbags. We should not forget that these safety measures only lessen the risk to a certain extent and that too for a certain range of speed and do not eliminate the risk totally. Similarly, if the road condition improves, the drivers also tend to increase the speed that off-set safety benefit of having multiple lanes.

It is true that when one is on a road the probability of meeting with an accident cannot be brought down to zero. Here the point is that we have to weigh the benefits gained against the hazards that we would face by such risky behaviour. In this way, we can optimize the risk or maximize the benefit against the minimal risk. Seasoned drivers who are regulars on the highways have more experience but often tend to be overconfident and take unnecessary risks. What is really important here is that one's confidence level should grow with the same pace as one's experience, otherwise one is surly heading for a disaster!

[F] Distractions During Driving [DDD]

Multitasking behind the wheel could be dangerous. Especially at very high speed a slight distraction can prove fatal. Distracted driving in its various forms contributes to about 9-10% of serious or fatal crashes. For a safe driving, proper coordination of the eyes [should be fixed to the road], hands [should have a good grip on steering] and mind [should quickly react to any unfavourable situation] is extremely necessary. Any act that affects the efficiency of any one of these three factors can prove to be potentially dangerous. Some important distractions are:

1. Use of Cell Phones While Driving: Talking on mobile can delay your reaction time by 0.5-1.5 seconds and the chances of fatal crashes increase four to five times more than normal. Many believe that using a mobile phone while driving has the same or even greater risk as that of being drunk.

You may argue that when you are allowed to talk to your co-passengers or to listen to music while driving then why can't you attend a call. Yes, it is true to some extent. The fact is that most of the driving

you do is at a subconscious level of the brain. The active involvement of brain is required only when some unusual situation arises in front of you. The reaction time of your active brain is so fast that you hardly notice this. So far as listening to music or chatting to your co-passengers is concerned, it does not distract or affect your active brain significantly. Even when you are not listening to music or talking, some thought process is always going on in your brain. However, talking on mobile phone or indulging in 'serious or logical discussion' with the co-passengers certainly causes greater distraction or reduces the reaction time of the brain. When dialing a phone number or engaging in an intense conversation on mobile you cannot watch over the surrounding traffic adequately. Talking with hands-free set also distracts your mind. Though your hands are free, the concentration power of brain is affected as it becomes inattentive during talking. Hands only follow the commands of the brain and if the commander is busy the army will sit idle for any alarming incidence. Newer studies have proved that hands-free set offer no safety advantage over hand-held units. Talking on two wheeler is equally if not more dangerous.

In this situation, it is always better to stop on the roadside and keep the conversation short. You can say that I am driving and I will call you back. Alternatively you can use voice mail to take calls or to leave messages. Some times in emergencies or in extraordinary situations if at all you need to talk on mobile, take following precautions: 1. Use a hands-free device. 2. If you have co-passenger ask him to dial for you. 3. The set should be kept at a place clearly visible to you. 4. Use a familiar set so that you can use it without looking at it. If you or your business are really dependent on calls or cannot avoid them while driving, it is preferable to have a driver. This would also help you to do some additional work besides attending phone calls and the extra earning thus obtained certainly will recover the salary of your driver.

At present the use of mobile phones while driving is punishable under section 184 [rash driving with a fine up to Rs.1000] or under 183 [dangerous driving with a fine up to Rs.1000 and or 6 months imprisonment]. In India using even the hands-free mobile phone is a traffic offence. The mobile phones have come after the MV Act was formed in 1988. As such, a proper amendment is necessary for its inclusion.

2. Setting the Music System: It is frequently observed that the people while driving try to tune in the radio or look for CDs/cassettes in glove compartment that distracts their attention. If you are a 'highly selective type' of music lover then it is always better to keep your favourite pieces ready before driving. If you have a co-passenger then instruct him beforehand. Now a days additional switches are available right on the steering wheel for adjusting the music system.

3. *Children:* They may distract the driver's attention by playing close to the driver or throwing toys or frequently changing their seats from front to back or play with steering or other important levers. Sometimes a ball can move forwards in driver's seat and can be trapped under the brakes. Such behaviour in children should not be encouraged, at least in a moving vehicle. Children should be taught car manners just as we teach them table manners.

4. *Car as a love nest:* Although no data are available, it is not infrequent to find love-making during driving as a cause of severe or even fatal accidents on roads. The moving car has been found a safe, easy, cozy and economic place for dating or love-making. In spite of the fact that you are on road, you enjoy good privacy in car, may be even better than a restaurant. I am not saying that the love birds do it intentionally or in a planned way, sometimes it happens like that. The intensity of these moments can certainly increase the intensity of accidents. Thanks [? really] to the invention of the floor gear in the new cars that has broken the continuity of the front seat thereby keeping the love birds apart.

5. *Dashboard Dining:* With the popularity of fast food, the people are frequently seen eating or drinking during driving. The fast food chains are making changes in their menu and its packaging so that it suits better to drivers. The automobile companies are also helping it by providing modifications like cup holders, bottle holders, and fold down tables or even by providing small refrigerators. I feel this is a wrong trend and has to be discouraged.

6. *Other Distractions:* we often see people lighting a cigarette, repeatedly glancing at their wrist watch, belting themselves or co-passengers, ladies applying make-up or combing hair, etc. A beautiful lady on the road or on the hoarding may also seriously detract your attention. One peculiar distraction typical in India only, is bowing before the gods to pay their respects while passing by the road side temples.

[G] Driving Against One Way

When you drive on a four lane or divided highway, you feel relaxed that at least you would not face a head on collision. It does not hold true for Indian highways or even inside cities. You will be surprised to know that the incidence of head on collisions is more or less the same both on divided and single lane highways [around 20%]. There are a number of byroads leaving or joining the highways and vehicles from these side roads join or leave the highways from whichever direction they please. The most common category that breaks the rules is tractors and unauthorized

jeeps carrying local passengers. In order to save fuel for a very short distance they create a dangerous situation for both themselves and the others.

[H] Erratic parking on Roads

Irresponsibly parked vehicles on roads [trucks, tractors, cars, etc] are the cause of accidents in 20-25% of cases. Although two drivers are at fault here [one who wrongly parked and the second who rams into it] the one who parks his vehicle in the wrong place appears to be more at fault. The chances of crash are higher if there is poor visibility e.g. at night or a foggy weather. Measures would include making vehicles more visible with reflectors and drawing a fluorescent line on the road side to indicate parking slots.

[I] Jumping Signals

Ignoring traffic signals or jumping red lights is responsible for about 9% of fatalities on roads. At night when the crossings are unmanned and the traffic is solely left to the traffic lights, people frequently jump red lights. This might be a cause of fatal accidents when drivers of similar hostile attitude approach the crossing simultaneously with a high speed. Chances of casualties are very high when vehicles approach at right angles. Another situation arises when you are crossing properly on a green signal and suddenly another vehicle after jumping a red signal comes from the wrong direction and collides with you. Sometimes when the green signal is about to finish, a vehicle that is quite far from the crossing, attempts to cross by increasing the speed. In such cases with a high speed near the junction, there are fair chances of it getting hit by another vehicle from a different lane. So always respect the yellow light that is specially meant to avoid such conditions. Nowadays there is an additional timer display to see how much time is left for a particular signal.

[J] Failure to Give Proper Indicator

It is responsible for about 8% of traffic fatalities. Many times you fail to give proper indication to vehicles which are behind you and those coming from the opposite direction or your indication may be too late for the other drivers to react. Remember, the faster the speed of your vehicle, the earlier is the need to give an indicator. For example, if you are moving on an express highway with a fair amount of speed, it is safer to indicate at least two km before. Many times the indicators are not working and you confidently turn or change the lane. It can prove disastrous especially when you turn to the right at a crossing. So check you indicators regularly, they are as important as headlights. Secondly, get friendly with the switches for indicators especially when driving someone

else's car and also confirm on the display that you have given the right indicator. If there is doubt, do not hesitate to use your hand for indicating.

[K] Unauthorized or Informal Public Transport System

A discussion on the causes of road accidents in India would not be complete without mentioning this popular mode of transport. It is popularly believed that the poor condition of the unauthorized vehicles is responsible for accidents on roads, but the fact is that it is the drivers who are to be blamed. That is why it has been included in the section of human errors for accidents.

On the Indian roads a wide variation in the people and vehicles can be seen. On one hand, there is a top industrialist of the country who is contributing a lot to the nation. He believes in traffic rules and road safety, in spite of the fact that he is earning lakhs of rupees per hour and his time is very precious. While on the other hand, there may be an uneducated careless driver of the unauthorized jeep who does not believe in traffic rules without concern for his safety or of passengers in his khatara jeep or for other road users. The only thing he is concerned about is the number of to-and-fro trips that he makes. If he makes one more trip even with rash or fast driving, he saves hundred rupees more. A grand achievement for him! The people are packed like animals inside these vehicles and equal number of persons are hanging, standing or sitting over the top of the vehicles. From the front you cannot guess who the actual driver is. The kind-hearted driver even offers his own seat to the other passengers and shifts more towards the edge. Only one buttock of the driver is lucky enough to be in touch with the seat while most of his body literally hangs outside the jeep. He maneuvers his body like an arch so that both his hands and feet are in contact with the essential items like steering, clutch and brakes. The most uncomfortable is the passenger next [just left] to him who accommodates and suffers the thrusts of the gear between his two thighs. These drivers propel these vehicles like horizontal rockets putting the life of not only occupants in danger but also that of other innocent people or other vehicles on the roads. I feel these jeepwallas will certainly win prizes if allowed to take part in some annual defence or military shows. Often on Indian roads you come across a strange contraption called "jugaad" which is essentially a cart driven by a diesel pump set. These vehicles do not have any proper registration but still we see them running freely on the roads.

The only reason for the presence of these unauthorized vehicles on the roads is that they are cheap and affordable to the poor class and they stop anywhere to pick up or drop people. It is not that the

people travelling inside these vehicle do not believe in safe driving. They do believe and know that these vehicles are death traps, but the choice of vehicle for travelling among poor is often determined by the economical considerations.

[L] Distance between Two Vehicles

Driving too close to the vehicle in front is also an important cause of accidents. What should be the proper gap between the two vehicles depends mainly on the speed of the vehicles. The faster the speed, the wider the gap is required to avert a collision. If you are driving at a speed of 30 km/hr then you should maintain a distance of at least 30ft [10 meters]. Alternatively, the criteria are that you should keep a two seconds gap between you and the vehicle ahead. Here it is assumed that your brakes are in perfect order.

[M] Other Human Factors

1. *Medical Condition:* Defective vision [one should be able to read the number plate from a distance of 60-70 feet], colour blindness, sudden illnesses like heart attack or epilepsy, etc.
2. *Psychological:* mental stress or tension, family dysfunction, impulsiveness, aggressiveness, being double-minded, etc.
3. *Lane Cutting:* Just to grab some space, drivers frequently change lanes.
4. *Age:* more common among the young between 20-40 years
5. *Sex:* In India males are involved in 80-85% cases of accidents. Death amongst the females is low and it occurs mainly as co passengers rather than as driver. Otherwise, the female drivers believe more in safe driving.
6. *Lack of Training:* Untrained drivers or beginners are at more risk.
7. *Under-Utilization of Safety Measures:* Although this is not a cause for accident but not wearing seat belts & helmets certainly increases the severity of the accidents.

Among human error it is possible that you may make more than one type of human errors at a time.

[2] Vehicular Factors

Mechanical defects in vehicles contribute only to 3% of the total number of accidents. These include failure of brakes, steering, burst tyres, etc. A disproportionate rise in the number of vehicles on roads could be related to increased incidence of accidents. It has been seen that many times the drivers after accidents try to pass on their mistake to

failure of the vehicle. Since we rarely go for a proper analysis of the causes in accidents, this cannot be confirmed. Due to this the drivers get leniency in punishments.

[A] The Misguiding Automobile Companies: Car manufacturers behave like race jockeys inciting the drivers to go at faster and faster speeds. While launching any new vehicle, be it a two wheeler or a four wheeler, its pick-up and speed are touted as USP. They claim that its pick-up is such that within 5-6 seconds it can achieve a speed of 60km/hr. An advertisement shows a biker racing with a tiger or a SUV going faster than a helicopter. Some companies even claim to take you into space. Indeed they may do so, but God knows whether you would return or become a twinkling star in space forever! In a TV ad, a group of bikers look more like stunt men in a circus rather than drivers of a vehicle.

Are these manufacturers completely unaware of the conditions of Indian roads or they are just out to misguide the teens? Don't they know that the majority of Indian roads are not suitable for more than 60 km/hr whether it is a two or a four wheeler? Driving with a speed depends more on the condition of infrastructure rather than the digits in the milometer.

[B] Lack of Safety Features: many companies have double standards for developed and developing countries regarding many extra safety features in their vehicles. This is to cut down prices in a competitive market. For example, provision for rear passenger seat belts has been made only in a few expensive models.

[C] Mismatch in Size of Vehicles: This is not a cause of accidents but an important factor determining the severity of impact between two different sized vehicles at the time of collision. Due to the difference in their heights e.g. car colliding with a truck, there are fair chances that the impact would be borne by the windscreen rather than the engine of the car. This would be more so if the car rams into the truck from behind, as the rear bumper of the truck, that lies at a higher level, would directly hit the head of the car driver. Factors that relatively make the vehicle safer are; higher level of driver's seat, heavier vehicle and more mass in front of driver [engine or crumble zone]

[3] Roads and Environmental Factors

Bad roads and weather conditions cause about 2-3% deaths in road accidents.

[A] Poor Road Layout or Conditions: In India except some modern roads, the concept of traffic engineering is totally missing. Some of the road hurdles are:

- Poor or bad road surface
- Blind turns
- Steep or sharp curves on road with no proper elevation of edges
- Sudden narrowing due to bridges and the like
- Single lane highways without median barriers to prevent dangerous overtaking or head-on collision
- Lack of separate pedestrian lanes
- Lack of road signs
- Dangerous intersections

Poor road design or some basic defect in the layout may be responsible for some unusually high incidence of accidents over a particular stretch of road. The local people frequently relate this fact to some kind of jinx, the ghost of a dead driver and a host of other stories. We should identify these well-documented high risk zones on the highways and rectify them.

[B] Speed Breakers: Yes, it is a mild form of punishment for those who do not respond to visual road signs. Speed breaker, if not clearly made visible by paints or sign board well before, can itself prove to be an accident maker. Many a time the ground clearance of smaller vehicles is not kept in mind while making these speed breakers and instead, they break your car and are the cause for many a wear and tear!

[C] Animals, Pedestrians on Highways: Always be aware of your surroundings while driving. Except on express highways, you may frequently find stray animals and pedestrians appearing suddenly on roads and in order to save them there may be an accident. Animals move usually forward, so, if you direct your vehicle behind the cattle, the probability for being right increases. Beware; don't try this if the animal is leggy as you may suddenly find it in your lap, having crashed through the windscreen!

The two most confused creatures on the roads that I have found are humans and squirrels. Their behaviour is uncertain and unpredictable. Humans may move in any direction or may literally turn and twist on the road in sheer panic. So, in case of humans it is always desirable to slow down, so that there is least confusion on the road. It is possible to save a pedestrian suddenly appearing out of nowhere only if the driver gets a minimum time to react. For example, If a person suddenly appears from the front side of a wrongly parked vehicle to cross the road there are greater chances of him getting killed as even the fastest reacting

driver would not be able to stop the vehicle.

[D] Roadside Objects: Like uprooted trees or leaning poles, etc are responsible for a significant number of deaths in accidents. Many times while changing the tyre or repairing the vehicle we put some big stones to cordon off the area, and invariably forget or don't care to remove them from the roads after doing our job. Such a small negligence may take someone's life.

[E] Work on Progress: there is a significant rise in traffic accidents during the major road repairs or conversion of double lane to four lanes, etc, as the conditions become much worse than the existing road. The road may disappear suddenly or there is unequal leveling in the roads or construction material may be lying haphazardly. In spite of separate funds being allotted for barricading or road signals, contractors/road makers hardly see their use.

[F] Day vs. Night Driving: Chances of accidents during the night are eight times higher than in the day. This is mainly due to poor visibility or temporary blindness caused by long-beams of headlights of approaching traffic. Besides this, at night there are greater chances of falling asleep or colliding with a parked vehicle, as roads margins are not clearly visible and a poor perception of distance of other vehicles.

[IV] HIGHWAYS VS CITY ACCIDENTS

About 40% of total deaths occur on the national highways while the rest occur on the state highways, or inside the cities. In the city as well as on highways about 70% deaths fall to the share of pedestrians, cyclists, motorized two wheelers [also called VRU or vulnerable road users]. The reason for a significantly high death rate among this group is that their number on roads is very large and unlike four wheelers, they do not have a metallic cover. The only significant difference in the accident pattern between cities and highways is that while the incidence of city deaths among the car owners is about 5%, on the highways it increases to 15%. This safety factor in a vehicle could be attributed to the fact that in the city due to traffic congestion fatal car accidents are less common. However, driving on two wheelers is equally risky on both cities as well as on highways. Two-wheeler drivers have five times greater risks than the four wheelers and risks increase 10 times if they do not use helmets.

In a majority of accidents the impacting vehicles are the heavy ones responsible for about 82% accidents on highways [truck-65%, bus-17%] and 61% in the city while the car is responsible for about 15% cases.

[V] WHAT CAN BE DONE ABOUT ROAD ACCIDENTS?

[A] Role of Citizens or Commuters

Before discussing the role of citizen I feel, it would be in the fitness of things to clear some misconceptions about road accidents.

Our Misconceptions:

[1] Accidents are the price that we pay for Technological Advancement: Today almost all of us are very much dependent on transportation. One may go so far as to say that accidents are the penalty that we pay for technological advancement. If this is so, then electricity has brought about much more advancement in our lives and probably it is the most widely used invention in all social segments, but the total number of deaths occurring due to electrocution in a year are only 8076 [in 2007] i.e. fourteen times less as compared to road accidents. We have never seen a sensible adult putting a finger into a plug point, but on the roads we frequently observe careless drivers exposing their lives to dangers.

[2] Concerned Authorities are mainly Responsible for it: In a majority of cases this is not so. You have just seen above that in 80-90% cases human errors are directly or indirectly responsible for road accidents. You may be right to some extent as far as accidents inside city are concerned. However, as far as highways are concerned, the total safety lies with us only and how sensibly and carefully we drive. There is no traffic authority but only display signs for various precautions. No traffic policemen but the Almighty punishes you for your mistakes on highways. So blaming the authorities only is not going to solve the problem.

[3] No one can change our Destiny: Some people believe that no one can change their Destiny. It is Destiny that makes or mars our life. They argue that everyone has to die one day and in a manner predestined by God. We also try to convince ourselves that besides accidents so many other dangers are lurking around in our lives. So how long or to what extent we would compromise with these? This is far from being logical and reasonable. It is a lame and irrational excuse to cover up our risk-taking behaviour. It is up to us to mould our Destiny. It is our attitude towards life that largely determines our fate. In brief, we are the architect of fate. There is nothing like divine dispensation.

[4] Accidents are Rare: All of us feel accidents are a rarity as occurring once in thousands and assure ourselves that there is nothing wrong in taking a little risk now and then. But as driving is part of our daily life, there are greater chances that we may meet with an accident

one day. Suppose you make it a habit to drive fast everyday and every month in a year, then according to the law of probability [1 in 1000], within three years you would expect an accident. If you are lucky enough, this accident may be on the thousandth day, or it could be on the very first day you make a mistake. My dear, three years is too short a life. So the above reasoning is fallacious.

[5] Your Vehicle is Strong: You feel safer inside a car having a stronger metallic cover. However, this metal is just an extra protection and does not permit you to take any added risk. Much would depend on the mode or mechanism of the accident. If it is a head-on collision with a similar or smaller vehicle, then probably the strong body may help you. But then, if the other vehicle is heavier, or if it is a side impact or roll over, then even a strong body may not save you. The fact is that the mode or the type of other colliding vehicle to have an accident are not in our hands. It happens like that. It is not a bullfight where a matador can choose the bull of his choice.

[6] Sometimes You Have to Take Risks: A popular notion is that it is okay to take a risk in some situations, e.g. in order to catch a train, in a medical emergency, to reach in time for an exam or interview, etc. But if you stop to think, one missed train is nothing compared to the irreparable loss you're your family will suffer if you are gone. So, heed the dictum, "Jaan hai to jahan hai". Human life is very very precious and not to be squandered away so easily. You have to achieve greater things for yourself, your family, for society and nation so take care of yourself for greater advantages.

[7] This Will Never Happen to You: We believe that accidents happen only to others and we are somehow immune. According to a survey all of us have a risk to an accident once in a lifetime either as a driver, co passenger or pedestrian. I believe most of us must be having some sad memories related to accidents involving near and dear ones.

What to do as Citizens?

We have to develop a culture of respecting human life and also try to minimize the various human errors mentioned above. The challenge of making our roads safer can be met only with the whole hearted-support and commitment of the entire community. Eighty to 90% accidents occur due to human errors. If we are able to bring about a change in the software i.e. driver's attitudes, we would automatically be able to reduce accidents to a large extent.

The solution 'in theory' appears to be very simple, i.e. follow safety rules' but we hardly see any actual results on the roads. All of us understand about road safety very well, we talk seriously about it, we suggest it to others, we often make a lot of hue and cry over accidents. BUT the fact is that we ourselves don't follow rules. What should we call ourselves, a bunch of hypocrites?

A theory of motivation vs compulsion may probably explain this phenomenon. To follow traffic rules requires both a strong motivation as well as some kind of compulsion. This would be clear with one example of how these words motivation and compulsion are important for us on roads. For many health problems like obesity, the solution appears to be very simple i.e. 'if you eat less and do some exercise' you can easily get a desired figure or weight. Is it really that simple? Had this been so simple then there would not be mushrooming of various health clubs or fitness centers in our country! Instead, it really requires a strong motivation. Many of such people develop a strong will from inside and seriously become conscious about their health and are able to achieve their targets. Still there are some people in whom even a strong motivation fails to convince them and stimulate them to take an initiative. But once they are diagnosed some complications of obesity like hypertension, diabetes, etc, only then they realize seriously about the gravity of the problems. Then they start taking necessary measures like calorie intake, exercise, etc. This is called compulsion. Similarly, at present only a small percentage of people really understands and follows the safety norms seriously. Yes, we can certainly increase their numbers by strongly motivating them. Do not think that only a few people cannot change the system if others don't follow the same. For this noble cause, even if you are single, do not hesitate and be sure that thousands would join you. Interestingly, there would still be a large number of the people who would not care to respond to it. This group would require some kind of compulsion. This compulsion could be in the form when they suffer a humiliation of punishment or a narrow escape in some accidents.

Please honestly watch and control your wrong decisions while driving, otherwise very soon dicey driving may become a habit. If you don't control your rash driving habit it may become a part of your character and one day it may shape your destiny, leading to a sad end.

[B] Role of Good Parenting

1. Parents should be a role model for their children as they observe and imitate all our good and bad habits and behaviour. It would be quite

impractical to ask the children to drive in a way that you tell them and not in a way how you drive.

2. A Formal Training: Learning driving should not be taken lightly. A formal training is very helpful as after learning the basics and practical training one's driving becomes smoother, more confident and safer. Driving courses focus on specific driving skills and knowledge, but they're not a substitute for maturity and experience.

3. Keep an eye on their driving habits: Never praise children for crazy driving habits. During the initial period always supervise their driving in different traffic conditions, roads and weather both in the cities and on highways. Do not yield to remarks like, 'papa you never trust my driving' or 'you always consider me a small kid' or 'you never allow me to have fun' etc. This kind of indulgence is fraught with dangers.

4. Don't yield under pressure: children try to pressurize parents to let them drive when they are underage or get them a new two or four wheeler, by saying that all of their friends have one or now even the neighbor's kids and cousins of a younger age are driving. Many times parents buy them a vehicle just like a toy due to their persuasion or their own pampering. Had it been only a toy this would be just passed off as waste of money. But this could prove to be a fatal toy for the child who is riding and for some innocent persons on the road. Many times I have observed small kids sitting on the parents' lap and driving a car, or a small child sitting independently on driver's seat with help of some extra cushions to raise the level of seat. Parents are mainly to blame.

5. Don't go for fake Driving Licenses: Many times the parents themselves are responsible for encouraging their children to drive before the legal age. They get them licences by furnishing fake certificates with the justification that it will help in schooling or tuitions. There are some valid reasons for making an age limit for driving. For driving a vehicle both physical and mental maturity is essential. It is not like that; if an extraordinary child of 6th standard qualifies an exam of 12th standard, justifies reducing the age limit for appearing for 12th class. If minors are caught with such fake licences, they may be penalized under two sections: 1. the minor is booked for driving without a licence which carries a fine of Rs 1000 with or without the vehicle being impounded. 2. The owner of the vehicle may also be booked for letting an unauthorized person [in this case a minor] drive his/her vehicle. This calls for a fine of Rs 1500 and/or imprisonment.

[E] Role of Media

Present Status: Probably it has been assumed that road traffic related problems and accidents are a local problem/issue. Most of the

news about the road traffic accidents usually finds its place in the local news papers. So far as the print media is concerned, it has been found that it is doing its job effectively by covering them adequately. Not only about accidents, is it also trying its best to bring other traffic related issues into the notice of the public. It frequently shows pictures of open manholes, potholed roads, leaning pole, traffic jams, water logging, etc. to exert pressure over local authorities. It exposes corruption involved in road building etc. Not only in local news papers, in the national dailies also you may have noticed that in recent times there is a significant rise in the number of editorials or traffic related articles expressing their serious concern over deteriorating traffic conditions, pollution, violence on roads, etc.

However, as far as electronic media is concerned, even the major road accidents do not find place in most of the news channels of the national level. They report such cases only when they occur in national capital or occur to some VIP, or the accident occur in some unusual way, so that they can show some good footage or visuals to 'entertain' the viewers. To them it is the visuals not the contents of the news that are important. Unless a good footage of accidents is available, even the major accident news would not find coverage more than the running strips down below on the TV screen. Yes, there are news channel that are showing a good concern about the traffic related problems, but unfortunately, their number is really very few.

Many times it has been seen both in print as well as in electronic media that casualties due to some other trauma or violence get much greater attention than road accidents. In India deaths occurring in murders and train accidents are only one third and one fourth respectively to that of road accidents. But it gets much larger coverage. The best example for the disproportionate coverage is the news on deaths due to terrorist activities. The data of 2007 shows that the deaths due to road accidents were approximately 150 TIMES more than terrorist related casualties, but any deaths in terrorist attacks is a 'news material' for a full-day coverage and that too for many days. Yes, I agree it is required to build up pressure on the government to take action against terrorism. On the other hand, I would not be wrong if I say; by giving such a disproportionately huge attention to the news on terrorism indirectly helps the terrorists to achieve their main aim i.e. arresting national and international attention. Such widespread news always affects the country's economy adversely.

To a great extent we, the citizens, are also responsible for the present way of tackling the news on road traffic accidents by the media, because we are actually the one who decide or affect the TRP of any

such news. In newspapers almost every day we find that there are more deaths in road accidents as compared to the murders in cities. We go quickly through the news on the road accidents in the newspaper, but take a great interest in the murder mysteries of our city. Similarly, on TV also, in spite of the full day coverage of the crime news, an extra half to one hour is totally apportioned to the night as a crime reports. The reason is simple, we like it and the media cashes in on our frailty and passivity.

Expectation from Media: The media, especially the electronic, should realize that it can play a great role in tackling traffic related problems. Media can not only influence the general public but also the government. The government gives due importance and responds accordingly to every news items highlighted by the media. By giving responsible and objective reporting, the media can increase community awareness and understanding about different aspects of road safety, such as causes of accidents, public attitude, role of authorities, etc. Support of media is critical for the success of all government or nongovernmental organizations [NGOs] towards road safety initiatives.

Like health and fitness programmes, daily or weekly brief programmes based on traffic related problems can be of great help to change the attitude of the public. News should not be confined as a bulletin of score related with number of deaths in accidents, instead it should include from time to time some active group discussions that should include the point of view of representatives who are concerned with road safety, e.g. the public, government authorities, automobile companies, etc.

Radio is still a very popular mode of entertainment and news covering 27% of the Indian population. This can be used for similar purposes. Recently FM radio is again getting very popular among city population. A person while driving a vehicle is more susceptible to suggestions regarding the road safety. So FM radio can play an important role enlightening the public regarding traffic safety.

[B] Role of Vehicle Safety Features

[1] Seat Belts: At present safety belts are the most effective and economic means of saving lives and reducing serious injuries in traffic accidents. It protects the occupants from any injury due to forward movement or ejection in case of sudden deceleration. It is mainly effective in a frontal impact and in roll over cases. It can save us from a fatal crash to the extent of 40-65%. Thus you can estimate how many lives are saved or can be saved in a year by using it. Seat belts are also necessary

for rear seat passengers otherwise their bodies will hit the front seat and cause serious injuries to front passengers. There are many examples where the front passengers survived the accident but the rear seat passengers died due to absence of seat-belts. A few misconceptions exist that the belt may trap a passenger, and it is not suitable during pregnancy. In this regards the only precaution that is to be taken is that the lower lap belt should lie low across the pelvic bone instead of directly on the abdomen and the passenger should sit in an upright position. Sometimes it can cause minor bruises which is nothing compared to it's role as a life saver. Many drivers are reluctant to use the belt and if asked they give various funny excuses like: 1. It is required only on highways. 2. It makes the person feel as if tied to the car seats. 3. One was driving in a slow traffic, so one felt there is little probability of accidents. 3. It can crush one's clothes. 4. One was in a hurry, etc.

For enforcing the use of seat belts besides laws, there are seatbelt reminders. It could be a visual-blinker on the front panel that most of the time people ignore. Alternatively there is an alarm which sounds till the belt is put on. There are some stubborn people who put off the alarm by locking the belt not in front but behind their bodies or sit over it after locking. God knows whether they are trying to fool the sensor of alarm or themselves! So, in India probably a system that will not allow the car to start till belt is put on would probably work better. In most countries rigid enforcement of laws has been found to be the only effective way to get motorists to use seatbelts.

[2] Helmets: For motorized two wheelers this is the single most successful and cost effective protection during road accidents. It can reduce mortality in severe accidents by about 40% and the risk of severe head injury by about 70%. Remember head injuries are responsible for 75% of deaths among motorized two wheelers. Among the total neurotrauma admissions, head injury sustained in road accidents constitutes about 60%. Even if you survive with head injuries; there may be significant neurological deficit that may cause a miserable life for both you and your family. So never underestimate the role of the helmet while driving.

Some of the common excuses that you may come across for not using helmet are: 1. It spoils the hairstyle. I have seen an ad in which a hair cream is claimed to maintain the straight hair even under the helmet. This is a perfect example of how these companies closely observe and encash the anxieties of the youth. 2. In summer, it causes a lot of sweating. 3. It is cumbersome to carry or prevent getting stolen.

4. Some smart boys might not want to deprive the girls of seeing a dude like him.

Usually helmets come in dark colours, but I feel a light color would be more visible during night time. Alternatively, fluorescent colours may be used to increase visibility. As with the case of seat belts, compulsory helmets laws work and reduce injuries and fatalities on two wheelers all over the world.

Tip to wives: While celebrating some happy events [like birth days, karwa chauth, marriage anniversary, etc] instead of gifts or jewellery, wives should ask for commitment from their husband, regarding the use of seat belts, helmet or for speed limits.

[3] Airbags: This is an additional protective device for car drivers and front passengers. Its effectiveness, if used alone, is only around 20-25%, but increases to 65-70% if used along with seatbelt. One should be clear that airbags are never an alternative to seatbelts but an extra-safety feature. It is also important to note that wearing seat belts is mandatory even if there are airbags for the following reasons: (1) Seatbelts keep passengers in a correct position, so that air bags fit properly between the steering and the body. Otherwise, airbags may seriously injure the drivers. (2) A sudden pull on seatbelt activates a pretensioner system that further tightens the belt so that it grips the body of driver snugly in the event of an accident. The mechanism of action is that it has a sensor in front of the vehicle that gets activated when a severe impact or deceleration is there. This sensor triggers the inflator or chemical propellant that inflates quickly the bag with nitrogen or argon gas. The whole process occurs quickly [in 1/20th second], we hardly notice it. Many carmakers are providing additional air bags [up to 10-12] in the door frames, floor and roof in some costly models.

Despite being a very costly safety device, the bags have several other disadvantages as compared to seat belts viz: 1. Airbags work only in severe impacts while seatbelts protect even at slower speeds. 2. Airbags work ONLY in frontal crashes while seatbelts are effective during side impacts and rollovers too. 3. Protection rate of airbags is very low. 4. They are designed only for adults and older children and can cause serious injuries to small children. The only advantage of air bags is that they protect the upper body better during high-speed crashes when the seatbelt may not effectively restrain the head and the chest.

[4] No to Metallic Bars or Stiff Bumpers: The heavy steel bumpers [also called bull bars] were designed mainly for SUVs in rural areas for

protection of vehicles from large animals, etc. Many people prefer to use stiff metallic bumpers in their vehicles much like armour. Yes, this does provide safety BUT only to the vehicle and not to the driver. Vehicles are designed in a way that the front portion crumbles after a collision, and dampens the impact of the crash before it reaches the driver. Had there been metallic bumpers joined to the main axis of the vehicle, the majority of the impact would have been passed on to the driver causing more serious injuries. It is the same difference as a person falling from a height onto a cemented floor or on sand. For the same reason now instead of metallic bumpers [that used to be popular in old cars] all the new cars have nonmetallic bumpers. So would thou save your beloved car or thyself?

[5] Periodic Check for Vehicle: If your vehicle is singly handled, you can very well make out if there is any thing abnormal during driving. Ignoring the fitness of your vehicle may tax you heavily. For example, if you ignore a smooth tyre, poor brakes, any abnormal sounds or oil dribbling from the engine, it could be a cause for an accident. Though prima facie in such cases it would appear to be a defect in the machine, but truly speaking, it is the fault of the driver who maintains the machine. Commercial vehicle owners have been found to be more negligent about the maintenance of their vehicles. Please know your vehicle fully by going through the manual lying in glove compartment of your vehicle. I believe that hardly gets your attention beyond using its three free service coupons.

[6] Restriction on Engine Power or Forcing less Powerful Vehicles: In some countries e.g. Japan, inexperienced drivers or traffic offenders are transferred to vehicles that have less power [especially bikers]. This has shown a reduction of casualties by 25% in young motorcyclists.

[7] For Non-Motorized Vehicles: Bicycles and rickshaws should use both front and rear reflectors and fluorescent colours to enhance their visibility at night. These reflectors should also be mandatory for cattle carts. Use of helmets by cyclists also reduce the probability of injuries and fatalities.

[C] Role of Government

Present Attitude of the Government:

Although the government is very well informed about the present road safety and about urgency or priority for serious measures for it, we do not see a desired response from the government. The government is very active in making some committees for the detailed study on such traffic problems. Yes, it is true that these committee members do very

hard work to prepare the feed back or guidelines for betterment regarding road accidents and other traffic related problems. It appears that these guidelines are basically recommendatory, or just a suggestion and not mandatory for the government to follow. So nobody can guess when the actual work would start after these recommendations. Sometimes the proposal is so extensively and slowly churned through committees and sub-committees on planning, finance, law, etc, causing a considerable delay in implementation. By that time the scene or requirement changes completely and the purpose is defeated. Ultimately, it is the common man who has to suffer at the end and on the 'road'. To whom the common man should blame for the avoidable sufferings?

Expectations from the Government:

Measures to improve traffic system require a strong political will and financial investments, so the decisions need to be made at the highest levels of Government. Practically speaking, there are some measures that can be implemented properly only at the level of the government and for that the public cannot be held responsible. These are:

[1] Need for a Single Leading Agency: In many countries, good results had been obtained when they formed a single body or agency at a national level to deal with different kinds of issues regarding the road traffic safety. In India, if we make one such lead agency responsible for all kinds of traffic problems with adequate resources and powers that would help a lot in this regard. This agency will help in coordinating among the various departments related with traffic safety. It can mobilize political support on priority basis and resolve many other political issues like Central vs State governments. Moreover it would minimize the blame game among the various departments and it can also be made publicly accountable. A similar kind of single body would also be helpful for the city and urban traffic. Although a proposal for such single agency both for highways and city is probably under consideration for the last many years, but nobody knows when it would come into existence.

[2] Road Traffic Safety: As a Subject in Education System: The topic of 'road traffic' covers various technical or engineering issues. It affects the people of the whole country irrespective of age group, social status or the city. Thus it deserves to be included as subject in our education system. Education of the traffic science is like a vaccine against the epidemic called road accidents. Our mental-make up is such that unless we introduce a subject into the educational syllabus, we do not recognize its importance in actuality. Traffic science, in spite of being a century old, has still not found a place in our education system, especially

at college level. Now it is better to be late than never. It is the job of experts in the education system to decide how to spread this traffic education into different classes ranging from primary to university levels. Some suggestions are given below:

1. In Preschool: Nursery children may be introduced to the elementary concept of road safety through small stories or rhymes. Don't think it is too early to educate small kids. It is a fact that one never forgets the rhymes or stories learnt in the nursery classes. When a three-year-old child can drive a car expertly in his computer games, why can't he understand traffic rules? We should not teach them all traffic rules at this stage, but we can certainly make a start.

2. In Primary School: School curriculum should include a section on road safety. Children may also be taught how to walk on and cross roads by giving examples.

3. In Middle and High School: By this age they start riding bicycles or small motorized two wheelers. Now traffic rules and the road signs can be taught in greater detail. Principles of accident prevention, basic life support and First-aid can be incorporated in the school curriculum at higher secondary level.

4. In Universities: Traffic Science has still not been evolved as a subject for study at the university level. I think it deserves to be a fully-fledged subject in engineering. I am sure if this subject is introduced at a higher level, certainly those who pursue it as fulltime career will get priority over inexperienced people in this field. A rapid rise in the turn-over that is involved in the road infrastructure and automobiles, raises fair hopes for those who follow it as a career.

[3] Better Road Infrastructure: Here I would consider highways only. The urban roads have been discussed in chapter 10 [Biography of Urban Roads in India].

Highways are the most common route of transportation in India today and for this we totally depend on the government. They bear almost 80-90% of the country's passenger traffic and 60- 65% of its freight. Proper roads are not only important for safety reasons but also for comfortable driving and long life of vehicles. Although the total road network in India is very vast [33,15,231 Km] being next to the USA, the quality of roads is not satisfactory on most of the highways. The reason is that it gets only one-third of the required funds for its maintenance. This leads to the deterioration of roads and high transport costs for users.

The National Highways Development Project is an excellent effort

on the part of the government for the upgrading and maintenance of national highways. Giving priority to constructions of national highways seems to be very cost effective as investing on 2% of road network would benefit 40% load of total traffic in India.[NH constitute 2% of road network but carry 40% load of total Indian traffic]. Having a separate authority for this purpose will further facilitate its timely completion, maintenance, and proper use of the latest technology and safety measures for the designing and construction. Though we don't expect the government to construct express highways every where but four lanes are a dire need to lessen the burden of traffic on our roads. Whenever we drive on one of the newly-constructed expressways, it is a pleasure and a sea change from the crowded city roads. This is one of the few reasons for which the government deserves sincere thanks.

However, there are to be some concerns about the speed of road construction under this project. Up to the end of 2008, out of total target of 52,755 km highways, in only 18% the actual work has been completed. Considering this speed it will take several decades for all NH to be converted into world class highways and that too if it is on the priority list of every succeeding government. This above fact is for only 2% of Indian roads. There are State highways [4%] and district roads [14%] that also carry a significant percentage of road traffic [40% of total Indian traffic], we don't know what to expect for them. If a project is not completed in time, there are several disadvantages: 1. Traffic demands keeps on changing with the passage of time, so the scene may become quite different when the project is completed, and it may not serve the purpose. 2. There is a significant rise in traffic accidents during the period when the road is being made as the conditions become even worse during those days. 3. The cost of the project rises tremendously.

There are also some minor but important issues regarding these highways policy that I would like to mention here.

1. Highways should be made with a long-term planning so that further widening may not be required soon. This would not only save nation's resources BUT also trees that are sacrificed in the wake of road making.

2. Except a few express highways, in all the newly-constructed four lane highways, lack of facilities or convenience centers facilities is a serious problem especially for women. On Indian highways, it seems, this facility is supposed to be provided by petrol pumps owners only but they are poorly maintained and usually locked up. In fact, availability of toilets becomes a USP of road-side dhabas where its availability gets

priority over the menu.

3. National highways project should truly be considered like one of our national programmes in getting the priority for the budget, etc irrespective of the fact which government is in power. Besides, these projects should be minimally interfered with by the other ministries. Changing its chairmen frequently may also affect the progress of the project. For highways we need a chairman with sufficient power and budget.

4. Remember even on the best roads in India i.e. expressways, incidence of accidents is significant. For example, on the Mumbai-Pune expressway every week on an average five people are killed in accidents. Thus again the importance of human errors cannot be overemphasized. Though this high incidence of fatal accidents is not seen on the express highways of the other countries, having even much higher maximum speed limit i.e. between 120-140 km/hr [USA, UK, china and France]. We should examine as to why this is so in India where the maximum speed that is allowed on all kinds of highways including the express one is only around 80-90 km/hr [varying among the States].

5. Toll tax: It is true that tax is necessary for the maintenance of the highways. While deciding its amount the government should see to it that toll tax is kept to the bare minimum. The government should consider: [1] only the maintenance cost should be the target of toll tax and the construction cost should not be taken into account. [2] All this money is actually used for the maintenance of highways. The government should ensure whether jobs the company is supposed to provide, are being done or not. [3] A neutral team should audit the accounts of the companies whether its expenses are genuine or cooked-up and inflated.

6. Many times the curves in the roads are not straightened. As a result, one is not comfortable in driving even when the road size is adequate. Perhaps the authorities try to avoid any conflict with the local land owners regarding the land acquisition as it may cause delay in the project. Although as per suggestion, curves are necessary because as it forces the driver to remain at the lower speed limit. However, I don't think this could be the reason for these left-over curves.

[4] Better Mass Transit Systems: The public transport system is an extremely important measure against road accidents not only inside cities but also on highways. I believe this sector really needs greater attention as it would help the real major victims i.e. vulnerable road users who constitutes 68% of total deaths. The role of public transport system for both highways and inside cities has been discussed simultaneously

in detail in chapter 12 [How to Decongest Cities part I: Measures for vehicular factors]

[5] Better Traffic Control: Measures against Speeding: Considering speed as the single most important determinant for accidents, it should be the core theme for the road safety measures on highways as well as in cities. For this, authorities can take the help of: [1] Video cameras: they are considered the most cost effective means. On busy roads it has been found that within six months their cost is recovered. Besides, it records photographic evidence of a speeding offence that is admissible in a court. [2] Speed governor [also called tachometers]: these devices can be fitted to vehicles to limit maximum speed of vehicle. They are useful in heavy goods carriers and public coaches. [3] Intelligent speed adaptation: In this system the vehicle knows the permitted or recommended maximum speed for the road along which it is travelling. To control the speed, a digital road map coded in the vehicle works in co ordination with a satellite positioning system. [4] Use of Radar

If we simply display the sign that 'Speed limit for heavy/light vehicle is 50/30 km/hr, we may not get the desired results but once we add to it a punitive measure like 'fine of Rs 1000 for crossing the speed limit and random checks ahead' a much better response could be obtained.

Measure to Control Drinking and Driving: see the chapter on drinking and driving [chapter 5].

Highway Patrolling: Highway police have a great role to play in helping accident victims. It can also help by properly enforcing safety regulations. The two most important traffic violations are those for erratic parking and driving in wrong [reverse] lane. Besides, they can keep a check over speeding and dangerous overtaking. The fear of being caught can help traffic move in order. A similar kind of patrolling can also help to control rash drivers in cities between traffic lights.

Compulsory Reporting: In many Gulf Countries, reporting an accident to the nearest police station is compulsory. You cannot settle the issue at your level, instead you have to face an enquiry. You cannot even get your vehicle repaired without informing the police. The garage owner will be punished if he removes the dents or paints the vehicle. In Saudi Arabia, after the accident, both the drivers [if not hospitalized] are taken to a police station irrespective of the fact whose fault it was and are kept in jail till the responsibility is fixed or compensations are paid. In India probably this would be too much, but at least the reporting of accidents should be made compulsory even if there is no serious injury. This would be not only a deterrent but also help to analyze the accident data. It is an irony that any rule in India made for a good cause very soon becomes

a ground for corruption.

[6] Better Trauma care system: see chapter 14 [how to help accidents victims]

[7] Control over corruption: Last but not the least a strong will to curb corruption in all segments is necessary, so that major part of grants is utilized for road safety [see also chapters 7&13].

[F] Others' Role

Role of Human Rights Commission: "safety on the road" is a fundamental right of citizens and an essential condition for safe and secure living and a sustainable development of society. In this era of fast moving vehicles, the weaker sections on roads like pedestrians are losing their rights of safety on roads.

Celebrities: Celebrities and entertainment industry should not glamorize speed and should endorse wearing seatbelts and helmets. There is need for more 'traffic theme based' movies. Films should avoid stunts showing speed because that makes the viewers prone to imitate.

Advertisers: Discourage advertisements which glamorize and promote unsafe practices and products.

Survivors of road traffic crashes and family members of the sufferer should form an association and try to spread awareness about safe driving, etc.

Role of social organizations NGOs and business leaders: There is a need for an aggressive programme for the road traffic accidents at the national level where all these can contribute considerably.

Research: New car models are to be subjected to a range of crash tests and also to pedestrian friendliness, especially in Indian conditions.

[VI] SOME GOOD AND BAD THINGS ABOUT TRUCK DRIVERS

Yes it is true that truck is frequently found to be one of the impacting vehicles in roadside accidents. I have tried to explore some of the relevant points regarding this high incidence of accidents:

1. At present trucks constitute about 4% of the total vehicles [22 lakhs belong to the big and 11 lakhs to the small category]. Though apparently their number is much less as compared to other vehicles, considering the fact that they are always on the run as compared to personal vehicles and they run mainly on highways, there are greater chance that big and impacting vehicle is a truck.

2. Yes, their thinking may be different, as they are more concerned with safety of goods inside rather than the safety of public on roads.

3. Most of the trucks are overloaded and proper balance of such vehicle poses a real problem. Thus their drivers avoid taking a swift or acute turn suddenly if they are supposed to do to save someone. For the same reason they do not prefer to take the truck off road in such situations.

4. Since truck drivers have less chances of being hurt in case of a collision, they have fewer inhibitions in such situations.

5. Only in 25% cases the truck owner himself drives or accompanies the driver. So unlike drivers of the personal vehicles, in 75% cases there is no one with truck drivers to check their driving habits, especially if there is an element of aggressive behaviour or rage on their part.

6. They frequently drink while driving. Surveys reveal that more than 75% drivers consume alcohol during driving.

7. Sometimes to dodge the traffic police or RTO personnel [who frequently indulge in illegal extortion of money], they drive rashly at a high speed.

8. They are over-worked. For making more profit, transporters frequently force their drivers to work for long hours even when they are exhausted.

9. It has been found that more than 60% drivers have fake driving licences. They are not properly trained and their knowledge regarding traffic rules is very poor.

So far as road manners on highways are concerned, I have personally found truck drivers better than the car drivers. It is quite possible that when you ask a car driver for a pass, just out of ego he may not allow you for quite some time. If somehow you push in without waiting for a pass, you probably may not find any genuine reason why it did not allow you to overtake. This is not usually so with truck drivers. Whenever possible, they immediately allow you to overtake. They will also indicate nicely by throwing their hand signals. While car drivers hardly give even the indicators, let alone giving hand signals. Many a time you become impatient if not given a pass by truck drivers and you forcibly overtake it and invariably you would find a genuine reason why they were not allowing overtaking and you regret your decision. Moreover, till you get the pass, they keep you busy in reading some very interesting or funny rhymes based on humour and philosophy.

These truck drivers cover their journey in terms of days or weeks as their trip requires freight to be transported to long distances. This along with the fact that speed might affect the balance of the loaded trucks, they are hardly ever in hurry on roads. While, we the drivers

of cars, two wheelers and even buses cover their journey in terms of hours or minutes. We are the ones who drive mostly in a hurry or desperately.

Some suggestions:

While sharing the road with trucks, buses and other large vehicles, besides the above mentioned points, following suggestions can help us in safe driving.

1. Most trucks need a longer distance to stop. So if there is a truck behind you, signal your intentions well before turning, slowing or stopping, so that truck drivers behind you get more time to apply the brakes. When stopped, especially going uphill, a truck may roll back farther than a car when the driver releases the brakes and engages the clutch. Leave at least one car length between your vehicle and the truck ahead.

2. Be visible to truck drivers. Truck drivers rely mainly on their mirrors and there are some blind spots like on both the sides and immediately behind the truck where the truck driver cannot see you. Stay slightly to the right of your lane, so that you can be seen in the truck driver's mirror. Never follow so closely that a truck driver cannot see your vehicle in the mirror. If you can't see the driver in the mirror, the truck driver also cannot see you.

3. Manufacturing companies should be asked to use a metallic sheet around the trucks covering the lower open area. These are also called under-run guards that prevent vehicles of smaller height from running under the truck.

4. According to their driving reports, they should be rewarded or punished by their employers. Out of these two, the punishment has not been found very effective instead a reward or incentive for not having crashed has been found to be more useful.

5. The transport industry should realize that drivers need adequate rest and breaks while driving.

6. They are very much underpaid. The latest surveys have shown that in 80% the monthly salary is between Rs 1500-2000 while in 15% it is between Rs 1000-1500. More than 90% are not given any benefit of PF, GF, pension or other necessary facilities. The transport industry should consider their problems seriously.

7. Improve Educational status: The educational status in truck drivers is very low especially in English. Though the national literacy rate is 65.4%, it has been found that only 40-50% among general public can

read and that too in their regional language. Commercial drivers carrying freight have to move more frequently to different States in India, having their own regional languages. The fact that we are using either English or one of the regional languages for sign boards makes it difficult for truck drivers to understand road signs. One uneducated truck driver argued with me, if in India an uneducated or angootha chhap [thumb impression] person can be allowed to contest an election to run the whole country then why can't he run even a vehicle. I answered him that I cannot comment on the politics but driving a vehicle is certainly a very important and responsible job!

Chapter - 3

ARROGANCE ON ROADS: AGGRESSIVE DRIVING & ROAD RAGE

The behaviour of drivers on roads nowadays is deteriorating alarmingly to a very low level. It has become a very common occurrence on roads. Good road behaviour is something very vital that everybody should pay attention to. The two most commonly observed patterns of behavioral problems among drivers today are aggressive driving and road rage. Let us discuss them in some detail.

AGGRESSIVE DRIVING

[I] Definition: It can be defined where an angry or impatient driver behaves or acts aggressively, willfully on some relatively very small traffic issues without any regard to traffic rules and safety of the co-commuters. In simple words, it is an angry reaction or aggressiveness of a driver on the road over some trivial traffic issues. You may have frequently noted two drivers on the road quarrelling over issues like parking, overtaking, etc. Aggressive driving can range from verbal abuse to violence. Some aggressive drivers react vengefully and may cause injuries and damage to other vehicles. It is indeed unfortunate that this kind of behaviour has taken a turn for the worse in recent years. This is not a problem in India alone but a worldwide epidemic. Even in the most developed countries it is on the rise. It has emerged as the most pressing problem for traffic police the world over.

[II] Profile of an Aggressive Driver: Usually in such cases drivers are young males between 18 to 35 years, not very well educated, emotionally disturbed who have no regard for traffic rules or safety on roads and are frequently seen speeding and jumping traffic signals. If you ask their neighbours, office colleagues or relatives, there might be a history of such behaviour in other situations too. However, this profile is not very characteristic as many times people with no past history of such behaviour have been found to behave aggressively on roads. Similarly, there is also no rigid correlation with being poor or rich, educated or uneducated, male or female, young or old in such cases. In fact, everyone has a potential for becoming an aggressive driver. It is probably the magnitude or threshold of the stimulus needed to provoke it, varies from person to person. About

20-25% of people on roads today have a pretty labile emotional level and are easily provoked. These emotionally disturbed drivers who are charged with anger can vent their frustrations against anybody at any time.

[III] What an Aggressive Driver Does on Roads: In general, any activity of other drivers that annoys you or distracts your attention or stresses you comes under this. Some of these activities are:

- Verbal abuses like: 'Andha hai kya?' (Are you blind?), 'Sadak tumhare baap ki hai?' (Is it your father's road?), 'Marna chahta hai kya?' (Want to die?), 'Heavy beema kara rakha hai kya?' (Have you taken a big insurance?), 'Bal bachche nahin hain kya?' (Don't you have kids?), to name a few.
- Rude or inappropriate gestures.
- Stealing somebody else's parking space or pulling into a parking space someone else was waiting for.
- Gate crashing and aggressive tailgating (driving very closely).
- Honking without any reason.
- Deliberately obstructing another vehicle.
- Dangerous overtaking and forcing other drivers or commuters off the road.
- Speeding like a racer or going faster than the recommended speed limit or going too fast for the conditions of the roads there.
- Weaving in and out of traffic.
- Flashing their headlights at the person in front.
- Starting a confrontation, including striking another vehicle with an object.
- In extreme cases, it may include intentionally bumping into another vehicle.
- Throwing objects from a moving vehicle with the intent of damaging other vehicles.

[IV] Causes of Aggressive Driving:

There are two kinds of factors that are responsible for aggressive behaviour. First, preexisting factors that are related to basic personality of the driver [anger, hostility, frustration, etc] that makes him susceptible to aggression. Second, triggering factors that may be some minor traffic disputes that spark off the actual aggression.

1. *Temperament & Mood:* The basic temperament of a person plays a key role in such situations. The reaction after similar traffic dispute may vary from person to person. Some drivers are impulsive and react

quickly and sharply without assessing the situation correctly. We may call it an extravagant reaction to the dispute. While some others are sober and have more guarded reactions in such conditions. I am led to think the basic temperament of a person is not affected much by his educational status, family or social standing.

A person's mood at that particular time is another significant factor that affects his reaction in a given situation. This probably also explains why some people having very good temperament without any previous history sometimes behave very aggressively. Needless to say, a driver who is already emotionally disturbed and in a bad mood is very susceptible to behaving aggressively while driving. The temperament and the mood of the driver in the other vehicle also has a great deal to do with it, as they say it takes "two to tango". It is quite possible that the other one too may be an aggressive person who may not be prepared to tolerate you. So depending on the temperament and mood of the two drivers, there could be several combinations possible. The worst situation arises when both the drivers have hostile temperaments and are in a bad mood on that day.

2. A Dual or Split Personality: We frequently see that people behave differently at home or office and on the road. I may not be wrong if I say that people behave differently with known and unknown people. They may lose their temper very soon with strangers though they may behave differently with friends and colleagues. I don't know the reason for such a disparity. Does it show that man still retains some primitive characters? If yes then which is our real self?

3. Local Culture: Dangerous and aggressive driving in a particular geographical region may reflect a cultural norm. It may be due to a deteriorated or an explosive law and order situation in that particular region. For example, there are some States and particular regions in India where you have to be extra-careful while passing through. It has also been found that in these areas, in addition to aggression on the road, the incidence of crime and accidental death rates is also very high, thereby showing a direct link between aggressive behaviour and a poor law and order situation.

4. Traffic Congestion: It has become a significant triggering factor in India as we are spending more and more time on the roads and are frequently caught up in traffic jams.

5. Minor Collisions causing a Dent or Scratch: Incidents are known where one driver has been killed by another just for causing a small dent in his new vehicle.

6. Personal Problems: Factors like work stress and frustration lead to an aggressive behaviour.

7. *Hurry or Poor Time Management*: e.g. getting late for an appointment causes an undue haste.

8. *When in a Group*: Drivers behave crazily or lose their temper easily when they are in a group on roads. This may be due to the fact that they feel more secure when accompanied by others.

9. *Environmental Factors*: When the outside temperatures soar [in Summers] or it is too noisy, the chances of aggressive behaviour increase.

10. *Too Much Pampering at Home*: A pampered person is not used to listen the word NO in his life. Their temper and tantrum is usually tolerated by others at home. So they expect everyone on road to tolerate their highhandedness and give them preferential treatment and when they do not get their own way they become aggressive. Inside the car they still feel as if they are in their home or in a space where whatever they do or say, they are accountable only to the norms or standards what have been set in their homes. They don't realize that they are in a public place where their behaviour should be attuned to the parameters meant for a civilized society in general. This is also the case with India's neo-rich class (nouveau riche), a fast growing section of our society.

11. *Learning by Example or Inheritance*: We can hardly expect good road behaviour from our progeny if we ourselves behave aggressively on roads.

12. *Misunderstandings*: In some cases it has been seen that incidents of road rage are caused by simple misunderstandings between drivers. Actions of one driver may be perceived by another as a personal insult.

13. *Can be Instructive in Response to Careless Driving by the Others*: Sometimes in big cities people are more aware or made aware to follow traffic rules, expect others to behave similarly and if that is not the case they feel it is their right to punish the offenders. For example, people get very annoyed when other drivers jump queues, lanes or signals causing them to miss their chance to cross at a green light and so on. Driving puts people in a situation in which they are forced to take a high degree of interest in the movements and behaviour of strangers and to make sure that others' mistakes do not cost them their lives.

14. *Others Silly Triggers: such as:*

- Disputes over parking space.
- Not letting overtaking.
- Dispute over which car had the right of way first.
- Driving too slowly.

- People get angry on those talking on mobile phones and playing loud music.

Although these appear to be very minor factors, there are several examples of each of the above-mentioned responsible for severe violence on roads.

[VI] What to do about aggressive driving:

The best way to avoid a dispute is to ignore aggressive behaviour by the others. Many of you may not agree with me. Most people feel that is wrong to yield to aggressive behaviour. Of course, when you have done no wrong, you strongly feel like teaching a lesson to such people for their silly behaviour. You may feel that if you don't teach them a lesson, they would repeat the same thing with others on the road. Sometimes a 'handsome hunk' may feel insulted especially when harassed in front of his wife and kids, and feel tempted to pull over to "settle things". They also feel by not accepting a challenge they might be labeled cowards. It is certainly true to some extent. But before forming an opinion, it would be wise to go through the following points [that discuss why it is necessary to avoid it].

1. Think of the Consequences: Always weigh the consequences before taking a tough stand. Remember, a split-second impulsiveness can ruin the rest of your life. If you accept a challenge, it will start a chain reaction, e.g. lodging a complaint with the police or calling up friends to show your muscle power. It is just a matter of chance whose well-wishers reach the scene first and there is sure to be a battle of sorts on the road. You ask influential acquaintances for favours and fight lengthy lawsuits. During all this you lose valuable time, money and suffer serious consequences in your professional life with no real achievement. In some extreme situations if you injure or kill someone in anger, you may end up in jail.

2. Not to Lose Your Peace of Mind: Those who are not used to quarrelling will not easily forget the physical or verbal abuse. On the contrary the notorious elements involved will easily forget the incident the very next moment. Believe me, even the smallest fight in a self-respecting person's life will spoil the whole day and that would be quite evident from his face. Any body at work can guess whether he has had a fight at home or on his way to office. He may be unable to concentrate on work the whole day. If someone slaps or abuses you, especially in front of your close ones, your whole behaviour and psychology may change for long. Even if you beat up the assaulting person to your heart's content, you would not get back your peace of mind completely. So it is advisable to avoid it.

3. *No Courts on the Road:* Except for the two parties involved, there is no one on the road to decide as to who is right or wrong? Initially, there may be few spectators that may know the real situation, but people generally do not like to interfere in such matters nowadays. There only remains a group of curious people who simply enjoy the "Tamasha". So, there is no point in arguing the matter for a long time on the spot.

4. *Don't Waste Your Time:* These days everybody is short of time, so why waste such a valuable commodity on the road for a false notion of prestige.

5. *Don't Fight with Strangers: Why?*

There are two reasons for it.

[a] If you are a very senior, reputed, person and you indulge in a fight with a known person, you might get the benefit of your background. But with an unknown person at a place where no one is there to help, your background may not help.

[b] As you do not know the background of the other commuters, you may underestimate his nuisance value. I would like to narrate a real incident that occurred with my friend who was coming from Delhi to Agra by car. At one place he had to apply the brakes suddenly to save a pedestrian causing a car behind his to collide with the rear of his car. Seeing a significant damage, my friend started arguing with the driver of the other vehicle. Though he offered to pay for the damages, my friend was not satisfied probably wanting to teach him a lesson. Then suddenly a passenger sitting on the back seat of the other car came out and put a big gun to my friend's forehead and said, look gentleman, what do you want now? If you want money for the damages, then take it, and if you want a fight, you are welcome. My friend's too much argumentation had probably irritated this person who, we learnt later, was a big 'don'. Needless to say, my friend's anger evaporated on seeing the gun and he hastily retreated into his car and set off on his way. The message here is: Do not underestimate the potential for violence in others and secondly, sometimes you yourself may be responsible for inviting the trouble.

6. *Your Health:* Just like work stress, traffic stress also affects our health. We should try not to add to it by indulging in traffic disputes. Surveys have shown that drivers who lose their temper behind the wheel are at much greater risks to themselves than to others. Release of adrenaline in the blood during anger causes a sudden and severe rise in blood pressure that may be responsible for cardiac or brain strokes. In fact tension affects

not only your health [increases heart diseases 4-5 times], but also your efficiency and appearance [ladies, please note that tension adversely affects your complexion and causes permanent lines on your face]

I hope this is enough evidence to convince you to avoid aggressive drivers. I admit that I may not be dead right in this respect or I am not saying that we should make it a habit to suffer always or keep mum even when we are right. No, there are other ways to tackle the situation like taking the help of the police, etc.

How to Avoid Aggressive Driving

Now it is clear from the above that we should try our best to avoid such incidents. The next big question is how to do this.

Step I: Analyze Yourself Honestly: Psychologists have described two types of drivers on the road. One is a safe driver who very well understands and cares for the other people's needs and the expectations on the road. They believe in safe driving in all traffic situations. The second category is of those who think only about their own safety and are least concerned about other people on the road. They believe that they and their business are more important than the lives of anyone else on the road. They feel their driving decisions are always right. The commuters should give them special treatment and should not obstruct their way or delay them. Thus just as in case of good or bad body language, people's driving behaviour may be pleasant or unpleasant.

First of all analyze yourself very honestly and think to which category you belong. This is possible only when you are in a cool frame of mind and not self-righteous. Sometimes your close ones can give you an honest opinion about you. So unless you do an honest self-analysis, the points mentioned below would not affect your driving sense much. You may simply pass on this to other fellows thinking that these are not meant for you.

Once you develop a good traffic psychology, you would realize that the needs or expectations of every category of commuters on roads [cars, two wheelers, cycles, pedestrians, etc.] are different and help to maintain a good balance among the different road users. Therefore, a good traffic psychology not only modifies our driving behaviour but improves our personality as well. Unless we develop this quality in ourselves, we cannot expect the same from the others.

Step II: Identify Your Weak Points or Triggering Factors: You have to find out what exactly makes you angry while driving or what triggers in the past have been responsible for your violent behaviour. It is quite possible that among all the factors mentioned above, a few may

annoy you disproportionately (like, showing a red rag to a bull). These triggering factors may differ from person to person or even from country to country [for example, a red rag which severely annoys a bull, but it does not provoke other animals]. Do not feel otherwise if you find something wrong with your driving habits as everyone of us may not be a perfect driver. There is always scope for all of us to learn as driving is an art and learning is a continuous process.

Step III: Follow These Guidelines or Suggestions:

1. Adjust Your Attitude: Be polite, courteous and tolerant of other drivers' errors even if the other driver does not appear to do the same. It is a documented fact that 90% of those drivers who are more tolerant and forgiving in nature do not find aggressive driving a problem on roads or do not feel anxiety while on the road. So change your attitude and make an effort to stay cool and learn to ignore trivial disputes. This will also make a marked difference in your personal life.

2. Control Your Anger: You cannot take a right decision when you are angry, the moment anger sets in, reason flies out of the window. It is a vicious cycle in which anger generates more anger. The earlier you intercept the cycle, the better are the results. The angrier you get, the more adrenaline you produce making you vengeful and less forgiving. A better leash on your anger means better control over vehicle and increased safety for you and others on the road. If you think you have a problem, look for anger-management measures or courses that may be available.

3. Take Time to React: This is a time tested formula for all types of disputes. The effect of adrenaline lasts only for a few minutes so very soon the intensity of your toxic emotions or craving for revenge reduces. Usually in such situations you act before you think, and to avoid confrontations make some policy before hand when you are cool-headed.

4. Give Benefit of Doubt: Give the other driver the benefit of doubt. It is quite possible that his actions had been unintentional and are not personal. Think of the times when you yourself were young and inexperienced as drivers and may have committed some blunders on the road and probably got away with it.

5. Don't Accept Challenges: [no clapping with one hand] A fight cannot occur unless both the parties are for it. Remember, try to pull yourself out at the very beginning of the dispute, otherwise matters soon get out of hand and it becomes a prestige issue with both the concerned parties. Always avoid making eye contact with the hostile driver as this is often seen as a sign of accepting the challenge. Try to maintain a distance and get out of the way as early as possible even if you are right. You don't want to be absolutely right. Also ensure your safety by

keeping car doors locked. Don't get out of your vehicle easily if you suspect that some one has intentionally struck your vehicle as it might be an attempt at kidnapping after provoking you to behave aggressively.

6. Don't Hesitate to Apologize if You are Wrong: It is not always easy to say sorry especially to strangers. If you make a mistake, apologize properly. Here it is not a point that it should be a heart-felt apology, but at least you can make an effort. Remember words do only 10% the job; it is the tone and gesture that impresses most. Just by changing the tone and gesture while saying the same sentence i.e. 'I am sorry' you can convey from extreme politeness to even abuse.

7. Learn to Smile at Fellow Commuters: Don't keep your smile reserved for your customers or office colleagues or people whom you know or love. Please spare some for your fellow-travellers. For example, while asking for a pass or requesting to shift his vehicle, etc. and see the magical effect!

8. Don't Panic About Damage to Your Vehicle: Nowadays most of them are insured and you are sure to get damages. See also chapter 4 (The first dent on my car).

9. Role of Fellow-Passengers: They should not encourage or incite the person driving to fight.

10. Set an Example for the Next Generation: As we know, moral values are largely imbibed from parents and seniors and do not require any formal teaching or education. The same is true of traffic etiquette. Secondly, don't feel embarrassed in front of your younger ones if you are being harassed. Instead, you have to show them how to avoid aggression on the road.

11. Be a Model Road User: You could be a role model even for the other commuters. If you follow traffic rules even when nobody is watching, certainly it will motivate others to follow it. Some times you justify your traffic violations by saying that you were sure about safety, but like this you may indirectly inspire others to violate the rule.

12. Be Lakhnavi: In the city of Lucknow, in older days it used to be a part of lakhnavi tehzeeb(manner) that the two nawabs always used to offer the other one to pass 'pehle aap pehle aap'. I don't know whether it is still followed even in Lucknow.

13. Don't Mind Using a Reverse Gear: It does not mean you are pulling away from a battlefield. If you recall, you find that during the whole day you use the reverse gear a number of times while pulling

in and out of parking lots, etc. So if you are required to do so, one more time due to some traffic problem, what is the harm? Even if the other person is trying to pressurize you it hardly matters.

14. If Caught in a Traffic Jam: In such a situation first of all you should understand that it is a collective problem and you have to bear it with other drivers. You can hardly change the road or traffic conditions immediately, but certainly you can control your reactions to it. Accept that you are going to be late and inform the concerned people. In these conditions try to make the most of your time by listening to music, etc. keep your body relaxed. Solve some problems or take the time to plan ahead. Certainly the sky will not fall down, if you are late. And it definitely is not the end of the world if you are a bit late?

15. Get Help from Police: If someone is threatening you or is in a mood for illogical arguments, politely offer to accompany him to the nearest police station and leave the rest to the police. People who are of shady character would always be hesitant to face the police. If you sense that the people arguing with you are in a majority and their intentions are not good it is always better to involve the police. If there is no compulsion to get out of the car, you may inform the police by your cell phone. Alternatively if you don't have any police number, you may inform your close ones about the incident and your location. If you don't have a mobile phone, and you are being constantly chased, drive to the nearest police station or a busy place where there are people around like some store, mall or hospital. If you succeed in avoiding the culprits, you may later on complain to the police with the particulars of their vehicle.

16. Periodically Assess the Behavior of Your Driver: Same as you ensure the roadworthiness of your car, there is also a need to assess the temperament and physical fitness of your driver periodically. Although it holds true of both commercial and private vehicle owners, it seems to be more important for commercial vehicle drivers like school buses, trucks and taxis. The reason is that when the owner of the vehicle is not there to keep a check on their activities, they may feel less inhibited and become arrogant and aggressive. If so, this is the time to chuck them out rather than wait for a mishap to occur. Counsel him to change his profession as even if he continues as a driver in some other organization, he will be equally dangerous on the road.

17. Don't Try to Educate: It is no use trying to educate a strange or hostile person on the road. Leave this job to their close ones or the traffic police.

18. *Concentrate on Your Basic Aim in Life:* You cannot fight all your battles, and to win a big battle it is quite acceptable to ignore some smaller ones. Consider that these traffic disputes are really of no consequence in the larger picture of things and a part of daily life. There are so many struggles in life and you may do well to put your energy to much better use elsewhere. So save your time and energy for something more worthwhile.

19. *Better Time Management:* In order to avoid rush hour jams, you should leave home well before time or alter your schedule a little.

20. *Don't drive when you are angry, upset, or tired.*

21. *Avoid Menace Provoking Activities:* follow some basic traffic etiquette: e.g. while parking do not obstruct other's vehicles and look before reversing. Choose the correct lane well before the crossing and don't jump lanes suddenly at the crossing. Allow to overtake if someone demands, do not block the roads while talking to some pedestrian or driver, use horn properly, use short beam for the incoming traffic, etc.

ROAD RAGE

Definition: The road rage is an extreme form of aggressive driving where the angry driver on a trifling traffic dispute becomes violent and intentionally assaults or injures the other drivers or people on the road. Such people have a basic criminal instinct so that they do not hesitate to kill someone. They might have a criminal background or history of violent behaviour in the past. They become violent at the slightest provocation not only on roads but also on other occasions. You might have heard that someone has seriously injured his wife or children over a very small issue. The message is that if such people can kill their loved ones there is no reason why he will hesitate to kill someone not related, that too, at a place where nobody knows him while committing a crime and when caught he would be booked only for an unintentional death for which probably he would get the bail at the police station level itself.

Road rage is an informal terminology that has probably originated from the USA. The main differences between aggressive driving and road rage are: In Aggressive driving there may be verbal altercations or by driving dangerously, they may put the others' life in danger indirectly but usually this does not go beyond heated arguments or furious shouts. Road rage is basically a criminal behaviour where an uncontrollable anger causes one driver to directly attack another driver to seriously injure or kill. The aggressive drivers are considered mainly as traffic offenders while the drivers of road rage are purely criminals. The causes and triggering factors in both are the same as mentioned above except that the reaction

BRAVE
MAN! T&K,
T&K.: VICTIM
OF ROAD
RAGE.



in cases of road rage is much more exaggerated. At the slightest mistake or provocation by the other driver they are ready to teach a lesson by injuring him or even causing death. They have also been named as road terrorists and such killings as vehicular homicides. Victims are usually totally innocent people who happen to be in the wrong place at the wrong time. Some psychologists hold that violent behaviour is an animal instinct which is necessary for the survival of their species.

Incidence: There are no data available in India as to how many people are killed as a result of road rage. But certainly road rage is on the increase these days. You must have heard about innocent people been mercilessly beaten to death or attacked on roads. Figures that are available from the developed countries show that thousands of persons are killed in incidents of road rage every year in countries like USA [1200-1500/year] and UK. Why do these developed countries have such a high incidence of road rage? Does it have some direct relation with modernization or the fast economic growth of a nation? We are worried about the emergence of this phenomenon because now our country has also started to experience the same kind of syndrome of modernization, economic boom and prosperity. Is this the reason why India is also beginning to experience increased incidence of road rage? If so, then we have to find out why and how modernization adversely affects the civic sense of the people.

Weapons Used: In most cases they use weapons like firearms, knives, swords during the attack. The vehicle which the culprit is driving has often been used as a weapon to kill. Besides, any object available in the car or at the spot like iron rods, jack handles, Baseball bats, batons, helmets, liquor bottles, stones, etc are used. If nothing is available then a free style WWF follows with fists and feet.

Road rage: Is it a Psychiatric Disorder?

If you examine from a psychiatrist's point of view, you will certainly find many significant symptoms of some psychiatric disorders [e.g. intermittent explosive disorder] in people who indulge in road rage. However, if you question the experts or the authorities who deal with these criminals, they would certainly disagree. I also think that labeling these criminals as psychiatric patients would give them an excuse for their behaviour and injustice to the victims. These so-called road terrorists are a real menace to the public. People with such background of criminal behaviour should not be ignored and if at all, they are psychiatric patients, in my opinion, jail would be the best mental asylum for them. My reasons for disagreement are: 1. Though they are labelled as mentally sick, but they

would never allow their car to collide with a stronger vehicle like truck or bus. 2. Why are they first diagnosed during incidence of road rage only? If they really suffer from such disorders, there must be a long history. 3. I don't agree that road rage is out of frustration, overwork, or financial problems, etc. It may be a precipitating factor, but not the root cause. In fact most of us have some or the other problem in our lives, but we do not indulge in road rage. What I think they are pampered, spoilt, uncivilized people with extreme degrees of arrogance. They may be mentally disturbed but I don't think that they should be labelled as mentally sick and should be allowed to go scot free.

Punishments for Aggressive Driving & Road Rage

For Aggressive Driving: Aggressive drivers are most commonly booked under the Motor Vehicles Act for rash and negligent driving [inviting a penalty of Rs 1000] and for dangerous driving [penalty of Rs 1000 and/or cancellation of driving license and/or imprisonment up to 6 months]. However, most of the time penalty is confined only to a monetary fine and the traffic police rarely punish them with imprisonment. The fine is taken lightly by these aggressive drivers and, in fact, they consider it as permission for the next such offences. So, instead of making new laws, there is a need for better enforcement of the existing traffic laws.

For road rage: These road terrorists are nothing less than common criminals and should be treated as such. At present, road rage is not covered in M.V. Act and we need new laws to cover this offence. At present, they can be covered under the existing criminal laws. There is a wide range of sections in IPC that can be applied to road rage [279, 337, and 338, 160, 304A, 302 and 302]. We see there are plenty of IPC sections ranging from mild to severe punishments that can be applied to road rage criminals. However, the traffic police are very reluctant in taking harsh actions in such cases. Even after the death of the victim they usually book offender under weaker sections like rash and negligent driving or under section 160 of the Indian Penal Code for fighting or quarrelling on the road which at the worst attracts a month's imprisonment. How can the killing of an innocent person on road wilfully and intentionally be regarded as a 'negligent act on road'? or be called a result of a quarrel or fasaad. There is a strong feeling among people now that these cases should be dealt with at least under 304A for being guilty of culpable homicide not amounting to murder or to the fullest extent of the law.

At present these sections are applied only in cases when the people and the media make a pressure for it. Thus there is a need for clearer guidelines for such criminals who either grievously injure or kill

an innocent person on the road. The law should be unambiguous otherwise the offenders take the advantage of the ambiguous wordings of the law or its interpretations. We expect from the authorities to set some example of harsh punishment for the road ragers and the same should be brought in to the lime-light by the media. That may help to reduce this kind of nuisance on roads.

Chapter - 4

THE FIRST DENT ON MY CAR

I won't be wrong if I say that the memories related to the first dent in one's beloved car is like that of one's first love which is unforgettable. I remember vividly the instance when my brand new car got its first dent. I was passing through the congested road of a hardware market on that unlucky evening of May 21,1991. I was going on a call [to see a patient] and this was not the usual route that I followed. I was listening to music in my car, when I saw a tonga coming from the front. Little did I know that it was going to leave me with such painful memories! The peculiar thing about this tonga was that it was moving with a sideways swing just like a full-term pregnant creature. Probably, either the wheel was loosely fitted or the weight of the passengers was more than its capacity. Anyways, by anticipating the wide swing, I tried to keep my car well away from its swinging range. The moment our vehicles crossed each other, I heard a loud sound [kirrrrrr-----] and I could also feel the impact of the body of the tonga on my car. My heart sank and without getting out of the car I could easily imagine the havoc played by the grating sound on my darling car. In fact, I was sure this sound must have been produced by the contact of the metallic claw fitted in the axle of the wheel. In fact the dent was made in my heart. Believe me, I am not exaggerating. I could not wait any longer. With the first opportunity to park I got out of the car like a commando. Throughout this I was trying to figure out how deep, broad or lengthy this dent would be. At the same time I was wishing it to be only a small scratch. But against all my optimism it was a broad, metal deep dent with a distinct depression involving both the doors. For a few minutes I could not remove my eyes from the dent. I cursed the tongawalla in my mind and regretted why I had chosen this road instead of the longer and safer one. I called myself a fool, a miser and a thousand other things that day! With a heavy heart, I got into the car and could not make myself drive at more than 20 or 30 km/hour.

When I was a child and suffered many cuts and bruises on my body, I had never cared, but I don't know why this first dent in my car had given me so much tension! I wanted to get rid of that dent as soon

as possible as I didn't have the heart to see it repeatedly. I was upset and returned home after hurriedly finishing the work. I was in no mood to share this mishap with my family. In fact, I had planned to get rid of the dent on the very same day without letting them know about it. But it couldn't be done in such a short time. The agony of the dent was writ large on my face and everyone at home wanted to know as to what was wrong. I had no choice but to tell them the unappetising details. The entire family rushed out to 'see' the dent and was upset too. Everyone examined it carefully. Perhaps they thought I had told them half the truth. Like James Bond, each one was trying to solve a murder mystery! Then followed a volley of comments: 'I knew this was going to happen', 'Couldn't you be careful?' my wife screamed. 'Oh papa! don't you know how to drive?' was my daughter's comment. In vain, I tried to convince my family that it was not my fault but that of the tongawalla. I tried to narrate the whole incident, but I was stopped in the middle by my wife who said, "Don't make silly excuses, I know how carelessly you drive these days!" My position was like that of a defence personnel who has been court-martialled, the only difference was that my wife was sitting in the chair of the enquiry officer. Meanwhile my daughter came back and added to the list of the charges against me by saying, "Mumma! there is one more dent in the back side and one side-indicator-light has also been broken."! All of them literally ragged me and made me feel like a naughty school boy being reprimanded for his pranks. I had never imagined that at this stage of life when I have become the father of a child, I would land in such a situation. I myself felt very bad about it but my family was taking my trial without considering this fact.

On a number of previous occasions when I had got my pocket picked or lost my briefcase, I had never faced such situation as on this occasion. This reminded me of an incident during my childhood when I had broken a glass tumbler from one of my mother's best lemon sets. I was the youngest child. The moment the sound of the broken glass was heard, my eldest sister sharply commented, 'This must be Babbu [my pet name] in the kitchen'. I already had a guilty feeling because this was the second incident of its kind. My mother shouted, "Is there something wrong with your hands?" You have spoiled two of my lemon sets!" Since we belonged to a middle-class family, this was a typical and spontaneous middle-class reaction! Nowadays we are a little well off and if such incidents occur, we immediately ask the child whether he has a cut or injured himself and tell the servant to clean up. This is perhaps the difference in the attitude of a middle-class and high-class family. It is not that the middle-class people do not have feelings for

their children. Instead, their constant financial constraints always dominate their feelings. Anyways, I come to the dent story again.

Next morning I was not in a mood to do my favourite job i.e. to clean and wash my beloved car. I often faced ridicule from my wife and kids for this special attention I bestowed upon my car. That day I did not want to see the ugly reminder of my painful memories of the previous day. An idea was constantly tickling my mind right from the accident. What if I could get some matching car paint from the market and apply it with the help of my daughter's paint brush? At least this would lessen some of its ugly look. However, after I thought about the jeering I would get from everyone who saw it, I abandoned the idea. Those who have gone through such a thing would probably understand that once your car has been dented your eyes don't see the car but only the dent. So I took the car to a known garage to get rid of this dent. The garage mechanic examined the dent and said 'Doc Saab, why do you want to remove this small dent right now'. He advised me that it would be more cost effective to have the car dented and painted after a few more dents. It might have been very commonplace for him to see dents on cars but for me it was a 'big' distraction. Anyway, heeding his logic, I postponed the dent repair for a later date.

The same day I narrated the story to a close friend of mine. I told him that in spite of me being so deeply hurt by the dent, I had to face so much scolding especially by junior members of my family. He laughed at my inability to tackle such a trifle situation. After seeing the puzzled look on my face, he advised me not to narrate the truth word by word. Judging by the blank look on my face, he started telling me about one such incident that had happened to him. He began, "On one occasion when I banged my car into a tree and broke the headlights and dented the sides, I presented the story in an entirely different way to my family. I entered the house with a limp, and a long face. The immediate reaction from the family members was, "what happened to you?" 'God is great', I replied. I had a new life today. It was enough to create a panicky wave among members of my family. By now they all became very eager to know and came very close to me. 'Beta, tell us what had happened', asked seriously my mother who was almost hysterical. Then I described the time-tested story. I told 'today I had a narrow escape in an accident with the truck'. There was an overloaded truck whose driver was very careless. I had to turn my car suddenly and in spite turning the steering fully, I could not avoid the accident or rather these dents'. 'Don't worry about these dents or the damaged light, you are saved, that's enough', said every one in my family. My mother

kissed my forehead exclaiming that she would offer Prasad (offering) to Lord Ganesha. The very next moment my wife declared a Devi Jaagran on the next auspicious day. She probably felt she should not lag behind her mother-in-law in expressing thanks to God, rather she should get 'political mileage' by the incident. My father was cursing the 'imaginary' truck driver, saying that he must have been drunk, etc. Seeing the limp, my wife wanted to consult a doctor and get me some medicine. I replied, 'there is some pain in my leg and chest, but any way, I will manage it'. I assured her that I would be fine with just a hot water bottle and pain-killer pills along with a strong cup of tea. That day I got off scot free and got VIP treatment instead.

I just admired my friend's presence of mind for spinning such a story to save his skin.

Why do we react like this during such incidents? If we go by logic, then a dent is simply a minor financial loss. If you are the owner of a car you can certainly afford that much! Moreover, most of the vehicles have comprehensive insurance so there is no question of even a financial loss. So certainly money is not the reason. Many times we suffer losses of valuables and money and take it in our stride even if those things have not been insured. Actually, the attachment with a new vehicle is like that of a 'kid with his favourite toy'. When his or her toy is damaged it is very difficult to console the child even by saying that you will get him a new one. If at all you are able to convince him, he would say that he wants exactly the same toy and that too right now. Perhaps, most of us also get deeply attached to our vehicles. When your brand new or well-maintained vehicle has been dented, you may feel the same way.

Once the vehicle gets older, your reaction too is more controlled. Although the second dent hurts too, it does not provoke the same kind of reaction. In fact, after 3-4 dents, perhaps you don't even bother to come out of the car to examine the extent of damage. Unlike kids, we are mature adults, so we should try to control our reaction in such situations. But, if you have caused damage to someone else's car, do not hesitate to apologize. On the other hand, if someone else has damaged your car, don't expect anything more than a polite 'sorry'. Instead you should first make sure that there are no injuries to either party.

I would like to mention a small accident that we witnessed in Marseilles, a city along the French Riviera. We were there to attend a conference on pediatric surgery in 2002. The conference venue and the hotel were very close. One evening when we were walking from the

conference venue we heard a thud of a crash. On tracing this sound we found there was a head-on collision between two cars. Both the drivers were young boys and fortunately both did not suffer any injury. However, on the contrary both the cars were quite damaged and we noticed that coolant from one of the radiators was leaking. Seeing all this we were expecting a good freestyle vocal and physical fight there. Surprisingly, both the drivers after getting out of their cars, instead of moving towards each other, remained near their respective cars. Both of them took out their mobile phones and started talking to someone. We noticed that they did not even have an eye contact. We waited there for some time to see something interesting to happen. In India, talking of drivers on the mobile phone immediately after such accidents usually means to 'call their respective armies' for making a gadar (fight). However, here in this case they were probably informing either insurance people or the police. That day we witnessed a good example about how to remain cool in such unpleasant situations.

Now whenever I get a new car, I always wish that the first dent is made by some other member of the family, especially by my wife! A kind of soft and sweet revenge!

Chapter - 5

DRINKING AND DRIVING

Alcohol is responsible for almost one third of traffic related deaths and half of all homicides in the world. The life span of an alcoholic is shortened by an average of 15 years due to increased risk of road accidents, heart and liver diseases, cancer and suicides. In spite of all these ill effects, alcoholism has been rampant in almost all countries in the world for centuries. Drinking is justified on all occasions whether sad or happy, during family functions, fancy page 3 parties or business meetings. In the higher sections of society drinking is often considered "cool" and driving after that appears quite common. It is said that 'alcohol is the best lubricant for all sorts of social and business intercourse'. Although drinking and driving do not match and are responsible for a significant number of casualties on the road, in most of the countries the government is hesitant to have strict regulations against it.

[I] INCIDENCE

In India drunken driving is responsible for about 15% deaths due to road traffic accidents. Considering the present mortality of 1.14 Lakhs/year in road accidents, 17000 people are being killed every year in drunken driving. This is a very conservative estimate as some other random studies have suggested that among all road accidents in about 30-50% cases the drivers were under the influence of alcohol [Bangalore-44%, Delhi-33%, Kerala-50%]. However, all these data are in relation to drivers only. There is no Indian data to show that besides drivers, how many deaths occur among other road users or fellow passengers. Data available at the international level show that about the equal number of casualties occur among people other than the drunken drivers themselves. Here it is important to note that this above mentioned fact is from developed countries where the majority of people [more than 90%] are inside the vehicle that is considered to be much safer on the road. In the Indian context where the driving conditions are just the opposite, this mortality rate to non-drivers could be much higher. Nobody knows how many poor pedestrians or poor laborers sleeping on the pavements are run over by drunken drivers like insects or stray animals. It is also not uncommon in India that a bus carrying fifty odd people falls into a river or a ravine causing death of most passengers just due to an intoxicated driver.

[III] FACTORS AFFECTING FATALITY

(1) *Age*: It is more in younger age group. For similar blood levels of alcohol, the risk of accidents among teenagers is 15-20 times more as compared to drivers who are above 30 years. The reasons are: 1. they have less tolerance to alcohol and are relatively inexperienced consumers of alcohol. 2. They are beginners having less driving experience. 3. Many times young people are under peer pressure to drink and brag about their alcohol tolerance. Sometimes their friends falsely exaggerate their drinking habits and tolerance of alcohol making them to try it on to themselves. 4. There are more chances of taking drugs along with alcohol in a younger age group. The most worrying fact today is that during last 20 years the average age at which people start drinking has come down from 28 years to 19.

(2) *Sex*: Men can 'hold their drink' better than women. Women have 25% less tolerance as compared to males. For the same body weight, women have more proportion of fatty tissue than men, so for the same amount of liquor consumed they reach a higher blood alcohol level.

(3) *Drugs Along With Alcohol*: Drugs enhance the effect of alcohol. Drugs other than alcohol are responsible for about 18% of the death of drivers. Many accidents blamed on alcohol are actually caused by illicit drugs. The real problem is that there is no cost effective screening test for these drugs. Secondly, unlike alcohol, there is no direct relationship of blood levels of drugs with that of the risk.

(4) *More among two wheelers*: After alcohol intake, the control over driving goes early in two wheeler riders as compared to four wheeler drivers.

(5) *More at nights especially Weekends*

[IIII] EFFECT OF ALCOHOL ON DRIVING

(1) After drinking, the interpretation and judgment power of the brain is affected.

(2) Usually the brain-eye co-ordination ensures an immediate and appropriate response. This reaction time during a sudden or unusual situation on the road is delayed by 20-30%. While driving if some emergency comes, you have to take 4 to 5 decisions or actions simultaneously. While after alcohol one is able to deal only one thing at a time.

(3) The risk taking tendency increases under the influence of alcohol.

(4) It causes blurred vision or reduces vision up to 25%.

[IV] THE DOSE VS RISK RELATION

Any level in the blood above zero is associated with risk. The risk of being involved in a crash starts to increase significantly at a BAC [blood alcohol concentration] level of 0.04 g/dl. An upper limit of 0.05 g/dl for the general population and 0.02 g/dl for young drivers and two wheeler drivers is generally considered to be the best practice at this time. Each 0.02 g/dl increase in BAC level approximately doubles the risk of a fatal crash. A variety of BAC limits across the world ranging from 0.02 to 0.1 g/dl have been set. A two-fold increase above the legal limit in the blood alcohol increases the chances of accidents by 30 times. Drivers with blood alcohol contents of 0.2 g/dl carry hundred times greater risk than those with only 0.02 g/dl. In simple words, just one drink of alcohol (30ml at 42.8% by volume) is enough to impair your driving performance. The Legal BAC limit for driving in India is 0.03g/dl.

[V] FORMULA FOR 'HOW MUCH ONE CAN DRINK SAFELY'

There is one practical aspect of alcohol intake that needs to be considered by the authorities. Everywhere the limits of alcohol consumption are mentioned in the form of BAC levels. For a lay man or a drinker it does not explain clearly about 'how much amount of a particular drink with a particular alcohol concentration will roughly correspond to legal BAC level. So the law-abiding people who want to adhere to this safe limit, should have a rough idea. This should be printed on liquor bottles as statutory warnings. This is a practical problem that calls for the attention of the authorities. Here a simple formula [Widmark formula] is given that may help the individual to calculate his/her BAC level after consuming the alcohol.

$$\text{BAC level} = \frac{\text{Amount of alcohol consumed in grams}}{\text{Weight of the person} \times 10 \times r}$$

r = Widmark factor that is 0.7 for the man and 0.6 for the woman.

Example: Suppose an adult male having a weight of 70 kg consumes 25 ml of whisky [having 42% alcohol weight by volume i.e. 42 grams in 100 ml of whisky], his BAC level would be:

$$\begin{aligned} \text{BAC} &= \frac{10.5 \text{ [alcohol in gm in 25 ml of 42\% of whisky]}}{70 \times 10 \times 0.7} \\ &= 0.0214 \text{ gm/dl} \end{aligned}$$

Thus for a 70 kg male with a normal metabolism a BAC of 0.03 gm/dl will be achieved by 35 ml of whisky having 42% of alcohol or 300 ml of beer having 5% alcohol.

This formula gives just an approximate idea of the BAC. Besides weight and sex, there are many factors that affect the BAC level and they should also be kept in mind, e.g. dilution, speed of intake, consumption on empty stomach, status of hydration of body, any existing gut problem, BMR of the individual, age, etc.

[VI] HOW TO COMBAT DRUNKEN DRIVING

Like other social problems education and awareness alone cannot solve the problem of drunken driving, so we require strict laws and their proper enforcement to get desired results.

The role of alcohol in traffic safety has generated more controversies than any other topic concerning road accidents. There are so many debatable issues regarding drunken driving not only in India but in the whole world. Discussions on this topic go regularly in various conferences, meetings and workshops in our country and in spite of all the brain-storming sessions of these 'successful meetings', no actual results are obtained. Theoretical measures appear very simple, but mentioning them alone here is not the purpose this book. So a genuine, honest, debate without any business motive and for the real benefit of society will help us get better answer for this problem. I believe in all kinds of social ills if we really want any solutions it is very important to resolve the controversies surrounding them before coming to the actual measures.

[A] The Controversies

Controversy 1: Whether to Allow Drinking Before Driving?:

We know that any level above zero is associated with a higher risk for an accident. Even the so-called safe limit of 0.04 g/dl is associated with 1.8 times higher risk than zero level. In other words, if we stick to zero BAC level, we could save 17000 casualties on roads and many more innocent commuters on roads [and the fate of their families]. Is this a small reward? Certainly a figure of 17000 is much more as compared to casualties due to terrorist activities [733 in 2007]. There are many countries in the world that take this fact seriously and do not allow drinking before driving or follow a zero BAC level limit. Unfortunately, India is not one of them.

Controversy 2: If Drinking is Allowed Then What Should be the Limit?: Quite surprisingly there is no universal agreement all over the world on the legal or the maximum BAC level that can be allowed for driving. It ranges from 0.02 to 0.1 g/dl in various countries. Even in a single country [like USA] there is a variation from 0.08 to 0.1 gm/dl in different States. In spite of many recommendations to keep the

limit at 0.05 these countries are unable to enforce it. What does it show? Don't they all know that as compared to zero BAC the risk of a fatal crash with 0.05, 0.08 and 0.1 g/dl is 1.8, four and six times respectively? Don't they know that control over dose of alcohol directly means control on accidents? Does it suggest that alcohol dependence or addiction is more important than lives on roads?

Secondly, it is a scientifically proven fact that the therapeutic dosage of a drug is same on any human body all over the world irrespective of race, religion or country. Similarly, the side-effects or lethal effects of any drug appear at same drug level in the blood in all human beings. Have you heard that the dose of any antibiotic or antipyretic is different in different countries? If the toxic levels for various drugs in all human beings are fixed for all countries, then why are there double standards in the case of alcohol? Perhaps, some developed countries feel that like the open arms licence policy, there is no need for a rigid control over BAC, as their citizens especially teenagers are 'mature enough' to use these liberties 'judiciously and safely'!

Perhaps, it also depends on the attitude of the policy-makers in all countries who play the main role in deciding the 'safe limit'. Fortunately, in India the BAC limit is lower than in most countries though the enforcement remains questionable.

Controversy 3: Revenue and Alcohol: Alcohol sales are a major source of revenue for most State governments and they try their best to boost sales every year. The government says that there is no vested interest behind this. It even claims that the revenue generated from alcohol industry is less than the revenue loss in treating the alcohol related health problems. By saying so probably the government tries to disprove the fact that revenue generation or profit making is at least not its motive behind the flourishing alcohol industries. However, it is a fact that revenue from alcohol [approx. 25000 crore] directly goes to the State government treasures while most expenses towards the treatment of the alcohol related problems comes directly from the pockets of the sufferers. Any one in India who is aware of the status of the government health facilities can easily understand this. Is it enough for the government to open some 100-125 de-addiction centers or give a grant of few lakhs rupees to these centers to compensate for the losses caused by drinking?

Controversy 4: Is there any Need for Prohibition Department: In India, there is a separate dept. to curb the use of alcohol. This is like adding spirit to a fire and alternately trying to put water to douse it. We clearly see that excise department is dominant over the prohibition

department. The prohibition department is probably just a formality or to appease the soul of a saint like Mahatma Gandhi.

This prohibition department spends a fat amount on publicity through advertisements and hoardings to educate people, but it has been proved that it has no effect on the public. Kerala has the maximum literacy rate in India and yet Keralites consume the maximum amount of liquor in India [just double the average Indian per capita consumption of 4litres/yr] and have the highest accident rate due to alcohol. We can make a better use of this advertisement money if we invest the same for purchasing breath analyzers or other necessary equipment. So far as public attention is concerned, I believe that punishing the offenders through aggressive campaigns will make better news or headlines than expensive advertisements.

Controversy 5: Who are the policy-makers by the way? Do the policy-makers include intellectual people from all sections of society or just a few officials and influential politicians? [1] Since males are involved in more than 85% cases of drunken driving, it is women who suffer most after the death of the bread-winner of the family. Though it may not be relevant here, I would like to mention that alcoholism is also largely responsible for the majority of cases of domestic violence in all classes of society. Among the lower income groups, the wives of drunkards not only face physical abuse but also face great financial constraint in running the house hold. Do we have enough female representatives while deciding such policy matters? If not, it would again support the view that Indian society or Indian politics is a male dominated one. [2] Another fact is, in addition to drivers, a number of innocent people dying on road are from the weaker sections. Do we have adequate representation from them? [3] As a doctor I can say, it is extremely difficult to treat alcohol-related diseases. Terminal liver disease is incurable and unlike renal transplant, liver transplant is a dream for the majority in India. Accidents after alcohol have a high fatality and permanent disability rate. There is also a very high rate of neurotrauma [60-70%] leaving thousands permanently crippled mentally. Is there any proper representation from the doctors among the policy makers?

As regards the government officials or ministers, their views keep on changing. For example, an excise official will have different views as compared to the one from the prohibition department. If the same officer changes the dept, his views may change drastically. This is probably due the fact that the commitment to his post is more important than the society. Similarly, the views of politicians depend on the fact whether they are in power or in the opposition.

Controversy 6: Revenue is a Must for Development: Often the government accepts that the revenue is extremely necessary for the State, as it is being used for development of the State itself. Gujarat is among the four States which follow prohibition. Despite this Gujarat is one of the few States that are making fast developments in all fields. What does it show? Can't the State find some alternative means of revenues? Are taxes the only means of earnings for the State? Should we not place more stress on productivity or industrialization for improving our economy?

[B] Actions against Drunken Drivers

The Law in India: Under the present MV Act an amount up to 0.03 gm of alcohol per 100 ml of blood has been permitted for drivers. Under section 185 of Motor Vehicle Act, 1988, the penalty for the first offence is Rs 2000 and/or imprisonment up to six months. For second or subsequent offence(if committed within 3 years of the commission of previous similar offence), a fine up to Rs 3000 and/or imprisonment for a term up to 2 years has been recommended. Though the punishment seems to be adequate, its proper and effective enforcement is lacking in India. There was a time in India when drinking while driving was not allowed[under MV Act 1939]. But after its amendment in 1994, an amount up to 0.03 gm per 100 ml of blood has been permitted to drivers.

Graduated Penalties: This is followed in many countries with good results. Recently in India also the Parliamentary Committee has suggested a graduated penalty system in new motor vehicle amendment act[2007]. According to this, graded or multi-tiered penalties should be imposed that are based on BAC level. A penalty of Rs 2000 has been suggested if it is above 0.03 g/dl, Rs 4000 up to 0.15 g/dl and Rs 5000 if it is above 0.15 g/dl. Let us see when this recommendation takes the shape of a law.

Suspension of Driving Licence: This is a very effective measure to reduce drunken driving. Alternatively some adverse remarks can be made on the licences. In cases where the alcohol level in the blood is very high, police should cancel the licence for a longer duration or send them to a rehabilitation centre until he can supply medical evidence that he is fit for driving or does not suffer from a "serious drinking problem".

Vehicle Impoundment: When the driver is heavily drunk then in addition to above penalty it is better to impound the vehicle as well.

Surveys have shown that the perception of swift and certain punishment is more important than its type or severity.



Restriction for Certain Group: [1] The minimum age for drinking should be 21 years. In India depending on States it varies from 18 to 25 years. Personally, I think making a law regarding the minimum age at National or State level would not help much. There are many practical problems to implement it effectively e.g. regarding identifications proof or active cooperation by the seller or bar owners, etc. [2] The BAC limit may be kept a little low for the two wheelers or professional drivers.

Imprisonment: Though monetary penalty is effective in the majority of cases, there remains a small number who are refractory to above measures. These people live in their own world and are not bothered about the rest of the world. Imprisonment is justified in cases of repeat offences or if offender instead of regretting behaves aggressively with the authorities or when BAC is much higher than the permitted levels [in some countries, drivers are sent to prison when BAC is higher than 2.5 times over the permissible limit, even if it is a first offence]. For those who consider imprisonment as too harsh a punishment for this traffic offence, I advance the following arguments:

(1) These people are potential killers on roads. While hearing a bail plea in such a case, one of the Delhi High Court Judges had recently commented that a drunken driver is like a human bomb. If you drink heavily and are found dead the next morning, nobody except your family is affected. However, if your drunken driving kills some innocent people on the road, the law enforcing authorities would certainly intervene as it is their responsibility to safeguard the other commuters on roads. It is quite possible that today's punishment for a day or two may correct your habits and prevent you from a fatal accident in future. Similarly, a small punishment may prevent you from a very heavy punishment and lengthy court cases later on in case you injure or kill someone on the road.

(2) If you consider the point of view of the family members and well-wishers of these drunken drivers, they would be very happy when such people are forced to curtail their habits even if it requires a heavier penalty like imprisonment for a few days. We must know that being involved in a road accident is only one aspect of the drinking habit; there are many other problems in an individual's personal life caused by alcohol, e.g. tension in family, bad reputation in society, bad health or problems in professional life, etc. etc. Thus, it may prove to be a step towards overall happiness in his life. The family would be thankful that authorities are trying to do what they have failed to do.

[C] Role of Breath Analyzer: It is a very effective and economic tool used to detect whether the driver is drunk or not. The chances of nabbing the culprits are more during random checks. If the checks are done regularly for long periods, then the results are more rewarding. However, traffic officials in most of the smaller Indian cities are not equipped with these analyzers. This equipment is very effective and also generates good funds for the authorities. I am sure within few days of purchase it can recover its cost even if used on Saturday and Sunday evenings only. Its importance cannot be over emphasized in cases where graduated penalties have to be imposed on the spot and for documentation in the court.

[D] Alcohol Interlock: This equipment prevents drivers from starting their car if their BAC level is above the legal limit. The driver has to blow into the equipment before starting the car. Basically, it is a breathalyzer that is fitted in the vehicle and connected to the ignition through an electronic device. It is especially helpful for truck or other heavy vehicle drivers or those of chronic defaulters. However, in India a drunken person can easily ask another one who is not drunk to blow on his behalf by tipping him.

[E] Role of Media: It may have a deterrent effect on the public if the media highlights the stiff penalties awarded to drunken drivers.

[F] Role of Price Hike: Studies or surveys have shown that increasing the cost of the alcohol by increasing the tax on it would have absolutely no impact on reducing drunken driving or the consumption of alcohol in general in our society. Whenever there is price hike in the alcohol, a man's budget for drinking remains unchanged and it is the woman of the house who has to make a proportionate compromise in her household budget. As far as drinking of youngsters is concerned, they are not worried or deterred as budget is their parent's headache.

[VII] HIT AND RUN CASES

Definition: If a driver who is involved in an accident causes injury or death of a person or damage to the property and leaves the accident scene without informing the police or providing assistance to the injured person, it is considered a hit-and-run case. Though such cases are very common in India only a few that occur in the capital or metros get attention. Everyday many innocents who are mostly pedestrians or poor people sleeping on pavements die in such cases. In most of these cases drivers have been found heavily drunken, belonging to a very rich and powerful class who can literally purchase the law in India. These occur mostly late at night when very few people are on the road so the driver is able to flee the scene easily and the victim may not get timely help. In the

famous BMW case, a young and heavily drunken boy caused the gruesome death of six police petrol personnel whose bodies were badly crushed and the severed limbs were found to be spread over an area of 100 yards, creating a scene not much different from a slaughterhouse[Jan. 1999]. In another case, in Mumbai a drunken driver ran over and killed seven and severely injured nine workers sleeping on the pavement [Nov. 2006]. Recently [May, 2009] in Delhi a young drunken driver ran over six persons sleeping on the pavement killing three out of them.

Punishment: As regards punishment, most offenders face only a case of negligent driving if the victim dies. This is a bailable offence where he can get bail at the police station level without any need for the accused to be produced in a court. You just have to keep Rs 950 in your pocket for getting bail. In India, once you are out on bail, the case is almost half decided as you can prolong the proceedings for decades or even life long. On the other side is the family of the victim which has lost its only source of income. The family can't think beyond making two ends meet, let alone fighting a lengthy and expensive court case. Even if it persists, the time taken, hostility of the witnesses, and the so-called legal help [legal or otherwise] by some of the top lawyers of the country for the offender virtually eliminate all chances of justice. Many times it has been seen that the lower courts or the police were so lenient in these cases that it needs an outcry from the media, public or some social organization to book the offenders under the correct sections of IPC. In most cases, it is seen that drivers get bail and go home without caring for the world, while the victim's kin are either desperately running to the police station or authorities for postmortem [if death occurs] or hospital in case of injuries, thus undergoing great mental trauma, torture and harassment.

There is a strong feeling in the public that these cases should be dealt more strictly and offenders should be booked under 304A for being guilty of 'culpable homicide not amounting to murder' instead of rash and negligent driving. If the driver or owner of the vehicle neither ensures medical help nor reports to the police within a few hours, there should be provision to automatically convert cases of rash and negligent driving into 304A IPC. Under this section there is a provision for imprisonment extending up to two years or fine or both. However, it is frequently seen that even the punishment or imprisonment under this section is often much less than expected. Considering this, the Law Commission [under Justice A R Lakshmanan] has recently suggested for an amendment in MV Act to consider such deaths as heinous offences with a maximum punishment up to 10 years. Stringent penalties have also been suggested

by the Parliamentary Committee's new motor vehicle amendment act [2007]. If this becomes law, this will serve as a deterrent.

One may argue in favour of a fleeing accused that in India there is a mob culture where the public starts beating the driver without going into the reason, and is often in a mood to give lesson right on the spot. However, late at night there are hardly any people on the road and the victim is solely at the mercy of the offender. It seems that the offenders deliberately flee the scene of the accident. Remember if you help such victims, inform and cooperate with the police, all these things are considered when the court decides the penalty.

[VIII] SOCIAL MEASURES AGAINST DRUNKEN DRIVING

[A] Responsibility of a Party Drinker

Do not drive after drinking and if you must, stay completely sober. Keep the following things in mind in order to protect yourself, those you love and also those who belong to the society.

(1) Know your limit of tolerance.

(2) The intoxicating effect of an alcoholic drink mainly depends on the alcoholic content and not whether it is brandy, whisky, beer or wine, etc. If the alcohol concentration is the same, they all will give same reading to a breath analyzer. Similarly, sticking to one brand only does not mean that you are safer or can take more. The absorption of drinks having more than 40% alcoholic content is much faster, so drinks should be properly diluted.

(3) Absorption is much faster on an empty stomach, so you should drink slowly and eat enough food that is rich in proteins or fat to minimize the effect.

(4) Only accept a drink that you can tolerate and the one you're familiar with. Do not try new drinks where the concentration is not displayed on the bottle.

(5) To slow down the effect you can alternate the drink with a non-alcoholic drink.

(6) If someone has forced a drink on you and you do not feel compelled to finish it, try to get rid of it unobtrusively.

(7) Don't compete with others or make it a prestige point if your capacity to drink is low.

(8) To know how alcohol affects you, move around and judge your motor activity or look for signs like slurring of speech, etc.

(9) Ask one person from your group to remain sober, so that he may drive everyone home. This trend is getting popular in many developed countries. This person who agrees to abstain himself from alcohol and

be responsible for driving others home is called a designated driver. The others are free to drink. In USA, it is claimed that more than 50,000 lives are saved by designated drivers.

(10) In India, people can never resist a free drink and gulp it down as if there will be no tomorrow. Dear countrymen, drinks will always be there for all tomorrows, but you may or may not be there [kal tum ho na ho].

(11) Keep a driver if you don't trust yourself.

(12) Please note that a diuresis won't help in faster excretion of alcohol. The reason is that more than 90% of consumed alcohol is detoxified in the liver and only a little amount is excreted through kidneys, lungs and sweat glands. In fact, nothing gets the alcohol out of the body EXCEPT TIME. Approximately, it takes one hour to get one peg cleared from your body. Thus, two pegs would need two hours. It is that simple. So, don't rely on water, shower, coffee, any medicine, etc in this regard.

(13) Last but not the least 'listen to your wife' when she says you've had one too many [as she is supposed to be the most vigilant person in that party to keep an eye up on you]. She should also be a good driver, so that she can drive when required.

[B] Responsibility of a Host

If you serve alcohol in your party, you have a great responsibility. Certainly you would not like to hear the guest got hurt or died in a car crash after your party. It is so not only for the safety of the guests but also to keep the atmosphere sober, congenial, comfortable and amicable and not having drunken brawls after the party. You should keep the following things in mind:

(1) Select drinks having low alcohol content.

(2) It is very important that the person in charge of the drinks be a responsible one. He shouldn't force a drink on anyone who is unwilling and also should keep track of how much one has consumed.

(3) Keep a good time interval while serving drinks. Supply nonalcoholic drinks in between. Stop the drinks well before the party ends [at least one hour before], so people are less likely to binge.

(4) Snacks should be served frequently. Don't delay serving the food for long. If you start dinner early, this encourages the chronic drinkers to wind up. In India, it is customary that all drinks should be over before starting dinner. While in some other countries people take alcohol simultaneously with dinner that not only delays the absorption but also prolongs the total duration of alcohol intake.

(5) If you think someone is over-drunk, either delay his departure

by serving coffee, etc, or ask someone to drop him or arrange a taxi or ask him to stay at your place.

[C] Dealing with Drunken Drivers on Road

If you are on the road, following tips will help you to make out the people who are drunk and driving.

- Taking wide turns, weaving, swerving, or straddling the center line. Almost striking an object or vehicle.
- Driving at a very slow speed or stopping without reason.
- Braking erratically. Responding slowly to traffic signals, driving with windows rolled down in cold weather.

If you are in front of the drunken driver, allow him or her to overtake you. If the driver is in front of you, stay at a safe distance behind him. And if the driver is coming towards you, slow down, move towards the left or edge of the road and stop. Report about the drunken drivers to the police along with the description and location of the vehicle. Be careful on Saturday and Sunday late night!

[D] For Bars & Restaurants

At present in India, the perceived risk for being caught is so low that practically no one remembers the face of the policeman holding the analyzer machine while drinking in bars. If at all, some thing that inhibits him is the thought of his wife's scolding on reaching home late at night. A few interesting tips may be kept in mind:

(1) A huge statue of a policeman holding a breath analyzer should welcome people at bar entrances in Air India style [remember the maharaja?].

(2) Like many industries or factories, where the excise people sit right at the gate, one traffic personnel sitting at the gate of some famous pub or discotheques [like a cat waiting for mouse near the hole] will make the police department wealthy and the public healthy.

(3) Bar boys should dress up like policemen.

(4) Every five minutes a hooter or police siren to be sounded.

(5) Install coin operated breath analyzers, so that customers can check their BAC level.

Chapter - 6

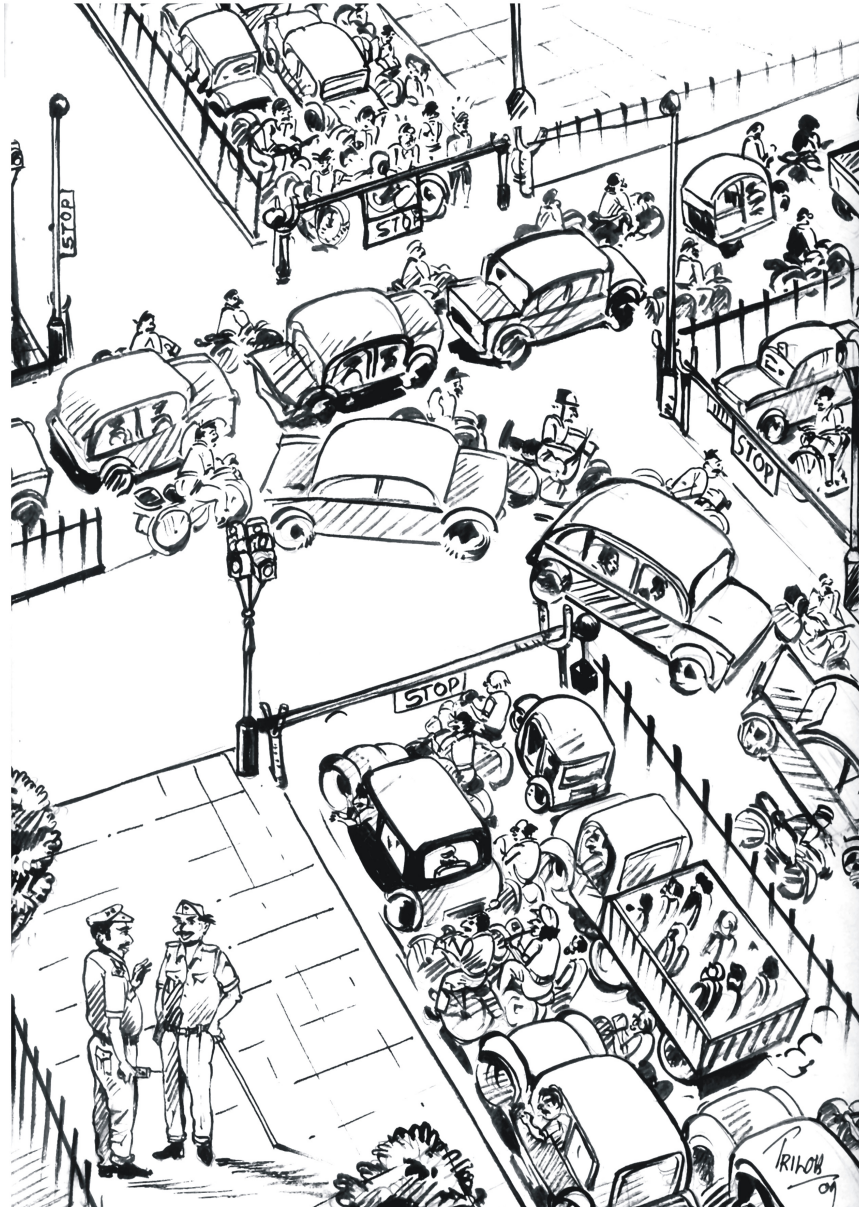
PUBLIC ATTITUDE TOWARDS TRAFFIC RULES IN THE CITY

In general the road traffic constitutes four main components or pillars. These are the public or commuters on the road, vehicles on the road, the road infrastructure and lastly the authorities that regulate the traffic. We have already discussed in details road accidents and arrogance on roads. In this chapter, I will discuss the typical driving conditions in an Indian city with special reference to the public attitude towards traffic rules.

[I] Scene at a Crossing: Before I take you to one of the crossings in any city of India, I would like to give you a simple example. Just imagine a classroom where a strict teacher is taking a class. You would find a pin drop silence and all children would be taking a keen interest or pretending to do so. Now a peon comes to call the teacher and as soon as his/her back is turned, with a loud hurray, the children turn rowdy. In short, the scene in the class changes completely. Once they realize the teacher is coming back, within seconds they resume their seats and silence prevails as if nothing had happened.

Similar is the scene at most traffic intersections in our country. As long as the traffic policeman is present, all drivers follow rules. But if there is no traffic policeman then there is total chaos and nobody cares about the colour of the signal, they only see green. Traffic rules are considered an unnecessary burden and people do not think that traffic signals are meant for their safety. This attitude invariably causes either a jam or some accident. People are more interested in knowing whether the traffic policeman is present or not rather than the colour of the signal.

So, is there any difference in the behaviour of the school children and the public at crossings? Seemingly, not much. BUT there are big differences between the two scenes. In the case of schoolchildren, they are not mature enough to know what is good or bad for them. While on crossings the responsible persons are invariably educated and mature citizens from a civilized society. Secondly, the act committed by children is simply a question of bad discipline only and not really associated with the risk to their lives, whereas at crossings, the careless act could prove to be fatal for not only oneself but also to some other innocent commuters.



Excellent idea Sir! These barriers have solved the problem of jumping the signals!

On the other hand, there are some people who believe in following traffic rules and stop at red signals even if there is no traffic policeman. But very often they find themselves all alone while other vehicles are zooming past in every direction. I must admit that many a time I have felt quite foolish waiting for the signal to turn green at a deserted crossing and my wife and children telling me not to stop. It also happens that if you are patiently waiting for the green signal at an unmanned crossing, the driver behind you will constantly press his horn as if saying you are a fool to stop if there is no traffic policeman. If you still do not budge he will reverse his vehicle a little and zoom past giving you dirty looks. In this situation it is hard to pass one full minute or to wait your turn and sometimes you are also tempted to jump the red signal. This happens especially at night when the traffic policeman is off duty. There is a question that in addition to traffic signals, do we need interlocking barriers on the road, like those at railway crossings? Why not, if we don't behave?

[II] Driving in Between Crossings: The moment, there is a green signal, we feel it is our duty to remind the vehicle driver in front to move by constantly pressing the horn. Thus the person in front is under great stress as people behind do not tolerate delay for even a fraction of a second. You can imagine what would happen if his vehicle fails to start?

Once there is a green light, the drivers that were impatiently waiting, move as if they have been flagged off for a cross country race. They start a free style driving. Now there would be no traffic rule or need for any traffic sense till the next red light. They try their best to compensate for their very precious time that was 'wasted' at red light. There is no rule for speed limit, overtake, lane cutting, etc. Suddenly some one may cut across the road or make a U turn in front of other vehicles without giving any signal. Now once they approach the next crossing, they all become model drivers.

[III] Our Attitude towards Other Commuters: All citizens have equal rights for use of the roads whether they are pedestrians, rickshaw pullers or people in luxury cars. However, usually those who have a bigger or costlier vehicle feel that their right on the road is greater. Most of the motorized four or two wheeler owners think the roads are basically meant only for them and they should get priority while passing through. Especially some SUV owners [not all] have been found to be more impatient and consider pedestrians or two wheelers as some unwanted creatures on the road who are causing unnecessary hindrance and ought to be done away with. They treat their vehicle like a king's procession ['Raja ki Savari'] and expect that people should give way without any horn. Some times they press the horn not as a request but just as an announcement

and push their vehicle forward [whether or not the situation permits], assuming that people have to make way for the king of the road coming in a large luxury vehicle.

By giving repeated horns we literally force pedestrians or cyclists to drag their feet back and not to dare cross the road till our vehicle has passed. Time may come when a mother will tell the kid look beta, 'this is called a car and it is in no way less dangerous than a train, you have to cross the road only when it goes away from you'. The drivers in bigger vehicles can do this forcefully only due to the reason that the poor pedestrians or the two wheeler owners are at the receiving end as far as injuries after collision are concerned. It is a clear case of 'might is right'. By doing so, they probably remind us about the ancient civilization or 'jungleraaj' wherein those who are powerful and strong should have an upperhand.

Often there is too much criticism among commuters on roads. The two wheelers and car owners criticize each other while the pedestrians or cyclists criticize motor vehicle owners. There is a lack of regard even among the drivers of the same group. For example, one car driver often finds another car driver to have less traffic sense than him. If two people driving the same kind of vehicles cannot understand or respect each other, then how are they expected to understand the needs of other commuters like two wheelers, and pedestrians.

[IV] Parking Sense: Perhaps we all lack parking sense. Those who may have had it initially change seeing others. People park their vehicles haphazardly without thinking about the inconvenience caused to others. After parking their vehicles in odd positions or blocking previously parked vehicles, they suddenly disappear. Very soon there is either a traffic jam or the affected person is seen desperately looking for and cursing the responsible driver. Many a time the person who has caused the situation might be watching all the 'tamasha' from a nearby ice-cream parlour or chaat-shop but just feigns ignorance. The driver of the offending vehicle may be sleeping inside but turns a deaf ear when asked to shift the vehicle a little bit. In such situations, sometimes even a person of the coolest temperament may feel like banging into and removing the obstructing vehicle. In some colonies it is frequently observed that people don't spare even the gates of private houses. In Delhi, I have seen boards in front of several houses saying 'don't park your vehicle outside otherwise the tyre will be deflated.' This shows how big the menace of illegal parking is in our country.

[V] Window Shopping: A different type of Window Shopping i.e. shopping through the window of a car is very popular on Indian roads.

It is our tendency to take the vehicle as close to the shop or vendor as possible. We do not want to move on foot even a little or rather do not want to come out of the car if possible. The car owner will stop in front of the shop occupying half of the road and the memsaab or the gentleman will pull down the window and the 'window shopping' starts. They give their order to the shopkeeper and merrily enjoy music in the middle of the road and maybe some snacks too while their goods are being packed. Who cares for anyone whose way they may be blocking? The shopkeeper of course will not open his mouth due to the fear of losing his clients.

[VI] Overtaking in City: In our country everyone seems to be in a great hurry just like drivers of fire brigade or ambulance. Regardless of whether space and conditions permit or not, they constantly ask for a pass by blowing horns. They do not tolerate any delay and overtake in a dicey or strange fashion from any side. Quite frequently when you are preparing to give a pass to someone on your right, suddenly one more vehicle zooms past from your left side leaving you shivering. They say everything is fair in love and war and now in traffic, too. Perhaps newer technologies will invent cars with wings so that drivers addicted to speeding and overtaking can lessen their frustration in situations where they do not get a pass. Sometimes in India if the vehicle behind you does not ask for a pass, then you become suspicious and instead of thinking that he may be a patient driver, you think otherwise, that it may be following you or may be attempting to kidnap you or something like that. You purposely slow down your vehicle to allow him to overtake to remove your suspicions.

Now consider a situation when you need to overtake a vehicle ahead of you. A like-minded driver, if the situation permits would never come in your way. At any rate, usually people turn it into an ego problem, and feel insulted if somebody overtakes them as if they have been labelled as poor or lazy drivers. Sometimes if a smaller vehicle, e.g. Maruti 800 wants to get ahead of an SUV, the driver of the larger vehicle may feel extremely slighted [how dare you!] and try to run faster unnecessarily just to prove that he and his vehicle are superior. If you are in a party, having a gathering of cultured people, an expression, 'excuse me' is all that is needed to let you pass through, and that, too, with a smile! Needless to say these very people when they're on the road leave all their culture behind at home and hence the dismal situation of traffic on our roads. Disorder at home creates disorders everywhere.

[VII] Traffic Sense and Educational Status: Though we assume that an educated person would be more careful about traffic hazards,

the fact is that there is no such correlation. The fact that a person having a bigger or costlier vehicle only shows that he has more money and that's it. This does not necessarily mean that he would be more educated or cultured as far as understanding of traffic rules [or civic sense] is concerned. A person sitting behind the steering of a big luxury car may be a big duffer, having loads of money and zero traffic sense and, on the other hand, a person on a bicycle may be a learned one, having very good traffic manners. Policemen usually use their stick on the poor and uneducated rickshaw pullers and people in big cars who break traffic rules are spared.

[VIII] Kissing Driving: Some drivers literally jostle with other cars making every effort to pass through small spaces. Perhaps they are very much influenced by the auto-drivers of India and drive their cars like autorickshaws. Examination of the body of the car is diagnostic where you may find lots of dents and scratches all over it. Kissing driving is possible with four wheelers only and for two wheelers it might be risky. The condition of your car and the way you drive reflects a lot about your personality.

[IX] Rule: The Loudest Wins the Race: Most of the drivers are addicted to horns and believe that a constant honking of horns on the roads is essential and effective. They think that making a louder sound would help making way easier. Sometimes people blow horn in spite of knowing the fact that the vehicle ahead has no choice, e.g. on red lights or traffic jam. They just don't realize how stressful or irritating it can be for others. They do not care about prohibited zones like hospitals, schools, etc. Many times they blow horn without any obvious reason; probably it is for some statue or hoarding or for a parrot sitting on a tree. I feel blowing horn is used sometime to relieve one's own frustrations or it gives pleasure as if they get in twisting the ear of an animal [that probably has come from ancient time when people used to travel on the back of animals]. Some people install horns with piercing or abnormal sounds, with the intention of scaring those on foot. Sometimes they blow horn continuously as if it belongs to fire brigade or as that of a non-stop train passing through a station platform.

[X] Rule: Drive away from 'door zone': Drive at least 4 feet away from the cars to avoid any accident. The drivers or the occupants of any car or jeep may suddenly open the door and come out from the vehicles, especially from the right side without giving any signals to the follower making full chances for accidents. I remember at least 3-4 occasions where drivers as well as co-passengers opened the right side of the door and a two wheeler or a car that was coming from behind had collided.

[XI] Rule: Owners of Bigger Vehicles are Always at Fault:

Although either or both parties might be responsible for a traffic dispute, in India it is a norm that the bigger vehicle owners are always held responsible. Since bigger vehicles are relatively safer, persons driving smaller vehicles or pedestrians are exposed to greater risks for injuries and damage to their vehicles. No doubt, the person who is injured more seriously should get priority in sympathy, attention and care irrespective of type of vehicles. The problem arises if the owner of the bigger vehicle wants to stay there and help the victim; he faces the ire of the mob. If he flees the scene, his may be labelled as a hit-and-run case. If this phobia or frenzy can be reduced, there will be greater chances of accident victims being helped. Another advantage of vehicle owner present at the accident site is to pass on the benefit of the third party insurance to the victims.

[XII] PUNISHMENT FOR ERRANT DRIVERS

[A] Punishment is Right or Wrong?

The question is whether punishing such traffic violators is right. If right, then what punishment do they really deserve for traffic offences? The majority of Indian citizens believe that punishments are an absolute necessity for maintaining traffic rules. After going through the following points I am sure the army of the brigadier that is against punishment would be reduced to that of a corporal.

(1) *Education Programme vs Punishment:* In every city, you may have seen a number of special weeks or months dedicated to traffic awareness organized by various NGOs, clubs and the traffic police. These are basically aimed at educating the public, but they hardly have any effect on the people. Also it is a proven fact that these traffic weeks, etc. make no significant change in the attitudes and incidence of accidents. It has been found to be true worldwide that people never follow the road safety measures taught in these campaigns. There is a big difference in having knowledge and actual behaviour on the road. Yes, these campaigns may increase our knowledge, but increased knowledge rarely results in appropriate behavioural changes on the road. If we analyze ourselves in all honesty before arguing against it, we would find most of us to be pretenders or hypocrites. What we preach we do not practise. Consider the following examples. If education is really a factor in improving traffic sense, then we should expect this change uniformly in the city as well as on highways. As fatal accidents are more likely to occur on highways, one would expect drivers on highways to be more disciplined and follow rules, but it is a rare thing. It is due to the fact that the role of the traffic police is confined mainly to the city, while its role is negligible

on highways. Even in the city how is it that people appear law-abiding near crossings and become rash in between crossings? The answer is probably the same.

On the contrary, when the police start punishing, it gets results much faster. When the police personnel educate the public, no one listens, but when the same policemen are spotted issuing challans to traffic offenders, every-one behaves. What does it show? Why do you stop well behind the zebra crossing when you see a board, 'Rs 1000 fine if you cross the line'? In one of the Asian countries, an educational campaign could not increase the use of seat belts to more than 23% in five years. On the contrary, when the police enforced rigidly a fine double the previous one, the use of seatbelt increased to 98% and that, too, within 6 months. Besides, it is also a fact that most attempts at enforcing the law will not have any lasting effect unless the enforcement is continuous and spread over a period of time.

(2) Safe roads: a Basic Right of Other Commuters Who Follow Traffic Rules: If a person after violating traffic rules is let off easily, it certainly reduces the other people's faith in the law, who strongly believe in observing traffic rules. Is it not possible that if these offenders are not prevented from doing the mistake, they may subsequently on one of such mistakes may put also the lives of other innocent people on the roads in danger? If these people are corrected timely, it may stop them from putting innocent peoples' lives in danger as well as their own.

(3) Traffic Violation: a Social Issue?: It may not be out of place to discuss the problem of traffic violations as one of the many other social issues, like dowry, female feticide, domestic violence, etc. Why was there a need to make laws against such social evils? It is because education and social awareness failed to curb them and the government had to intervene by making laws. Similarly, the issue of traffic violation is related more to the attitude of society rather than lack of knowledge. It is also true that laws alone cannot completely eliminate any social evil, but only help to keep them in check. If such incidences still occurs, it does not mean that the laws are not effective, but try to imagine the situation if there are no laws at all. I believe if the law can bring about a change in majority it has enough justification for its utility. Bad habits die hard and the desired behavioural changes may be brought about only after effective law-enforcement.

So we can surmise that education alone is insufficient to change people's attitudes on the roads unless strict penalties are enforced simultaneously. Campaigns are required and should be used BUT mainly to inform the public about various laws and respective punishments for

various traffic violations [we assume that the traffic rules are told at the time of issuing driving licence]. There is little reason to waste money on big road safety campaigns or advertisements.

[B] If yes then what punishment?

There cannot be a single formula for all kinds of traffic violations. I strongly believe that there are two categories of traffic offences, one relates to those where the safety of the driver himself is affected only [use of seatbelt, helmet, etc] where a fine is an adequate punishment. However, if someone causes threat to the lives of other innocent people on the road, besides his own, he/she should be penalized more severely.

(1) *Fine*: What is the harm if someone pays for his bad habits? None but the concerned person has landed himself in this situation. The imposition of fine is fully justified and, in fact, this is also a part of educating the people as some people don't like to be educated free of cost and want to pay for it. Keeping record of punishment awarded is very important. This punishment should be endorsed on papers, so that a heavier penalty can be imposed subsequently. It is justified to increase the degree of punishment for subsequent offences either in the form of heavier fine or suspension of driving licence, imprisonment, etc.

(2) *Suspension of Driving Licence or Confiscation of vehicle*: This can be done if he falls into the given criteria, e.g. if driving is dangerous to the public, driving under the age of 18 years, with illegal driving licence, driving after drinking, and driving a vehicle with an objectionable history.

(3) *Imprisonment*: Imprisonment is justified only in exceptional cases. What are these exceptional cases? Sometimes the attitude of the offender is so bad and if the magistrate feels he may be a potential killer on the road, it is a good reason for imprisonment. If people do not correct their dangerous driving habits even after repeated fines and other penalties, then what is the remedy? That is why keeping a record of previous offences is very important. We should not forget that driving is a big responsibility and involves many lives. This is also a good reason to bring driving offences under criminal purview.

As for my observation, the traffic police in general are not very strict in punishing. I must say that traffic policemen take harsh decisions only after giving sufficient time to the commuters and not from day one. People take undue advantage of this or consider their leniency as signs of weakness or incompetence. Recently in the last one or two years, due to deterioration in the discipline among drivers, the police have started imposing heavy penalties [including imprisonment for a few days] for rash driving, lane cutting, drunken driving, talking on mobile phone, etc. People

might argue that this punishment [imprisonment] is too harsh, but it might some day save their life or that of some other innocent traveler on the road.

In this regard the role of the traffic police should also be clearly defined. What do we expect from the traffic police, whether to behave like a mother or as a perfect law-enforcing agency? Should it ask the commuter 'Beta helmet pahan lo, otherwise you may suffer head injury' in a way as if mother says 'Beta sweater pahan lo otherwise you will catch cold' and nothing beyond this. Instead, I hold that we should consider traffic police a perfect law-enforcing agency.

Lastly, we being the responsible citizens of India often make a big hue and cry about traffic irregularities, but often ignore rules meant for our own safety. It is not possible to place policemen in each and every corner of the city or throughout the highways to check us. Why do we have to follow traffic rules only under pressure? If we really think of ourselves as part of a civilized society, then we have to understand that we ourselves are largely responsible for most traffic related problems.

(4) Other Measures: There are some other remedies that may prove to be effective like:

1. Community Service: The offender is asked do community service for some days or to assist in traffic control at a crossing for some time.

2. Film Show: The Delhi traffic police make the offenders watch a 3 hrs film which is very 'effective' in putting traffic sense into them. I don't know whether it is the contents of the film or the horrible experience [sitting for 3 hours at an odd time and place against one's will] that is responsible for pushing, drilling some traffic sense into them. Earlier people used to send a 'dummy' on their behalf, but now the police have made a photo identity mandatory to make sure that the right person is present for the 'ordeal'.

[5] Role of Media: The problems should actively be discussed by arranging debates involving intellectuals from our society.

Chapter - 7

THE POOR TRAFFIC POLICEMAN: PROBLEMS & CHALLENGES

[I] Physical Stress: It is 8 in the morning in summer. The traffic policeman has just started his duty with a fresh face and smile with energy and enthusiasm. He starts controlling the traffic by throwing signals. In the morning his movements are crisp and jerky with a wide swing starting at the shoulders and a loud whistle that is synchronized with his movements. These movements are so clear and distinct that they can be noticed by every person from all directions. This reminds you of the proud jawan of the Republic Day parade. But with the passing of time, say at 10 am, some signs of fatigue are visible on his face. Instead of the shoulder, he starts giving signals by moving his arm through the elbow only. By 12 pm he really appears exhausted with a lot of sweating and starts using only hands to convey signals and you have to look hard to understand them. Further on, he probably wishes people would understand the traffic signals only by the nodding of his head instead of arm movements. We can very well imagine what his condition would be at 2 pm in the scorching heat of summer. Sometimes in search of shade he moves a little away to one corner of the crossing and frequently you may spot him under some tree. Some smart fellows who try to jump the traffic lights, thinking there is no policeman, may get a rude surprise when he suddenly appears from under a tree.

There is nothing unusual about the above. The duty of a traffic policeman is among the few jobs that involve a lot of physical exertion and stress. I consider the traffic policeman the busiest person in any job. The reason being that impact of his absence even for a few minutes is easily noticeable at a crossing. In India, it is not at all unusual for many junior or senior officials in any government department to be absent from their job for a few hours without being noticed. Even if they give a surprise 'darshan' on their seats that does not necessarily mean they are doing some work. Even the absence of the senior-most government officer from his office for some time in any country, particularly in India, may not be noticeable. It can be seen that the minutes after traffic policeman moves away from the traffic platform a big chaos is created anywhere in India. The vehicles stand with horn locked causing a big traffic jam

behind in all directions of the crossing. Then you realize how important a person the policeman is. It is evident that the duty of a policeman is such that he is supposed to be present there every minute for full 8 duty hours. To do his exacting acrobatics for full 8 hours is a stupendous task indeed.

Many of us, who have joined the gym, know that to do physical exercise for more than 1 hour is not an easy job. That too, considering the fact that you do it with a strong motivation and in an air-conditioned environment where you have a regular supply of lime water. These traffic policemen have to work very hard in a very adverse and uncongenial environment. The canopy of four to five feet diameter of the traffic island under which he stands probably protects him from the sun only between the 11am and 1pm at a time when the sun is right above him. In the afternoon when the sun's rays fall obliquely, he hardly can maneuver his body to protect himself from the sun. The same music he has to face with rains also.

[II] The Pollution: The other major problem that this traffic policeman has to face is that of pollution. This is really a big occupational hazard. He is exposed to both air and noise pollution. In any city, air pollution is relatively more on the roads and it is the maximum on crossings because vehicles stay for a much longer period there and a large number of vehicles are reaching there from all directions. Even among the common people who are moving on the road only for a short time, the incidence of allergic lung disease by pollution have increased tremendously. We can imagine the magnitude of the problem of the traffic policeman who stays there for hours together. If you stand at some moderately busy crossing and start counting total number of the vehicles passing from all four directions in his duty hours, you will find that their number is anywhere between 1-2 lakhs or even more. The white uniform that was crisp and shining in the morning acquires thick black coating by the time he finishes his duty. Though he can wash this coating from the clothes easily, he can hardly do anything for the coating that he is accumulating on his lung surface daily due to smoke emanating from petroleum products. Studies have shown that within 5-6 years these policemen develop pollution-induced diseases. Sometimes, especially if the posting place is in the heavily polluted area, these diseases can develop much earlier. Mostly they suffer from respiratory diseases. Besides, they are also prone to have some other diseases like cardiac one, migraine, etc. All these cause significant morbidity, affecting the quality of life and also the life expectancy. The blood samples of policemen have been found to be having increased levels of toxic benzene and lead. Besides, their fertility or

reproductive outcome also gets affected and there are increased chances of cytogenetic damage to DNA and miscarriage in their wives.

These traffic policemen really need attention from the government. Because of the stressful nature of their job and constant exposure to alarmingly increasing pollution, they deserve special consideration. I do not know whether they get some suitable occupational hazard allowance/toxic allowance or not. Do they have any medical insurance for the treatment or against the various diseases that affect their health and life expectancy? Their schedule of duty hours needs to be changed and the area of posting should be changed on rotation basis from more congested to less congested areas. Though such recommendations have been made from time to time, I am not aware if they have been actually implemented. There have been news about some special arrangements like eco-friendly solar traffic booths and oxygen booth at the crossings, whether these are being used in general or were merely a sample just to make the news? As far as my city Agra is concerned, I have yet to see it.

Remember these poor policemen belong to a dept that is known for a disciplined life at work so it is not very easy for them to go on strikes, express their resentment and struggle for the removal of their grievances. Therefore it is the sole responsibility of the government to look into their problems and take a timely action.

[III] Inadequate Force and Power: In recent years, the magnitude of traffic and number of vehicles have increases fantastically. However, the number of traffic policemen has not been increased in that ratio. The traffic policemen are stretched beyond their capabilities. The paucity of adequate force is seen both in metros as well as in smaller cities. On an average their number in cities is nearly half that of the required one. A WHO study shows that there are two traffic personnel for a population of 10,000 and only 1/3 of their time is spent on enforcement. This is an important reason for deterioration in proper enforcement of the traffic rules. The law and order police that can help traffic police is already suffering from the paucity of force with a very poor average of only 126 per lakh against the recommended 222 per lakh. It has been learned that even there are vacancies for policemen; their appointments are delayed for a prolonged period just to allow the vacancies to get accumulated, making a better deal possible for the inside and outside go-betweens. Just for information, there is no paucity of force for VIPs as in Delhi alone 9000 police personnel are busy protecting 300 VIPs [30 policemen per VIP!]. If we talk of India, at present about 1 lakh police personnel are engaged in VIPs' protection.

It can be said that at least budget will not be a problem if government wishes to increase the traffic personnel. This would be clear from one example. In Delhi, on an average, 40 lakhs of people are punished for traffic violations every year and from them about 100 crore rupees is realized as fine every year [2007]. Another fact is that due to paucity of traffic personnel, out of 1000 traffic violations only one case could be intercepted for fine. Thus you can imagine how much money could be recovered from these defaulters. If this amount is utilized in the same department, this can not only allow to afford many additional traffic policemen, but also procure some other means like Patrolling vehicles or high-tech equipment like speed camera, handycam, lux meters, flashers, breathalyzers, etc, to intercept more traffic offenders.

[IV] Nuisance caused by VIPs and their Relatives, Public, Politicians, etc: Probably the rules are made only for the general public and not for the VIPs and their relatives. This may not be true in metros but in smaller cities, even the public has no fear for the traffic police. I have seen many times young boys, when asked to stop, either ignore or start abusing the policeman. The poor policemen sometimes make an unsuccessful attempt at chasing and throwing a cane towards them, but they run away making unseemly gestures. Unlike metros, they do not have adequate manpower, standby bikes and means of communication, etc. I have seen a clipping of a city in UP where the policeman was beaten by local goons when asked to stop and went unashamed just like that. Some of us may be remembering the incident of Lucknow where such elements tried to run over a DSP and he had to jump on the bonnet to save himself. This was not the end but starting of a thrilling Hindi cinema scene as these fellows continued to drive along with him in the same position in the capital city during the busiest hours for several kilometers and took him to the office of some top official just to show the extreme of their daring and nuisance value. For a long time the officer remained at the mercy of those fellows and surprisingly the fellow policemen could not chase the wrong doers and rescue the officer. For the first time I realized that the real scene may be more thrilling than a filmy one. This was too much to ignore for the government, and willingly or unwillingly it had to take action against the so-called political goons or workers. It is very unfortunate that three years after this in April 2009, a similar incident was repeated in the same city in the same way with a traffic police inspector with the only difference that this time the goons who did it were from another political party. At least now the police should realize that the rules and regulations are not meant for politicians!

Many times when the traffic police intercept such traffic offenders, immediately they start enumerating a list of influential people and threaten to the extent of getting him suspended. When the policeman refuses to oblige, they will dial some number on the mobile and ask the policeman to talk to a person, on the other side is either a local politician [who as a rule favours all his men without knowing what wrong they have done] or some officer from the same department. During the talk the policeman visibly looks embarrassed and after that he had to say to the traffic offender, 'Sir, please go'. The offender in question takes the vehicle and moves with a sarcastic smile. One can guess how demoralizing it could be for the policeman.

[V] Corruption: The present discussion would not be complete unless we refer to corruption among the traffic policemen. The corruption is so rampant in almost all departments in the country that this department cannot be immune. In the name of checking the vehicle papers many times people complain about harassment by the traffic police. The traffic policemen are so sincere that sometimes after doing their full duty, they silently work overtime at late night and in early morning hours to make money from truck drivers in the name of checking. For that they do not charge any overtime from the department. Sometimes this unauthorized checking of vehicles can cause traffic jam and accidents. Reports are there when some truck drivers have killed the traffic policemen by their truck out of a rage. Incidents are there when some truck drivers pulled the policemen into the truck's cabin and dragged him hanging on to the window, just to throw them off at some distance. These policemen allow heavy vehicles in the city in 'no entry time' that frequently cause accidents. They are known to collect money and illegal tax from local vendors, kiosks, auto rickshaws, etc. They have the 'forced privilege' to enjoy free snacks, chat or free riding on any vehicle. It is reported that the busy crossings are auctioned by the police dept.

Before going into details of corruption rampant among traffic policemen, I would like to tell a short airy-fairy tale having some relevance. After that probably you would understand better the problem of corruption in traffic police and for that matter in any other department. Once upon a time the chief reporter from the universe i.e. Shri Naarad ji, was called by Lord Vishnu to discuss some serious matter pertaining to a couple's relations. When Naaradji entered the darbar, he found Lord Vishnu visibly upset, so he asked, 'What is wrong with you sir?' Lord Vishnu replied, 'In the recent time there is a tremendous rise in the complaints by wives against their husbands that they are having some chakkar with other women. First of all, Naaradji let me know, what is this chakkar by the

way? Naaradji went close to his ear and explained about these chakkars, the 'affair business'. Prabhu got serious and said, this is not fair, it is expected after marriage husbands should be loyal to their wives and are not supposed to go for extra-marital relations. 'Do you have any data regarding the incidence about this?', Prabhu asked Naaradji. Naaradji immediately took out his laptop and after making a few clicks, he replied, 'About 50% of husbands on the earth are suffering from the disease called chakkar'. 'That means still about 50% husbands are loyal to their wives', Prabhu was a little relieved to hear this. He asked Naaradji, 'Please arrange a meeting with the loyal ones as we want to give reward to these loyal men so that we can encourage them in future, and secondly, we want to know the good reasons behind their loyalty. When the meeting with the loyal husbands started, Naaradji announced, "Dear friends, Prabhu is very happy with your loyalty and he wants to know about the inspiration or the reason behind it and you may also wish for any reward for it". After this there was an utter silence quite for some time. Hearing no reply, Naaradji again repeated the same. This time one lean and thin 'Arre O Sambha' type man came out of the crowd and politely said 'I beg your pardon, 'May I say something'. Prabhu said "Don't worry, go ahead". Then he replied 'Sir, the reason why we are loyal to our wives is very simple, we never had a single chance in our life for chakkar'. As far as reward is concerned, we all would be very grateful if you really give us a chance of such chakkar in our lives also. This time Prabhu started feeling real chakkar, giddiness and Naaradji had to help him to go to his bed. There is a long story ahead, but that part is not relevant to the present topic.

The only basic rule regarding the degree or parameter of corruption in any department or among the officers is that it is directly proportional to the opportunities available to them. This is not a rule that whenever we find an officer who is not corrupt or less corrupt, we assume that he is so by default having no opportunities. There are many officers in almost all departments, who, in spite of good opportunities, remain honest. Unfortunately their number is dwindling with time.

As far as traffic police department is concerned, I do not think that they really have wide scope for corruption in their capacity, if we compare it with other government depts. or even compared with the other cadres in police department, e.g. law and order police. If you consider the magnitude of corruption among various departments that are concerned with road traffic problems, PWD that is responsible for road construction would be far far ahead and next to it probably would be development authorities who are supposed to check encroachments or unauthorized

commercial activities. Again, I would like to make it clear, by saying so, I am not defending anyone or the traffic department, instead I am just trying to make a genuine comparison in my own way in a frank manner.

However, so far as traffic accidents are concerned, corruption is not directly related to it. Even if we remove corruption from the traffic police department, it would not cause a significant reduction in accidents [as you see in chapter 1 that 80-90% accidents occur due to human errors]. Moreover, so far as smooth traffic and accidents on roads are concerned, here I am in a mood to criticize the public more than the traffic policemen. In the city, you may blame them for the accidents, but whom you blame for the accidents occurring on highways where practically they have no role of any kind.

Are we not responsible to some extent for this corruption? Not to remind when we are caught for breaking a traffic rule, we are the first ones who promptly slide a note of Rs 50 to grease his palm just to save a fine of Rs 500. Why are we reluctant about keeping proper papers of the vehicle with us thereby giving them a chance? Why do parents offer bribe for getting a driving licence for their minor child? Obviously, we should not cleverly try to dilute or divert the issue from ourselves to others in the name of corruption. The blame should be shared by different sections of our society for different reasons.

Chapter - 8

VEHICLES ON INDIAN ROADS

[I] Unusual growth of motorized vehicles:

The number of motorized vehicles is increasing in India at a phenomenal rate. Up to March 2009 there were about 12 crore motorized vehicles [11,76, 57,943] on Indian roads. Every year approximately 1 crore vehicles are coming on roads. The present number of vehicles is about 335 TIMES more than it was in 1950 [3.5 lakhs only]. It is also important to note that out of the total vehicles sold during the last sixty years, 50% had come on the road during the last seven years. There is a very high tendency for indulgence in the personal mobility as personalized vehicle population has been found to be more than 90%. The causes for this exponential growth and tendency for personal mobility are multifactorial. Increased prosperity, change in lifestyle and deteriorating public transportations are some of the causes. Everyday on an average 4251 cars [including SUVs and MPVs] and 20,377 two wheelers are sold in India [2008-09]. The available reports say if no concrete measures are taken today, within the next five years [i.e. by 2014] the total sales of passenger vehicles are expected to nearly double. The rate of increase in vehicular number in metropolitan cities is relatively high as compared to smaller cities and about 30-35% of total vehicles are plying in metro cities. In recent years the automobile industry is growing by about 12% a year.

On Indian roads you can find a variety of vehicles. If we include both motorized and non-motorized vehicles, about 25 types of vehicles can be seen on roads. Among the motorized ones, about 70-75% belong to two wheeler category, car/jeep/taxi constitute 12-14%; trucks about 4-5%, buses 1% and rest 6% belongs to other category.

[II] A Lagging infrastructure: The worst trend in recent years

Besides accidents, the two other most important hazards of this exponential growth in vehicles that we see in urban areas are: a dismally poor road infrastructure leading to traffic congestion and deadly pollution. If one compares some Indian facts with those of developed countries, one would realize that within the next few years, coming on to the roads is going to be a more terrible experience or would prove a nightmare for you. I find two significant disparities in this context that I would like to share with people.



(1) In most of the developed countries about 50-60% people have personal vehicles [maximum in USA i.e. 85%]. Due to this adequate number of personalized vehicles in these countries, the rate of vehicular growth in future is very low and that is about 0.8% per year. In these countries the infrastructure that has been present, can very well accommodate this slowly rising number of vehicles. On the other hand in India at present only about 10% of population has personal vehicles. However, in contrast to developed countries, the number of vehicles in India is growing very fast [about 10% per year], that is, about 10-12 times faster than in developed countries. In India just imagine, if the present 10% of vehicular ownership is sufficient to cause the collapse of the present road infrastructure, what would happen when we will approach the figures of developed countries .i.e. 50-60% and that too, with a rate that is 10-12 times faster than those countries?

(2) The second factor that is affecting our infrastructure adversely is the status of urbanization. In most of the developed countries where about 80% people are living in urbanized areas, in India it is only 28% of the population that is living in cities. Again, considering the great potential of urbanization in India, what would happen to infrastructure if we approach the figure of the developed countries?

The attitude of the government at present appears like that of a manager of a cinema hall, where, in spite of knowing the fact that virtually there is no space inside, he continues to sell tickets saying 'go and enjoy the show'. There is already flowing a flood of vehicles on Indian roads. The government is probably waiting this flood to take the shape of a tsunami on the roads.

[III] VEHICLES AND POLLUTION:

[A] Vehicles and Air Pollution:

Out of the total air pollution vehicles cause about 72%, industries are responsible for 20% and the rest 8% is caused by the others. Pollution is directly proportional to the number of the vehicles in a city. The dangerously increasing number of vehicles is posing the greatest threat to the environment. Due to the rapid increase in number of vehicles, during the last 20 years vehicular pollution has increased about eight times, while industrial pollution has increased only four times over the same period.

(1) *The Effect on Body:* This vehicular pollution mainly affects our respiratory system. However, there is no part in the body which is immune to it.

1. *The respiratory system:* The pollution causes problems like asthma, allergic bronchitis and nonspecific chronic bronchitis. All these

diseases cause a reduction in lung function and cardio respiratory reserve. When some acute problem occurs over the pre-existing chronic disease, the morbidity and mortality is much higher as compared to those who have not been exposed to pollution. According to a WHO report in 2007, air pollution in India causes 5,27,700 premature deaths every year. That comes to one-fourth of the total of two million deaths occurring world wide due to air pollution. Considering the figure of vehicular contribution of this pollution, 72% of this mortality can directly be related to vehicular pollution. Out of the total 150 millions asthma patients in the world, 1/3rd belong to India and pollution is considered to be the main reason for it. According to WHO, about 4-8% of total deaths in the world in a year are related to air pollution. Pregnant women, the elderly, the sick, and young children are more susceptible to pollution.

2. *Cardio Vascular System:* Contrary to general belief that pollution mainly affects the respiratory system, it has been proved by the British Heart Foundation that diesel fumes can also cause cardiovascular diseases.

3. *Cancer:* Evidences are pouring in that exposure to polycyclic aromatic hydrocarbons (PAH) and benzene from automobile exhaust especially from diesel can cause even lung cancer. This has been supported by the fact that an increased risk for lung and prostate cancer has been found in truck drivers who are more exposed to diesel fumes. A Natural Resources Defence Council study in the US has shown that children riding diesel school buses are being exposed to 46 times the cancer risk and that was considered significant by the USEPA.

4. *Changes in blood:* Lead can cause anemia while increased blood level of Carboxy haemoglobin due to carbon-mono-oxide can reduce oxygen carrying capacity of blood.

5. *Central Nervous System:* Lead can cause neurological diseases. A fuel additive called MMT [a manganese-based highly toxic octane enhancer in petrol] is a strong neurotoxic substance causing Parkinson's disease like symptoms. This substance has probably been removed after protest from NGOs. A study in London shows that increased level of lead has been associated with significantly increased aggressive behaviour in young criminals.

6. *Gonads:* Quality of semen is reduced especially in those who are more exposed like traffic police.

7. *Eyes & skin:* Irritation or allergic diseases of eyes, skin and nose have increased significantly in the recent times.

8. *Birth Defects:* A study on pregnant women in USA has shown that air pollution can increase the chances of birth defects, fetal growth

retardation and premature delivery. The chances are more in cases where the residence is close to roads or when exposure to pollution occurs during first or last three months of the pregnancy.

(2) Pollutants emitted in fumes: More than 3,000 environmental chemical compounds have been identified in the polluted air from vehicles. Some of the important toxic compounds emitted from fuel are suspended particulate matters [PM-10 and PM-2.5], Carbon mono oxide, Polycyclic Aromatic Hydrocarbons (PAH), Benzene, Sulphur Dioxide and Nitrogen Dioxide. The pollutants that are lighter in weight [less than 2.5 micron in size] are much more harmful. Any compound that is present in this size whether a metal-like lead or any hydro carbons go deep into lungs and get deposited there. These lighter particles can even escape the mechanism of Euro II or Euro III. At present the concentration of these dangerous particles is much higher than the permitted levels in most of Indian cities.

(3) Factors affecting pollution: Degree of pollution depends on several factors.

1. *Urban vs rural:* Pollution is more in urban areas. If we go further, in urban areas it is more on roads and is maximum at crossings. The incidence of respiratory diseases in metro cities, like Delhi, is 10-12 times more than that of smaller towns. In metro cities about 20-30% of population suffers from respiratory diseases caused by air pollution. The worst thing about vehicular pollution is that emission occurs at the ground or breathing level. In case of industrial pollution, emission occurs at a much higher level and that too in an area a little away from the city. In fact, pollution is a side-effect of any city that grows fast.

2. *Diesel vs petrol vehicles:* Diesel fumes are much more toxic than petrol. Diesel vehicles emit three times more nitrogen oxides and 100 times more particulate matter as compared to petrol ones. As already mentioned above, certain compounds in diesel fumes can even cause cancer. Unlike European countries, clean diesel is not available in India. Thus emission level of sulphur dioxide is quite high [350-500 ppm] as compared to Europe [10ppm]. The horrifying fact at present is that the number of diesel-based cars is rapidly increasing. Every year diesel cars are increasing approximately by 100%. In 1999, out of total cars, only 4% belonged to diesel category, while in 2006 this proportion has reached 20%. The Diesel cars are expected to be nearly 40-50% of new car sales by 2010. On the other hand, petrol cars are increasing annually by 10-12%. We are already worried about the very rapid rise in total number of vehicles. It is much more worrying that there is disproportionate rise in diesel cars.

3. *Traffic congestion:* Slow speed of vehicles significantly increases pollution. A reduction of speed from 30 km/hr to 10 km/hr can increase the emission of toxic fumes by about 60-80%. That is why those who are living or working in congested areas especially on road side like traffic policemen, hawkers, shopkeepers, drivers of public transport system, have to suffer more from pollution. The situation becomes worse in case of a traffic jam. Probably this is one of the reasons why Kolkata has become the most polluted city of India. In a recent study by Chittaranjan National Cancer Institute [CNCI] during last 6 years, it has been found that 70% of its population is having one or other forms of respiratory ailments with relatively high incidence of lung cancer [18 out of every 1 lakh/year]

4. *Winter season:* The effect of pollution is more in winter. In winter due to reduction in air flow, the air containing heavy particles is not dispersed by natural winds thereby causing the formation of smog. Thus there is a rise in respiratory diseases in the winter season.

5. Old and poorly maintained vehicles cause more pollution. A study shows that in India 20% of 'bad in service vehicles' contribute as much as 60% of total vehicular pollution.

6. The pedestrians or drivers of two wheelers suffer much more than four wheeler drivers.

[B] Vehicles and Dust Pollution:

Moving vehicles disperse a lot of dust into the atmosphere. Busier the traffic more the time taken by the dust to settle on the ground. Besides, absence of pavement or lack of greenery in the vicinity of roads also increases dust formation. The dust in the air is next to fuel in causing pollution and in some cities it has been found to cause as much as 33% of total pollution. Besides humans, road side trees are the other great sufferers of dust and fumes. Trees remain stunted as leaves are covered by a thick tarry dust virtually sealing its breathing pores. You may notice how bright the leaves look after the first showers of the rainy season. Except those trees which were planted long before, survival or growth of the trees on roadside is becoming very difficult due the extremely high level of pollution.

[C] Vehicles and Noise pollution:

Noise pollution by engines and honking and blowing horns of a large number of vehicles has reached to an extent that is seriously affecting hearing in the public especially traffic policemen, bus drivers and children. Have you realized that late in the night when traffic stops, you can clearly listen to the tic tic of your clock or a sound of bell coming from a great distance. Presently, vehicles are the main source of noise pollution while

commercial activities, generators and religious activities come after this. A study in metro cities has shown that incidence of mild, moderate, severe and complete loss of hearing among people living near the road crossing is 62.14%, 25.71%, 5% and 1.42% respectively. Similarly, in a study on traffic policemen in a metro city, the incidence of noise induced hearing loss has been found to be around 21%. The recommended maximum noise limits in day time in urban and residential areas are 55 and 45 dB respectively. However, frequently the noise levels in metros as well as small cities have been found between 76 to 90 dB. A study in Delhi showed that even in the silent zone like hospitals, noise level was found around 80 dB [where it should be below 50/40 dB].

There is provision of punishment in the M V Act for the noise pollution and it does not allow motorists to install horns with over 85 decibels, pressure horns or multi-toned/shrilled horns. If we go by these criteria, majority of vehicle horns cross this limit as the noise level has been found between 95 and 100dB. According to the existing provisions of the Motor Vehicles Act, a fine of Rs 100 can be imposed for honking that seems to be too little. Even this existing law is seldom enforced. So, if we really want to protect the people from noise pollution, there is a need for increasing the fine as well as in the drive against the noise pollution.

[D] Vehicles and Global warming:

Due to the huge expansion of vehicles the generation of CO₂ has increased significantly. This CO₂ is an important component of the gaseous mixture that causes green house effects. During the 20th century, the temperature of the globe had increased by 0.6 degree, glaciers were reduced by 10% and the sea level had increased by 0.69 to 0.88 meter. If no measures are taken in the 21st century, a rise of 1.4 to 5.8 degree in temperature is expected. It is affecting mainly costal areas of the developing countries of Asia, Africa and Pacific islands. About 262 million people have already been reported to be affected by natural calamities in recent years. The effects of global warming on our lives depend mainly on rise in temperature in degrees. For an example, an increase by 1 degree would put many species in danger, a rise of 2 degree would affect crop production, a rise in 3-5 degree would cause communicable diseases in half of the world population and a rise above 6 degree would cause frequent natural disasters with the threat to many cities getting submerged.

Regarding the measures to combat this menace, I clearly see two areas of discussion, national and international. As regards measures at the national level, curbing the excessive vehicular number is extremely essential besides, curbing excessive power consumption. Since India is

still at the developing stage, it is difficult to restrict industrial emission rigidly. However, as for emission occurring due to luxurious activities, unnecessary use of vehicles, excessive power consumption, etc. is concerned, this can certainly be reduced.

If we talk of an international measure, at present the status of this global warming is like WTO. That means that the agenda is important enough to discuss it internationally, but most countries, instead of a practical solution, seem to be interested only in enjoying the picnic with 'talk and blame game' at different places and different platforms. Here it is worth mentioning that in general this problem is mainly contributed by the developed countries, USA being responsible for 20% of total green house emission in the world. Perhaps, that is why these countries do not seem to be as serious as we expect. They are finding it very hard to change their comfortable lifestyle. According to the report of UN Framework Convention on Climate Change [UNFCCC], the rich countries, instead of cutting their emission of green house gas, have increased it by 9.9% during the 1990 to 2006 period. This is in spite the earlier warning by scientists that global emission needed to be cut by as much as 30% from 1990 level in order to stabilize the temperatures at a bearable point by 2020. The worst offenders in the rich countries are Australia [increase by 27.3%], USA [increase by 14.4%] and Turkey [increase by 95%] in this 16 year duration. Though there are some rich and industrialized countries that have shown a decrease in it e.g. UK [decrease by 15.1%], Germany [decrease by 18.2%] and Eastern European countries, where the economic meltdown had led to reduced emission by default. The rich countries are persistently putting pressure on India and other developing countries to take adequate measures to reduce emission. On the contrary, the developing nations are adamant that all the emission that has already been accumulated is mainly contributed by rich countries.

[IV]Some other worrying facts about vehicles:

[A] Tendency to Showcase Vehicle:

It is quite natural that when we get some new vehicle in our life for the first time, we feel proud and want that it should be acknowledged by others. The type of feeling is the same whether a child is getting a bicycle or one goes for a car for the first time. This is natural and appears to be normal. However, there is a class that knowingly or unknowingly goes beyond this and tries to dominate others by displaying its wealth and prove its exceptional social standing in a vulgar way by means of vehicles by its number, interiors, costs, etc. Some rich fellows feel that whenever a new luxury car is launched in a city, it should be added to their fleet whether or not it is really required. Yes, by this you

may be called a rich fellow and you can impress someone on the road, but certainly you cannot be called a great person. Ultimately, it is your overall personality, work or humble attitude towards the society that make you popular or great and not these parameters of your wealth.

[B] Car: a home away from home or annexe of house?:

If we talk about our non-professional time, the most important places in our life where we spend our significant time are the bedroom, toilet and driving a vehicle. That is why for some people after home, car may be the second most important item in life. It is seen these days that extreme form of luxury, that is dominating our life style, is also being forwarded to the car. We decorate our cars as we do for our drawingrooms or try to get comfort akin to a bedroom. Nowadays in vehicles we expect everything powered and automatic that can be controlled by finger tips. In view of our attitude companies are trying their best to cash in on this tendency and attitude by adding more and more extra features. In future we may probably control it by our voice commands or eyes. Some German engineers are trying to make a mind reading car that will interpret the mind or EEG [electro-encephalogram]. Now machines would control our minds, not vice versa!

Basically, vehicle or a car is a means to commute from one place to other safely and comfortably. It is quite justified to add some features regarding safety and comfort. It is very difficult to define comfort as it is a relative term that is individualized and subjective and is governed mainly by our pocket. Once you enjoy a higher comfort in the vehicle, it is hard to resist it and you always have a tendency to go for a still higher comfort zone. Now, I believe we should seriously think about this. We should not overindulge in comfort business. If automobile companies are really interested in technological advancements, they are welcome in other fields, like for more fuel efficient engines and in alternative fuels, etc.

[C] Burning Car:

A new kind of accident is being noticed these days i.e. cars are catching fire suddenly. In most of such situations cars get permanently locked, not giving any chance to occupants to escape but to be burned alive. Inside a car the space is very small and it is full of plastics and foam taking no time to char the body of its occupants. In such a situation we are compelled to think whether the newer technological addition is really a boon or a bane. Why these incidents that were rare earlier, a few years back, have become very common these days? It shows that these are probably the side-effects of many unnecessary additional features

to the car. More features mean more electric circuits or wiring i.e. more chances of short circuiting. We don't know whether these devices are ordered from standard, reliable companies? Secondly, whether these devices have been tested in hot Indian climate or not?

Why are we becoming more and more calorie saver? If we consider the example of power window, we find that in India except for 2-3 months, you need AC for full year and the status of pollution outside also hardly allows you to put the window down and only once in a while. Why can't we use our hand a little bit to move the window glasses by using a lever-based glass mover? No doubt, you have to consume 3 calories for it, but it can prove a life-saving opportunity in some emergency situations, like drowning and burning of car where a power window and door may be permanently locked due to malfunctioning.

[D] Signs of nuisance on vehicles:

In India, we frequently see people using flags of political parties [that typically keep on changing with change in ruling party] or mention that the vehicle belongs to the press or the police. Similarly, on many vehicles beacon lights can be seen that actually do not belong to the eligible authorities. Why do they do so? Do they want to show that they have some special status or nuisance value on the road? Among all fields why do they choose to use the press, the police or political signs only? Many times the much-needed number plates are missing on the vehicle instead some other big plates are there indicating about funny organization that you have never heard of before, e.g. chairman, SSS [swamutra sewan samiti] or President BBC [Bandar bhagao committee], etc. People are so keen to show their status regarding their nuisance value that if allowed, they can put these name plates over their foreheads. We know that most of them are fake but the concerned organizations whose sign they are using do not take any action.

[V] Motor Cycle vs Scooter:

Among the various two wheelers in India, there are scooters, motor cycles and auto cycles [also called moped]. The moped is fast becoming an extinct species now. The scooter that used to be very popular a few years ago is also losing its popularity. Motor cycles now share 80% of total two wheelers and scooters and mopeds share 15% and 5% respectively. Probably experts might know why the motorbike is so popular; otherwise as far as safety on the road is concerned, I see many advantages in the scooters over motorbikes. Bikes provide less protection to legs and also pose the risk of burns on legs by silencer in case of an accident. When you increase the speed of a scooter above 60 km/hr, you are

made conscious by its vibration and sound so that you do not feel like going for a higher speed. This feature certainly may not be liked by youngsters, but I consider this as a safety feature of the scooter. While on motorbikes, unless you go above 60 km/hr it does not feel as if you are driving. The so-called thrill comes only when you drive it above 60 km/hr. This high speed will cause more injury if an accident occurs. The bike has no third wheel while a scooter has. The scooter is very safe for the second person sitting behind the driver. This is especially true of women and kids who comfortably fit between the driver and the third wheel. While in bike there are fair chances of trapping of dupatta or saree of the women sitting behind into its wheel.

I have enumerated so many plus points of scooter, but as per the sale figures, nothing is like bikes. Besides a good fuel efficiency and mileage, only one extremely good feature of the bike is that of its single flat seat. This is liked by the young boys very much. It gives a very nice 'intimate feel' when a boy goes for a drive with his girlfriend sitting astride holding him with her arms around his shoulders. Sometimes he unnecessarily uses brakes to enjoy the 'proximity'. Although many scooters are having a similar seat now, lekin woh baat nahin. For the same reason romantic couples might miss the 'similar kind' of single, uninterrupted front seat of old model cars that used to be there before the invention of the floor gear.

Chapter - 9

THE ECONOMICS OF THE VEHICLES

For the majority of us, vehicles are a necessity now. We spend a significant proportion of our income on vehicles for their purchase and maintenance. In this chapter, I am going to consider various financial issues of the vehicles concerned with purchasing, running or tax-planning. A good knowledge of these financial aspects helps us in taking correct decisions. The opinion given below is purely personal. Before following it please analyze the facts in your context and if necessary, consult your financial advisers. This discussion is applicable to both two and four-wheelers. However, here I have used four-wheelers as an example.

[I] What is the actual running or driving cost of a vehicle?

The money that we spend on a vehicle can be divided into three parts:

1. The initial cost inclusive of registration.
2. Daily fuel consumption.
3. Vehicle maintenance, e.g. service, repair, yearly insurance, etc.

Most of us consider daily fuel consumption to be the running cost of vehicles. However, the actual daily running cost of the vehicle is quite different. To understand the actual daily running cost, in addition to daily fuel consumption, we have to take into account the daily depreciation and the daily maintenance cost as well.

The daily depreciation: The concept of daily depreciation is a very important fact that we usually do not take seriously. Suppose, your new car costs you Rs 6 lakhs. Now you keep the vehicle with you for some period, say three years and then you decide to change the car. Suppose, you get Rs 2.5 lakhs as a resale value of your car. So the depreciation or loss in the value of the car is the difference of initial and resale cost i.e. Rs 3.5 lakhs [6 lakhs – 2.5 lakhs]. That means about Rs 3.5 lakhs you had spent for keeping the vehicle with you for a period of three years. If we talk in terms of days, the daily depreciation comes to Rs 320 a day [Rs 3,50,000/365X3] Thus, you can say that you paid Rs 320 every day like a rent to the company for your vehicle. This amount is just to keep the vehicle with you. Since you pay all this money on the first day while purchasing the vehicle, you do not realize this fact of daily depreciation of the vehicle.

The daily fuel cost: Suppose, you are living in an average Indian city where on an average you travel about 12 km/day. If we consider that your car is giving an average of 12 km/litre, then you would be paying for one litre of petrol daily i.e. Rs 50.

The daily maintenance cost: This includes the money for vehicle's insurance, its repair and time-bound services. Suppose if you are paying Rs 20,000 for these heads every year, then the daily maintenance cost of the vehicle would be Rs 55[Rs 20,000/365].

The actual running or driving cost: Thus after purchasing the car if you drive it daily then the actual daily running cost of your vehicle would be the sum of the daily depreciation [Rs 320], the daily fuel cost [Rs 50] and the daily maintenance cost [Rs 55] i.e. Rs 425. If we consider a situation in which you purchase a car but do not drive, but still you have to spend Rs 375 per day. Now you can also easily realize, out of the actual daily driving cost [i.e. Rs 425] only 12% is shared by petrol.

So, purchase a vehicle only when you really need it and once you have got it then run it and don't keep in the garage. This is especially true of the luxury cars where the daily depreciation is more as compared to the small segment cars. If you drive less, the only advantage you get is that you get a little better resale value. Instead of Rs 2.5 lakhs you may get Rs 3 lakhs, say Rs 50,000 more, but still it would not affect much to recover your depreciation. Nowadays there is a tough competition among the car companies so the resale value is reducing with time. Otherwise also, while purchasing a bigger segment car, to consider the resale value of that vehicle is not an important point for decision-making. Considering the same fact, it can be suggested to those employees who have already having the facility of vehicle from the company or the government, but still wish to have a personal car for occasional driving; it is advisable to go for a smaller segment car.

These facts and statistics are mainly for an average case. There may be variations according to the initial cost of the vehicle or mileage covered in a day.

[II] Diesel vs petrol vehicles:

We frequently get attracted by the diesel vehicles mainly for the reason that it consumes cheaper fuel. However, before purchasing it, you have to weigh extra charges and maintenance cost on diesel vehicle against the benefit you get out of it. Suppose, you give an extra amount of Rs 1 lakh to get a diesel vehicle in order to save money. If this vehicle has an average of 15 km/litre and you drive 30 km/day, you would spend rupees Rs 70 as cost for 2 litres of diesel [@ Rs 35/litre]. Had this been a petrol vehicle, you would have required to spend Rs 100 as cost

for 2 litres of petrol [@ Rs 50/litre]. Thus you would be saving Rs 30 a day by driving a diesel vehicle. Thus in the above-mentioned situation, to recover Rs 1 lakh that you have paid as an extra cost for the diesel version of vehicle, you would require nine years. Whether you are willing or not you have to keep this vehicle with you for full nine years if you really want to recover this extra cost. In case, you want to keep the vehicle for three years then instead of 30 km/day, you have to drive for at least 90 km/day to recover this extra Rs 1 lakh. Thus we see that, as far as fuel economy is concerned, the diesel version is useful only for those who do significant travelling every day like taxis or people living in metros. Besides, diesel vehicles require bigger maintenance cost. Its engine has more weight that affects the life of tyres, suspensions, brakes, etc. Last but not the least important point is that the majority of diesel vehicles in present time are not eco-friendly.

[III] When to change your vehicle

There are no fixed guidelines. You yourself only can realize the need for changing the vehicle. However, there are some points that need to be considered before doing so.

(1) If it really gives trouble: When your car frequently undergoes repair or gives you trouble, then probably you need to change it. Please make sure that the problem is major one and really concerned or related to safe driving. Many times there may be minor faults, but they occur repeatedly as workshop mechanics fail to locate it or the trouble occurs at odd times [scorching summer] and in odd situations [in front of some guest] and you feel embarrassed and frustrated. You declare immediately 'enough is enough now it had to be changed'. Such impulsive decisions may not always be right.

(2) If you move for a higher segment car: If you feel that you deserve or need a bigger car, go ahead and get it. The only thing you need to decide is whether or not to keep out the smaller vehicle that you possess. It is justified to hold a small car in cases when there are other persons [wife or children] who also need a car. Since the depreciation and running cost for a small car is less, so you can afford it easily. But here we assume that you buy the bigger car with an intention that you would make full use of it for the reason just mentioned above in section A. It has been frequently seen that even after having an additional bigger car; people still use the small car more frequently. The bigger one is used on weekend and in parties, etc thinking that by doing so they are having a significant saving. There could be other reasons for doing so. If better average and savings are the main reason for preferring

the small to the bigger car, then they have to think again. Let us see how much you save by driving a small car. Suppose, the average of small car is 18 km/litre and you are driving about 18 km/day [i.e. requiring 1 litre petrol/day] and you keep the car for three years, then the total cost of the petrol consumed in three years would be $365 \times 3 \times 50$ [cost of petrol consumed per day] = Rs 54,750. Now we take up the case of bigger car that gives an average of 12 km/litre while other conditions remain the same [i.e. you drive for about 18 km/day and you keep the car for three years]. The total cost of petrol consumed in three years by the bigger car would be Rs $365 \times 3 \times 75$ [cost of petrol consumed per day] = Rs 82,125. Thus in case of driving a small car only, you save Rs 27,375 [82,125 - 54,750]. If the initial cost of the small car is Rs 3 lakh and for the bigger one is Rs 6 lakh, you would find that you had paid Rs 3 lakh extra for the bigger one. If you compare the money that you have saved by NOT driving the bigger car [Rs 27,375] with that of the extra cost given for the bigger car [Rs 3,00,000], you would realize that there is no real saving instead you have lost a significant amount of money by not driving the big car [Rs 3,00,000 - 2,73,75 = Rs 2,72,625]. Not only you lost the money but also sacrificed a nice comfortable drive and good air-conditioning of the big car for this duration.

(3) If you frequently go for long distance travelling: Vehicles should be very reliable when you frequently go on highways. If some fault occurs and you are alone, you may be in trouble as it is not possible to leave the vehicle to go for some mechanic. Safety is also an important factor in case women are with you and at night.

(4) Time-bound change: It is true that the performance of vehicles goes down with time. It is frequently suggested that we should change our vehicles after a certain period, say 3 or 4 years. Yes, this is true to some extent, but this should not be the rule. If you have maintained your vehicle well, your driving is limited only to a few km/day and vehicle is single-handedly driven and more importantly not causing any trouble to you, then it is quite justified to keep it for a longer period. Remember keeping the vehicle with you for a longer period would reduce the daily depreciation of the vehicle. If we consider the same example mentioned above in section A, where the daily depreciation is Rs 320 for keeping it for 3 years, we find that if we keep the same vehicle for one more year, then it would come down to Rs 240/day and so on.

(5) For women it is better to have a perfect vehicle: This is mainly for safety reasons, considering the fact that they are not very familiar with the engine parts, so they find it is difficult to manage even

small faults. They are more conscious of their appearance and make-up, so even for changing the flat tyre, they expect someone to help. My wife knows only one solution for every problem, i.e. just to inform me on mobile and wait [hopefully] or leave the car there to get a taxi. I feel today's woman can do everything except change tyres.

(6) Some more tips:

1. Sometimes you feel a need for an extra bigger car or SUV for the purpose of going for long-distance family trips as it better suits such travelling. But before doing so, you analyze as to how frequently you do it. If you are going occasionally on such trips, it is much better to have such a vehicle as a taxi whenever required. That would be much more economical to you. Besides, you also get a driver making your drive more comfortable and you need not to take care of safety, security, more importantly parking of the vehicle.

2. Sometimes just out of love and affection, you yield to or cannot resist the pressure of your children, lovely wife and you go for a vehicle. I don't know how to deal with such a situation. But before going for a vehicle, decide whether among all the various recent pending needs for your family, is this the top priority? Recently received money in your pocket or fat pocket along with such emotional demand is a dangerous combination with a very high strike rate.

3. Do not go by what vehicles the other people in your neighborhood or in your office have. There is no reason to compare their needs with yours and always use your brains.

4. Think seriously before getting attracted by offers like 100% financing with a 0% interest. Now with the aggressive salesmanship it is very hard to resist them. In general it is a very tough job for a middle-class person to escape all these distractions and take his earnings to the bank for savings. It is true not only of vehicles but also of many other home appliances.

[IV] Vehicle and Tax Planning:

If you use your vehicle for a professional purpose, you are entitled to get tax benefit from its cost. The total cost of the vehicle is deducted in parts every year as depreciation from your taxable income. If as a professional you are going to have a car for the first time with the aim that after having the car you expect a better income, you must get the car. There should be no confusion about it. However, there comes another situation when you already possess a car and the question comes whether you need to change the car just for tax-saving.

It is a common situation for professionals whose income or business is growing with time, so that at the end of financial year they have an additional income as compared to the previous one. This additional income increases his tax liability. Now to save this extra tax burden, they may be suggested to go for investment in some equipment or machinery of professional use. Since a car qualifies for this kind of investment, they are frequently advised to change their cars by tax advisers and chartered accountants. Yes, it does help in reducing the extra tax burden as by doing so they start getting the benefit of depreciation. However, I would suggest what apparently looks beneficial in this investment may not always be so. Before taking any decision, let us consider what actually may happen in these situations.

Suppose this year you have an additional income of Rs 4 lakhs. Let us see what will happen to your tax structure and net saving in the two different situations viz: [A] when you do not change the car merely on the ground of saving the tax [B] when you change the car just for tax-saving.

Condition A. *You do not change your car:* In this situation the amount of Rs 4 lakhs will be counted in your taxable income and you pay Rs 1.2 lakhs as tax [considering you fall in 30% tax bracket]. In other words, this year your net savings will be increased by Rs 2.8 lakhs.

Condition B. *You change your car:* Suppose, the initial cost of your old car was Rs 5 lakhs and you sell it for Rs 2 lakhs. Now you purchase a new car for Rs 6 lakhs. For paying Rs 6 lakhs for the new car you need to add Rs 4 lakhs [you earned in the current year] in to the money that you got by selling the old car [Rs 2 lakhs]. Thus the advantage that you get now, this Rs 4 lakhs that you paid from the current income will not be considered in your taxable income, so you save Rs 1.2 lakhs i.e. equal to the tax according to your tax bracket of 30%. Though this saving does not occur in the same year, you recover it completely through depreciations over the years. Thereby as a professional this car costs you cheaper by Rs 1.2 lakhs as compared to a non-professional.

Interpretation: In condition A when you refuse to change car merely on the ground of tax-saving, you see that out of the Rs 4 lakhs, even after paying the tax you do a significant savings [Rs 2.8 lakhs]. While in case of changing the car [B] out of Rs 4 lakhs, you are able to save only Rs 1.2 lakhs. Thus, by not changing the vehicle you save an extra Rs 1.6 lakhs [Rs 2.8 lakhs - 1.2 lakhs]. Money saved means money earned. I believe if you really need to change a car due to some genuine reasons mentioned earlier in section C [e.g. it is really giving trouble,

you want to go for a bigger one or you think a change would benefit your professional income], it is fully justified to change your car. What I am trying to emphasize here is, just for saving tax, if you change a car that is already running in a good condition or well maintained and get another similar new one, you do not get any advantage as far as driving comfort or professional income is concerned. Instead by doing so, you lose your savings by a significant amount. You see that though there are tax benefits on purchasing a car, it does affect your ultimate savings if you analyze it carefully. Then guess who gets the benefit most of the times when you change your vehicle unnecessarily on tax ground; you, the tax department or the tax adviser? Obviously, none of these, it is the automobile companies.

I try to explain this with another example. Suppose, I purchase a medical equipment of worth Rs 1 lakh, then according to my tax bracket of 30%, I would save Rs 30,000. In other words still Rs 70,000 will go from my pocket. Unless I recover Rs 70,000 by making a good use of this equipment, I would remain in loss. My profit will start only when I make an additional income out of this equipment above Rs 70,000. Similarly, in case of purchasing a car as in case [B] even after saving Rs 1.2 lakhs, still your Rs 2.8 lakh are at stake. So, unless you generate an additional income of Rs 2.8 lakhs that is totally attributable to this new car, your decision for purchasing the car cannot be called wise at least from the tax point of view.

Here I just want to make a point that in spite of the fact that we get tax benefits as professionals, we should buy any professional materials like cars only when we really need them. Many of us may be having a false impression that this money which is paid for such items of professional use gets totally deducted from the actual tax. It is not so, the only relaxation that we get is that this money is not counted in our taxable income, thus allowing us to save only a part of this money that is equivalent to tax rate of that particular bracket in which our return falls [In above example it is 30%]. Remember, the lower you are in terms of tax bracket, the lesser would be the benefit that you get on professional items. In the present time when the Finance Ministry is increasing the liberty for the taxable income, more and more middle-class people are either getting exempted or shifting to lower tax bracket. Thus it becomes more important for professionals falling in the lower bracket. Had it been the government policy that the cost of the car would be deducted directly from the actual tax [like that used to be with LIC investment a few years ago], instead of from taxable income, then you are liberal to get any professional materials without much considerations. I don't think the

government would allow this. Moreover, if you get a tax relief in current year, then for the every coming year again you would have a compulsion to purchase some more such things whether or not you need them.

It is true that proper tax planning is very necessary and useful for all of us, so that we can take the best advantages of government policies that are in our favour. It is also right that in proper tax planning we should target for maximum tax saving. However, its proper definition would be complete only when we achieve this maximum tax saving simultaneously with good capital or savings on our side also. Bringing tax liability to merely a zero without any significant actual money in your hand cannot be called a proper tax planning.

[V] When to purchase your first vehicle:

For any desired new vehicle you are the best person to decide its real need and affordability. Here I assume that you have just started your professional career and going to purchase it out of your own income. The only two things that I would consider in my own case are:

(1) I will prefer that major share of the cost is paid from my pocket. I am not against car loans. However, even if I go for a major loan, I would ensure that there is enough money or capital in my savings. The reason is that if some mishap occurs to me or suddenly I lose my job, then there should be enough savings not only to meet my daily needs for at least 5-6 months but also for the loan instalments. There might be a question that when you already have money, is it necessary to go for the loans. Yes, this is correct for some cases like [a] professionals who in addition to depreciation also get benefit on the interest of loan in their income tax and [b] if the interest that you gain on your personal savings is more than the interest you pay for the car loan. Please keep at the back of your mind that loan is a loan that has to be paid in future. There is a contrast change in the smile, attitude and behaviour of bank people when you avail the loan and afterwards. Imposing additional or hidden charges or blackmailing by imposing false cases, taking a forceful possession of the vehicle from you, making a nuisance at your house by their goons, all these are well known facts.

(2) I would honestly try to find out the reason whether the need for vehicle is a 'genuine' priority among the other needs in my family. I consider a situation when I have just started my career and my savings have just started taking a shape. The question comes where my initial savings should go first i.e. for capital making [FDs, lands or flat where value increases with time] or to the items like car [that depreciate with time]. Anyway, this is not an easy thing to decide. The old philosophy

was that the initial savings should go for land or house construction. My father preferred almost all of his initial savings for house construction and for best possible education for us. He got a moped [auto cycle] for himself only one year before his retirement while rest of his life he used a bicycle to go to office that was 6 km from the house. Today the property earned with his hard work which he had left for us is not easy for me to get with my own earnings.

On the other hand, the new generation couples feel it right that we should enjoy life right from the beginning. They believe more in tours and trips with their family. So, nothing is wrong with getting a car at an early stage of a career. The enjoyment that is meant for the 30s gives more pleasure if availed at right time rather than at the age of the 60s. They feel it is no fun if you travel to the countryside or mountains with a stick. That might probably be labelled as pilgrimage tour, but certainly cannot be called a fun-making trip. In fact it is a debatable issue. I feel that both should go simultaneously and you have to make a balance between savings and other expenses made towards luxury or enjoyment in the life. The only precaution that we should take is that we should not try to live beyond our means. Considering the very volatile present economy of India and the world this becomes even more important.

I hope that this present economic recession must have given a lesson to us that there is no one on earth who can predict and warn us against a sudden severe economic crisis. It is only the constant feeling of some social and economic insecurity among us that ultimately motivates us to save or to do something to make our future secure. Despite the fact that Indians are able to save 20-30% of their earning as compared to people of the developed world [who are able to save only 5-6% of their earnings], it is the people of the developing countries like India who suffer the most in such an economic recession. The reason is simple. In developed countries, much of the social and financial securities are provided by the government while in India there is nothing like this.

The life in general is not confined to use or misuse of vehicles. The spectrum of life is wide and it is explored as time passes. The economics of the vehicles should be linked to the economics of the entire gamut of life. We should not think of one item in isolation from so many items.

Chapter - 10

BIOGRAPHY OF URBAN ROADS IN INDIA

Roads are the most popular mode of transportation in India as they carry almost 80-90% of the country's passengers and 60-65% of freight. It is a fact that cities and villages situated on good highways and having a good physical connectivity develop very fast economically. Unfortunately, about 40% of India's population does not have access to all-weather roads. During the last 60 years the roads have increased 8 times while vehicles and traffic have increased by 335 times [up to March 2009]. Road is also one of the biggest employers in our country, providing livelihood right from a labourer to the minister. Except grassroot workers, who earn for the job done, most of the other persons in the series above them probably get disproportionate payment for their jobs.

Here I will consider the present conditions and peculiarities about city or urban roads only as the highways or the roads leaving the city have already been considered in the chapter of road accidents.

[I] Making vs digging of roads: An absolute incoordination:

There are clearly two groups working on roads, one belongs to road-makers while the other to road-diggers. Both work in 'close in coordination'. It is very common to find that once the road is complete, the very next week you see people from another department start digging it again. When you enquire, you find that they belong to either water works, sewer, telephone or from a private company laying their pipes and cables. In Mumbai I am told there are 32 agencies below the roads! Sometimes you think seriously as if these diggers were patiently waiting for the road to be completed. I believe there are clear instructions from the PWD to other departments to keep their hands off till the road is completed. Once the job is done, the PWD people inform and invite others to do their job. The PWD people do not mind this as they again get a fat budget to 'deal and utilize' effectively for road-making.

The PWD people become hyperactive, once the budget of road construction has been passed. They start work without asking other depts. to do the pending work. The situation of the Indian road is in no way different from a poor woman who has just got new clothes to wear, but the very next week someone tore it. Only God knows in a poor country

like ours when she would get the next chance for new clothes and till then she has to continue to wear this repaired one. In India, roads are being raped repeatedly and we all observe it silently without any concern. Literally people in the concerned departments are busy to loot and waste the government money. After all, it is all public money, so none seems to be accountable for it! Perhaps most of the higher authorities are only concerned about their share that they are to get out of the total budget.

Another example of lack of coordination between various departments is that many times roads are made, but the gutters remain unelevated and electricity and telephone pillars and trees remain there after road-widening. All these structures invite people for accidents with open hearts. This defeats the very purpose of road-construction. Even if these jobs are done later, it leaves an ugly and bumpy road. Lack of coordination is only one aspect of road making, one need not to say anything about the quality, life and maintenance of these roads. It is universally known.

It has been seen that engineers after joining the government jobs do not equip and upgrade themselves academically with newer technology. Even if they know, they don't bother or don't have the will and pressure to pursue it. They leave this job to their junior engineers, and they in turn to contractors who get the job done only according to their profit. One may ask these engineers whether they have the same attitude while making their own houses.

[II] State of roads:

While driving, you are not only supposed to manage the chaotic traffic, but simultaneously also to make your eyes vigilant or trained enough to see any potholes and open manhole on the road. To negotiate these potholes, a perfect Indian driver very soon adapts zigzag driving in a serpentine fashion that we often see in hurdle skiing. Potholes are the commonest cause of frequent lane-cutting in India. Remember that the driving pattern to overcome these potholes is different for four and two wheelers. It is advisable that the two wheeler drivers not to follow very closely to a four wheeler as a big pothole may appear suddenly making him take a somersault.

We should not underestimate the depth of potholes. They could be anything from a shallow pothole to a manhole, a ditch, a trench, a dug well that can accommodate anything from your leg to your car. Before making a daring attempt to cross it, I would like to remind you about the national policy for the people who fall in such holes [a sort of well]. I understand, that at present only those who fall in bore wells [i.e. those wells which snugly fit the body and require a parallel well to be dug



Don't be silly! Of course I saw the 'No Parking' sign. I didn't park it there. It fell in there.

for a rescue] comes under the 'national priority scheme', where you get all sorts of help, time, budget and compensation very promptly. It seeks attention right from the district authorities to national one and for the media, as per TRP it belongs to the news of the highest priority. However, if you fall in any of the above mentioned death trap, since it is not a national priority, you may not get any prompt help from the authorities. You are at the mercy of passers-by.

These poor road conditions are responsible for a considerable damage to vehicles also. These potholes and rough and uneven road surfaces can break the chassis of heavy vehicles and can affect suspensions, alignment or balance of the vehicles. In fact, within few months after the purchase of a new vehicle, many different sounds start coming from every corner of your vehicle that are difficult to suppress or silence and you may get the comment from your close one that it has become a khatara now. Besides, these bumpy roads are also responsible for many premature deliveries and abortions in India.

[III] Encroachments:

The two MOST important problems responsible for traffic congestion and also the MOST difficult for the government to tackle are the increased number of vehicles and that of road encroachments. The older roads, instead of widening with the demands of the traffic load, are being narrowed by the unauthorized encroachments. They affect a smooth flow of traffic and virtually cause an already congested road to choke. Various types of encroachments that I have seen are as follows:

[A] Illegal constructions and commercial activities: Today our country is at the top in the world as far as numbers of shops in a given area are concerned. There is one shop per 4-5 families in India, where as in European countries or even in Singapore [called shopper's paradise] it is one per 20-25 families. Thanks to district development authorities for achieving this record. Once a shop is opened an area double the size of the shop is grabbed outside the shop by putting articles and display boards. Beyond this the remaining space is utilized for parking the vehicles of customers. If it is a shop for eatables, may it be of modern fast food or old-fashioned samosa-kachoriwala, I am sure you do not require any description.

Except in some major cities, virtually there is no control of development authorities over the above. It is very easy to start commercial activity in residential areas or to make an unauthorized encroachment on roads without permission. There is no one to observe and object to it. If at all there is someone, he is easily 'manageable'. Although there

is a separate section in the district development authority whose only job is to check illegal constructions and encroachments, God knows what their eyes look at the whole day. They probably feel it is better to wait till the illegal construction is completed. The reason is that more unauthorized construction would mean a bigger 'deal'. In the course of the construction period they would also get a regular installment for keeping their eyes closely shut. After all, what will they get if they stop illegal work at its inception? They are like those clever fellows who let burglars steal and then catch them for money. In Uttar Pradesh a total of 55,775 constructions have been declared illegal [up to March 2009], however, despite the demolition orders, only in 1.3% cases [742] action has been taken so far. Even in these cases, the demolition is mainly confined to papers.

[B] Ramp culture: Unlike old houses, now people prefer to make very high platforms of their houses. These houses, like a slide, join the main road with a long and wide ramp occupying the 20-30% width of the road [the exact size depends upon the height of the house and nuisance value and clout of the owner]. People do not like to waste an inch of their land for constructing the ramp. Due to these ramps a relatively narrow track remains for vehicles to pass. The logic behind the high platform could be, in the event of sewer blockade or flood in the city, even if the whole city is submerged, their house is intact.

[C] In the name of religion: This is the safest and the surest way to capture government land, including roads. The government is also quite generous and does not mind it! One fine day an idol is kept on a small platform and after a few days a canopy is erected over this. This structure swells like a huge balloon. Within few years there starts a regular grand pooja grih and organization of a religious fair. The total number of places of worship (temples, mosques, churches, etc) is more than 24 lakhs and according to surveys this number is more than the combined numbers of schools, colleges and hospitals in India. I would like to know about any data showing that out of total number of shrines and temples constructed in recent years, how many of them are on private or on personal lands?

[D] In the name of greenery: This is a little polished way of encroachment on the road. If the government, keeping in mind the future load of traffic, happens to leave relatively more space on either side of the road, some of the residents occupy it. The colony people without realizing its importance, start making iron-cage like fences and plantation on it. The logic behind this shrewd fencing is that it is just to protect the plants from the cattle. We have hardly seen any one removing the

iron fences once the plants and trees grow tall enough. To top it all, on one fine day the actual boundary wall is demolished and a new one is constructed capturing that piece of road that was 'adopted in the name of plantation and beautification'. The colony people do not interfere in such encroachments for various reasons: they themselves intend to do so, do not want to sour their relations and do not dare due to occupiers' nuisance value.

[E] Temporary Occupiers: Vendors, hawkers, rickshaw-pullers, tempo-drivers, petty shopkeepers on pavements are some temporary occupiers who gather at places and corners where maximum customers and public movement are expected. They really make the situation worse in peak hours. Sometimes when you pass through the same road late at night, you feel surprised to see how wide the road actually is without this occupancy.

[IV] Poor Town Planning:

Except metro cities, in most of the cities town planning is on short-term basis and usually haphazard. A poor town planning, in places where the population density is not evenly distributed and without a proper road network, leads to chaotic traffic. It also creates problems regarding basic civic amenities, like water and electricity. When a city expands, instead of planning for a larger area simultaneously, only small colonies with corresponding smaller road networks are added to the outskirts of the city. But in a few years these colonies expand covering several kilometers beyond the starting point. The roads leading to them still remain narrow and tortuous. The same road that was leading to 50 houses initially now becomes the main road for the 500 houses without any parallel road network. Not only this, due to increased commercial value, more and more shops are being opened on this narrow and so-called main roads, thereby affecting traffic more adversely.

It may not be fair to blame a poor town planning in relation to areas and colonies that were established in the 50s and the 60s, when the number of vehicles was not a problem. But now we have a strong reason to blame the authorities for areas that had been established about 10-15 years ago i.e. even after the boom in vehicular traffic. It has been seen that if the township is developed by a government agency or by a relatively a big private group, then a better township is expected. If it is left to small private colonizers, they cannot afford a big investment and go for much smaller projects one by one, where compromises are made with road space, commercial and market space, parks and the community services.

[V] Traffic jams: Type I - spontaneous:

In India, on an average, we have to waste 2-3 hours in a week in traffic jams. If we talk in terms of money, in a single big or metro city each year on an average a 100 crore rupees go waste due to fuel losses. There is no need to calculate it for the whole country. Traffic jam is not unusual on busy roads, especially in peak hours of the day and with the passage of time it is going from bad to worse. As time is passing, this dragon that was confined to smaller roads of the city, has started crawling around the widest road of the city about which perhaps we did not expect five years ago. Sometimes the traffic jam is so severe that it requires hours to get rid of it. Those who suffer can really know how horrifying an experience it gives. In most of the cities and at most of the places it is common to find traffic running at the speed of 20 km/hr and that too turns into bumper to bumper traffic in the peak hours.

Above all, our clumsiness and derogatory and poor civic sense make the jam more horrible. None of us shows patience in these circumstances and everyone tries to cross the bottleneck first. You see, instead of the required one row, some people break the row and come forward to make a second row and some people go further to make a third row. In other words, virtually they occupy whole width of the road, leaving no space for the traffic that is supposed to come from the opposite side once the jam is cleared. Even if the cause of the jam is removed, traffic still cannot be resumed as no one likes to budge an inch. We feel insulted and it becomes a prestige issue for all, not to reverse the vehicle in such situations, no matter how long we have to wait. The situation at railway crossing barrier is equally deplorable. Here also you may see many rows of vehicles on either side of barriers as if they are preparing for kabaddi or mahabharat or just waiting for making gadar, once the barriers are lifted. This again causes an unnecessary delay in resuming a smooth traffic across the railway lines.

If you face the jam while going to office, you suffer a loss in your business while if you face it on returning home, you lose your personal time. In other words, the time that is really meant for the family. In big cities where even if there is no jam, routinely a considerable time every day is lost on roads owing to long distances. You can hardly afford to waste extra-time in a jam. Mainly due to jamophobia, your activities are limited only to a small area and you think twice to go to a distant place for any function, to meet relatives, to do shopping or to enjoy a special cuisine.

Besides increased number of vehicles and encroachments, there are several other common causes like erratic parking, work in progress,



The car driver? The traffic takes such a long time to move. The driver got tired and asked if he could go and have a cup of tea and come. I said O.K.

processions of religious and political parties, etc, that are responsible for the jam. Seasons of marriages take a heavy toll on commuters on roads. It is quite common that people dance on roads in Baarats causing a jam. In Delhi it is not unusual to have around 36,000 weddings on some auspicious day.

There are also a few advantages of traffic jam and traffic congestion, e.g. the chances of head-on collision and accidents are negligible. This probably explains the lowest death rate in road accidents in Kolkata among all metro cities [and probably also the reason for being the worst polluted city in India]. one doesn't know whether this is good or bad. Sometimes you make a good use of 'jam excuse' for convincing your wife or your boss when you turn up late. Some mobile companies even provide background sounds of traffic jam that help to convince a suspicious wife.

[VI] Traffic jams: Type II - Intentional Jams or bandh:

Road block or 'chakka jam' or 'rasta roko' is a powerful way of protest in India. In India there are two important areas for political somersaults. One is inside Parliament and State assemblies and the second is on the road. I may not be wrong in saying that the road to Parliament starts from the 'road' itself. Traffic jam is often used as a weapon by political parties to show their power or nuisance value. Besides political parties, there is an increasing tendency to use the traffic jam by the public also as an effective weapon to express their anger and demands. Traffic jam is now being considered a very effective key to any problem of any kind in the country. For example sometimes people cause road block for their demands like water, electricity, compensation for accidents, irregularities in exams, police enquiry in murder cases, etc. They do not prefer to do this in an open ground, instead, they prefer to show all this forcefully on road whether people are interested or not. The worrying thing about it is that the administration, which otherwise would not lend them a sympathetic ear, responds to their demands quickly to such a protest. That encourages others to follow the same. Nowadays there is mob culture i.e. the more the number of the protesters on the road, the more the chances that their demands would be met, doesn't matter whether they are genuine or not. Vehicles are forcefully obstructed by pelting stones and hitting the bonnets with sticks. They are not bothered at all whether a sick person is going to lose his life in the jam or someone is going to miss his exam or train due to jam. A seriously ill four year-old child died in Shimla [Sept. 2007] on the way as the ambulance got trapped in a traffic jam due to a bandh. Though the father ran towards hospital holding his son in arms, his only child succumbed to illness before reaching

the hospital. In similar situations a cardiac patient in Ambala and a burns victim in Kanpur died in the ambulances before reaching the hospital [August 2008] and a delivery occurred on the road in Patna. In all these cases the 'rasta roko' was caused by political parties.

The more worrying fact of this protest is that in recent times these protesters easily go uncontrolled and turn violent even on slightest provocations and indulge in loot and arson and do not even hesitate to seriously injure or kill others. People are injured or killed but no one can be held responsible in a mob fury as there is no punishment. So this encourages anti social elements. In recent times, the Gurjar Andolan of Rajasthan [2007-08] is a perfect example of violent demonstration where they not only caused extensive damage to the property but also torched police stations and caused the death of many policemen. In Dharmपुरi a few years ago a bus was set on fire by supporters of a political party causing deaths of 3 girls who were returning from a tour. Is it a democratic way of protest where inhuman and violent activities are indulged in? Probably this is the side-effect and misuse of democracy which gives us liberty of expression. Our democracy is very accommodating. This is really a sad aspect of the democracy.

It is a matter of great concern that political parties justify such jams. It is very disgraceful that in spite of a ban by the Supreme Court [1998], these bandhs are sometimes openly declared and sponsored by State Governments on whose shoulder lies the responsibility of proper execution of the law. Instead of going by the rule of law, State Governments do not bother or even ensure that traffic is disrupted totally during such bandhs. Now to whom should we complain about it or who is to blame? There is no real and straight answer except one, there is something rotten in the system. It would be very optimistic, if we expect a decent behaviour from the politicians on roads, who cannot behave properly even in Parliament or Assemblies, as many times the helpless Speaker of Parliament has to ask to stop recording to save the prestige of the highest House of the country.

The police in this situation remain mute or spectators. The reason being if any political worker among the protesters gets injured, all parties, like rainy frogs, unanimously make great hue and cry and get the concerned police officer suspended or transferred. A mad buffalo is dancing on the road and if you hit her with a stick on her buttock, immediately the Netaji would ask the police chief 'meri bhains ko danda kyon maara'. On the contrary, so many innocent people are killed in these incidents, but political parties hardly condemn it or ask for an enquiry. The court appears to be the only agency that seems to be interested. Besides

banning such jams, recently the Orissa High Court has given a historic decision in a case where a traffic jam caused the death of a 14 year-old boy. It asked the government to recover the compensation from the political party which sponsored and organized the bandh. In case the government fails to recover, then it itself should provide this compensation as it failed in its duty to clear the road at the time of the jam. In case students cause it, it should be endorsed in their character certificates, and compensation should be recovered from their parents and guardians. Supreme Court has also given a ruling in 1998 stating that no political party or organizations can resort to bandh, hartal or chakkajam under the guise of exercising their democratic right to express dissent. However, much would depend on the political will to implement it effectively and efficiently. I believe authorities should take an undertaking from the leaders who call the bandh and can be held responsible for damages and deaths. In every city, a place should be allotted for such activities and protests.

[VII] Stray animals on roads:

All kinds of stray animals can be seen on Indian roads. In the morning as well as evening you may see big groups of dairy animals. In such situations you have to go towards the extreme sides of the road to allow their parade to finish. Sometimes a buffalo that had just taken a black mud-bath wearing small pieces of pistia plants can suddenly spoil the dresses of pedestrians. Otherwise, the 'buffalo walk' is very cool with short and steady steps and it seems to be in no hurry. One or two fellows among the care takers of these cattle, walk behind them to collect the recently passed 'precious gobar' on roads, not because they believe in keeping the city clean, but because they really need it. If you are unlucky you may be forced to see a bull fight on roads or a bull chase for a cow in the mating season.

Another interesting animal on the road is the pig that is very dangerous for two wheeler riders. It jumps suddenly in front of your vehicle with such a perfect timing and force that you are led to think seriously that either it has a suicidal tendency or it wants to clear some accounts of your previous life. Another peculiarity of this animal is that it is 'accident proof'. After 'doing its job' in an accident, it swiftly disappears and you are left lying on the road, crying for help. In one of such incidents, one of my father's colleagues, one Mr. Chaddha on a dark night was coming fast on a bicycle down the hill from a railway flyover. Suddenly he had a severe jolt on the head and fell down. Later he realized that he was between the legs of a camel and some wooden object that was hanging down caused injury to his head. Similarly a 'cat walk' across the road is known to stop superstitious drivers more effectively than traffic police men.

One good thing about animal driven carts is that as I have observed, these animals carefully observe the surrounding traffic and obey the traffic rules and commands of their 'riders'. That obedience we sadly miss in 'motorized vehicle riders'.

[VIII] VIP movement:

At the time of VIP movements, all of a sudden the roads are sealed in the name of security causing traffic standstill. It is mainly a problem of capital cities. The roads that hardly can afford a few seconds' halt of the traffic are deserted for several minutes leading to great chaos and suffering to the public. Equal time is taken to get it cleared even after the road is reopened. During a visit, on seeing the deserted roads and city of Agra, USA President Bill Clinton asked whether this is 'a city of ghosts'? In other countries like USA or UK, even the movements of the top government officials causes less inconvenience to the public as compared to movements of lower cadre politicians in India. There are no guidelines as to who is a VIP and why he needs a security. The beneficiaries of this free security are mainly politicians. In my opinion the most eligible persons for security in India are the witnesses who testify against dreaded criminals, corrupt officials or politicians and thus help judiciary to arrive at the right decisions.

In a democratic and republican country like India, everyone is supposed to have equal rights to security. Any VIP enjoying the security by ignoring the safety of the people or by causing inconvenience to them cannot be justified. Just for information, only the SPG spends every year around Rs 200 crore of public money for causing inconvenience to the people only, needless to mention about the total expenditure on security by other agencies of Central and State governments.

[IX] Increasing level of roads: A threat to ecology:

Every time when the road is being made, its level is raised by several inches. Frequent road-making during the last 30-40 years has caused a significant increase in the level of roads in the cities. Thus the old residential areas by default are becoming more and more at a lower level. Now there is the compulsion for extra land filling for the every new house being constructed in the city. Supposing, the road level in the city is elevated by 2 feet, considering the fact that in an average Indian city the road area is about 15% of the total city, you can calculate how much soil would be needed for filling the rest of the 85% city areas. No need to say that this soil would be taken from the outskirts of the city that in addition to financial burden would also affect the ecology of that area. Of course, it will be spread over a long period, but it would affect us.



He knows, sir, you are a VIP and can't be stopped! But he says there is a VVIP around somewhere.

This elevation also causes difficulty and increased cost of maintenance of previously laid sewers and water supply. In old houses a reverse or down hill slope not only affects their surface drainage [as in rains] but also causes a reverse drainage due to choked sewer. Unlike others the owners of the old houses get frightened whenever they see that road is being resurfaced one more time in their area. Thus the importance of making a strong road that lasts for a longer time cannot be over-emphasized not only for economical reasons but also for preserving the ecology of that area. If at all, road-making is required, the same road building materials should be recycled.

[X] Pampering and discrimination among the roads:

In every city, roads where VIP movements occur or have the residence of senior officers, get a special attention and are made more frequently. The reason behind this drama is to show a good 'face value' of the city, and secondly, even a slight jerk in the spine of the VIP on the road might cause the suspension of the concerned official. Many times, just to consume the pending budget, they do a carpeting sort of road treatment for 'not so bad' roads in the city. Such unnecessary carpeting over a well-made road does not last long and gets de-gloved and detached very soon, making the road even worse than before. Sometimes when you find that a road is being made even during the night time, central channel is being painted, you may immediately guess that either some VIP is coming to your city or the budget is going to lapse the very next morning.

[XI] Water logging or Sewer Overflow:

Any thing from a puddle to a pond can be seen on roads just after rains. Depending on the severity of water stagnation, your area may look like Venice or a group of islands like that of Maldives. In such a situation in addition to vehicles, you also wish to have a small boat with you. In the city of Agra, right in front of the office of the Municipal Corporation, huge water collection during and after the rains is a regular feature every year. I have been observing this since my childhood till this day. Despite spending enormous amounts of money over the years to solve this problem, the fact today is that my daughter is enjoying the same scene over there and I believe with the tardy way in which such problems are tackled, my grandchildren probably would also enjoy the same.

Water is the third important enemy of bitumen roads [other two being human and heavy traffic]. Water destroys the road within a short time, no matter how strongly it was made. This causes a significant financial burden on road maintenance in urban areas. If water collection

is the cause for the road damage, unless we tackle it properly, every attempt at repair will go futile or waste. Mostly water-logging is due to poor drainage system of the area. In cities this problem is mainly due to the local residents who cover and encroach upon the open drainage channels running on either side of the road. We should realize that the proper drainage of water does not depend on the slope of the road surface but on proper slope of open or closed drains running on either side or underneath the road. We cannot make the slope of all roads of the city into one direction only [like that of a hilly town] on the contrary, it is the drains that have to be made so. Thus in the road it is the widthwise slope towards both sides rather than the lengthwise slope is important for preventing any water collection on roads. Unfortunately, when houses are constructed on either side of roads, people do not care for the sideways slope of roads and that are lost by making ramps and covering the side drains. As a result all the waste water gets collected in the middle of the road so that the road itself becomes a big drain. For intractable water-logging it is better to go for a cement concrete roads.

[XII] Road: As an ideal dust bin or garbage bin:

Indian roads play a great role in garbage collection of the city. If the road is a little wider at some place or escape encroachment by land grabbers, this area is converted for filth or garbage collection without putting a bin or containers. Due to the inefficient Municipal Corporation very soon heaps assume the dimensions of a hill of filth, over which cattle, dogs and pigs are found rummaging through it to extract some edibles. Litters and rubbish choke the drain. We are concerned only with the cleanliness of the 'interiors' of our houses and damn care for the real exterior outside our houses. We do not realize that everyone in the garbage cycle from its formation to its final disposal is responsible for maintaining its clean and safe disposal.

We often observe that people from the so-called civilized society can throw from their windows on moving vehicles anything anytime on any one. It is no surprise if an item, like plastic bottles, beer can, empty poly pack of wafers and juices strikes you like a bolt from the sky. If it is a bad day, you may be greeted with used baby pampers. It is really nasty and disgusting to see drivers opening car doors of a moving car to blow out pan masala or tobacco peek slobber.

[XIII] Road as a shelter for the poor and homeless:

One can imagine how unlucky are the pavement-dwellers in the world who spend their night on footpaths. Some of them are ill fated for whom footpaths become a graveyard, a deathbed by mad, errant, drunken

drivers. I am of the view that treating human beings like insects and vermin is the most heinous crime against humanity. We should have sympathy for them. There is a class that encroaches upon the road by making jhuggis and jhoparies. Considering their voting power, the government hesitates to remove them and frequently regularize their shelters. No one is against providing shelter to them, but it should not be done at the cost of the road size and civic facility of the area.

[XIV] Road for Relieving [kya? pressure aur kya]:

You may frequently find, people relieving themselves on road sides. Sometimes you find a group doing a number two job with gossiping on latest street politics. Both the relievers and passersby feel embarrassed, but it is irony that they have to compromise with it. What the relievers can really do is to cover their face to passersby as they know that their species is recognizable only by the face and not by the base. In India after many five years plans even in urban areas only 30% houses have access to sewer system. Perhaps India needs more people like Pathakji.

Chapter - 11

THE STORY OF PEDESTRIAN

[I] DEFINITION:

They vote, they contribute to revenue, they have equal rights on the road and equal right to government's budget for infrastructure, but what they get in return is thick smoke, splashes of mud and a threat to their lives. In the current stark socio-economic realities of India pedestrians, cyclists and other slow-moving non-motorized vehicles cannot be eliminated from the urban landscape.

[II] FACTS & PROBLEMS:

Pedestrian: The Most neglected road users: The government appears least concerned about pedestrians. All investment on town-planning and road infrastructure policies is basically focused on motor vehicles only. Any widening of roads is done at the cost of footpaths, pavements and service lanes, thereby eliminating the pedestrians' lane. As soon as the road is widened, it is filled up with various vehicles and the people on foot have hardly any space to walk on the road. Whatever pavements are left is occupied by illegal vendors, hawkers, sign boards, parked vehicles, squatters, ad infinitum. Pedestrians are forced to come on the road and share it with motorized vehicles. Their problems do not end here as the motor vehicle drivers look upon them as unwanted visitors in a function. Whenever a motor vehicle passes, it is the duty of the pedestrian to make way and a person walking on the road is hardly treated any better than an animal in the street. Some pedestrians who are brave enough can manage to walk, but the majority are forced to retreat to the footpath already ruined by motor vehicles.

In some commercial areas, frequently one has to zig-zag one's way by jumping over some shoe rack, underneath some paintings, through hanging night gowns and lingerie on the pavements. This experience is in no way less adventurous than that of the 'trekking through the dense forests of the Amazon'.

Pedestrians: The most disciplined road users: Unlike most drivers, they have patience and never show arrogance on the road. We have never heard of a case of pedestrian rage. Then why do these people become arrogant while sitting behind a wheel? Reasons probably could be: when

one is on foot he/she cannot proceed beyond his/her physical capacity for a long time. While the driver of a motor vehicle just has to press the accelerator a little to get the desired speed. Drivers feel safe as after any untoward incident they can easily run away from the scene. While for a pedestrian it is not always easy to move away from a crowded place.

Pedestrians: The Most vulnerable road users: People on foot are the most vulnerable to road traffic injuries. In case of accidents involving pedestrians and motorists, it is mostly the pedestrians who suffer. In cities, out of the total deaths caused by accidents, about 25% occur among pedestrians while on highways this proportion is about 35%. Pedestrians have two modes of injury. One is a direct impact on the body and second being run over by the same and other passing vehicles. The higher the opportunities for speeding on the roads the more are the chances of pedestrians' deaths in accidents. But this is of hardly any concern for owners of rich swanky cars, who just want to enjoy life in a top gear. If a speeding vehicle loses control in a congested or thickly populated area, pedestrians are the main sufferers.

Every one of us is an obligatory pedestrian: We all may own vehicles, but sometimes somewhere in our daily routine, we have to be pedestrians. For example, to catch a bus to work, walking from the parking area to office or market, for a morning walk, etc.

Pedestrian: Helpless but not necessarily poor: On the road they are helpless or at the mercy of vehicle drivers, but that does not mean that they all belong to a lower strata or cannot afford a vehicle. In fact, pedestrians come from all classes of socio-economic strata. When there is a long frustrating and suffocating traffic jam you sometimes wish you were on foot and could cross the jam and then take a bus home. It is indeed an irony that for many people, walking is the only means to commute even for very long distances.

[III] WHAT TO DO FOR PEDESTRIANS

[A] What to do as drivers:

(1) Respect pedestrians: Please don't drive your vehicle like a train, otherwise the mother would say to kid "look child, this is called a car but in no way it is different from a train, you have to cross the road only when it goes away from you". We should respect the rights of pedestrians and should allow them to cross the road at ease. In fact, the 'pedestrians' hand of request' should be given the same respect as that of a traffic policeman.

I would like to share my experience here during my first visit to Europe just to compare it with Delhi. In Lucerne, Switzerland, we were trying to cross the road. Having experienced Delhi traffic we were waiting to cross a road and were a little apprehensive. Seeing our confusion and fear, vehicles from both directions stopped and waited patiently till we crossed the road. Instead of staring at us [as happens in India] the drivers were smiling on our unnecessary panic and clumsiness. Later in other countries, we observed that even without the presence of a zebra crossing; drivers usually stopped their vehicles if they found someone waiting to cross the road.

(2) Don't Splash: On Indian roads water-logging is very common, especially during the monsoon. Some insensitive drivers just zoom past and splash muddy, dirty water on people standing, walking on roads, with no regrets whatsoever. I recall an incident when I was going to drop my daughter to school. A small boy who was just a few yards away from the school gate was badly splashed with mud by another car ahead of us. The poor child was so upset that he just stood there, not knowing whether to go back home or enter the school in such a condition. I could guess he neither had time to go back to home and change the uniform nor was he in a position to go to school in the same dirty uniform. I saw him standing there for quite some time in the rear view mirror and really felt very sorry for his predicament.

(3) The poor should be suitably compensated for: When we become part of an incident causing a financial burden to some poor commuters on road, e.g. rickshaw-pullers, labourers, cyclists or pedestrians, etc, we should always try to suitably compensate for them.

I remember an incident about 15 years ago when a rickshaw-puller suddenly took a U turn in front of my car and its rear wheel was badly damaged. He argued and asked me for compensation. I explained to him that it was his fault, so he should not expect anything from me. The poor man pulled his rickshaw off the road. Later I saw him pulling his rickshaw away from me on two wheels. Later, when I reached home and analyzed the incident as a whole, I realized that I had really made a mistake. Such people hardly earn Rs 50-60 a day. The repair of his rickshaw must have consumed his whole earning of the day. What saving he would have taken home? Since these people earn daily wages, I wondered whether his family had meals that evening or not. I began thinking whether the rickshaw belonged to him or he took it on rent. In that case he must have been scolded by his employer. Was he able to do his work the next day, and so on. On the contrary, I could easily have spared Rs 100 which would have helped him greatly. As far as that minor accident was concerned, we both never intended to harm anybody. I realized that

we should not go always with the logic, sometimes it is better to listen to your heart. Such people do not have any addresses, so that you cannot trace them later on to compensate or rectify your regret. We should not invite the curse of the poorest of the poor.

(4) Do not force non-motorized riders unnecessarily to slow down: For an example, if a rickshaw-puller is trying to get some priority at some point on the road, please don't discourage him on the only ground that a motorized vehicle has priority/right on the road. Just imagine after sweating a lot he has attained that speed and if you force him to stop, he has to again pedal hard to get the same speed and momentum. On the contrary, for motorized vehicle owners it is just a matter of pressing the accelerator for a second. So don't thrust yourself upon the poor rickshaw-pullers or cyclists unnecessarily.

One can find a difference between old cars on roads and new ones. When an old car is in the first lane on the highway, drivers of new cars honk to force it to the second lane as if the first lane belongs to them only.

[B] What the authorities should do:

Proper provision should be made to encourage walking and cycling. It should provide some convenient space for waiting and pedestrian crossings at short distances. They are relatively poor and not able to convey their voice to the policy-makers. If no investment can be made for them, at least the existing footpaths and pavements should not be compromised. If we do not provide proper facilities for walking, more and more people would be inclined to drive causing more traffic congestion.

[C] What to do as pedestrians:

(1) Pedestrians should realize that in the present scenario of haphazard traffic in India, they have to take due precautions for their own safety.

(2) Have patience while crossing a road. Sometimes at the same points on the road where you never had to wait more than a minute, it may require 10 minutes. So don't get impatient, instead cross only when the situation permits.

(3) Always try to make eye contact with the driver.

(4) Try to cross in an area of the road where drivers from both the directions can see you.

(5) Remember that reverse lane driving is very common, so rule out any vehicle coming from the wrong side.

(6) Please don't leave walking as walking plays an important role in good health.

[IV] ELDERLY PEDESTRIANS

In India 6.5% of total population belongs to older age group i.e. above 60 yrs. This is going to increase with time as life expectancy in India is increasing. Because of their physical condition, poor eyesight, prevailing chaotic traffic conditions, older people frequently prefer walking instead of driving vehicles.

Their physical limitations: They take more time to cross the road. Their reflexes are slow thus taking more time both for starting and stopping during the walk. This is mainly due to health problems like arthritis, poor vision, dementia where accurate decision-making is diminished. They may be having some problems like Parkinson's disease where there is tremulousness in the body or their gait is unsteady and one can take only small steps. A brisk walk may make them breathless as they frequently have some chest disease. An oncoming driver might anticipate that the pedestrian would have crossed the road by the time he reaches that point, but it may not be always the case for the elderly.

Effects of Injury: (1) Their tolerance to physical impact is very low. Even a collision with a bicycle can cause a fracture as their bones are fragile.

(2) Healing power in tissues is poor and wounds and fractures take longer to heal.

(3) Tolerance to any surgical procedure especially if done in emergency situations is also low.

(4) They cannot afford prolonged recumbency. The reason is that, besides the injured system or fracture the other systems or organs frequently starts getting affected. For example, if an elderly person is bed-ridden for fracture in leg, he is very prone to develop pneumonitis, intractable bed sore, cardiac or cerebro-vascular strokes, etc. It is not uncommon that an old person having a fracture may not die actually of fracture but due to some other secondary complications just mentioned.

Their Practical Problems: (1) They have no constant source of income and frequently survive on pension and interests on deposits. (2) They are frequently denied the benefits of medical insurance. (3) Most of them live in isolation.

What do they expect: That you consider or imagine them to be your parents who are crossing the road. If you start respecting them on road, then certainly others would follow you and in return your own parents somewhere would be given the same courtesy by some other persons. One indirect point that I would like to mention here, in spite

of the fact that these older people have so many problems, they are forced to live in isolation. There may be different reasons, being left alone by their children, children settled elsewhere, etc. Thus for even small daily needs, billing, medicine, etc they have no other options but to go out on roads whether or not their health permits it. I am basically hinting at the willful ignorance of the parents by their children who are actually capable of supporting them. I don't think there could be a bigger slap on the so-called 'modern or advanced society of India' where the government has been compelled to put a law in favour of old parents against their children to remind them of their duty forcefully through a bill called 'a maintenance and welfare of parents and senior citizens bill 2007'. Perhaps this small poem would better explain about their plight.

SOMEBODY'S MOTHER

Mary Dow Brine (1816-1913)

The woman was old and ragged and gray
And bent with the chill of the Winter's day.

The street was wet with a recent snow
And the woman's feet were aged and slow.

She stood at the crossing and waited long,
Alone, uncared for, amid the throng

Of human beings who passed her by
Nor heeded the glance of her anxious eyes.

Down the street, with laughter and shout,
Glad in the freedom of "school let out,"

Came the boys like a flock of sheep,
Hailing the snow piled white and deep.

Past the woman so old and gray
Hastened the children on their way.

Nor offered a helping hand to her
So meek, so timid, afraid to stir

Lest the carriage wheels or the horses' feet
Should crowd her down in the slippery street.

At last came one of the merry troop,
The gayest laddie of all the group;
He paused beside her and whispered low,
"I'll help you cross, if you wish to go."

Her aged hand on his strong young arm
She placed, and so, without hurt or harm,

He guided the trembling feet along,
Proud that his own were firm and strong.

Then back again to his friends he went,
His young heart happy and well content.

"She's somebody's mother, boys, you know,
For all she's aged and poor and slow,

"And I hope some fellow will lend a hand
To help my mother, you understand,

"If ever she's poor and old and gray,
When her own dear boy is far away."

And "somebody's mother" bowed low her head
In her home that night, and the prayer she said

Was "God be kind to the noble boy,
Who is somebody's son, and pride and joy!"

[V] CHILDREN AS PEDESTRIAN:

Children are more vulnerable and the least predictable pedestrians on roads as they often act impulsively on road without checking the traffic. Besides, their short stature limits them from seeing the traffic on road completely or to be seen by others.

1. Our children are tomorrow's drivers. Remember, if we do not respect other people's rights on the road and instead create a hostile environment on road, they will do the same. If children are allowed to grow in such an environment where there is no respect for pedestrians, they would feel that these four-wheeler owners have special powers. In future once they come behind the steering wheel, they will feel that now they have got the same special power on roads and would behave in the same manner.
2. Drivers should take extra care outside schools, near bus stops and parks and playgrounds.
3. While backing up the car always ensure that there is no one behind it before start and use horn for that. For this rely more on the rear window rather than mirrors.
4. While shopping or walking keep an eye on your children by holding their hand firmly.

Chapter - 12

HOW TO DECONGEST THE CITY [PART I]: MEASURES FOR VEHICULAR FACTORS

The measures that are required for reducing congestion and pollution in an urban area can be divided into two broad groups viz. [1] measures against vehicular factors and [2] measures for a better road infrastructure. In this chapter I will discuss how to control vehicular factors.

The vehicular measures are directed mainly towards reducing the number of vehicles on roads. This can be achieved either by measures to discourage or by putting a check on its sale or elimination of unfit vehicles from roads. Temporary reduction in the number of vehicles on roads in day time can be achieved by such measures as would minimize unnecessary use of personal vehicles. As for control over pollution, any measure that is targetted for vehicular number, for its fuel efficiency or for a better infrastructure will also help in reducing pollution.

[I] BETTER MASS TRANSIT SYSTEM

A better public transportation system is extremely important both on highways and in the city. A cost effective, safe bus service and other means like metro rail would be extremely helpful for minimizing several traffic-related hazards on roads. If this service is really comfortable with sufficient frequency then more and more people having personal two or four-wheelers would be inclined to use it. Due to increased running cost, traffic congestion, jams and parking problems, people from all classes are desperately looking forward to a good alternative. It needs to be discussed in greater detail.

(1) The ground reality today: If we consider urban traffic, this has been universally accepted and realized world wide that buses and other means of mass public transport are very effective measures for reducing traffic congestion, so much so that it is being considered equally or rather more important than the road infrastructure. Even in the most developed countries an enormous amount of money on infrastructures [roads and flyovers] has failed to bring the desired results in reducing pollution and the traffic congestion. The fact is that in many developed countries, the governments are fed up with keeping the pace of road infrastructure with that of traffic load. These measures for road infrastructure though improve

traffic conditions, but that lasts only for a short time and conditions deteriorate rapidly due to very fast growth of the city. The same have also been noticed In India. You have a very speedy ride on the flyover that has just been inaugurated, but very soon you see the traffic crawling there. In the most privileged city of India i.e. Delhi every 10 years the number of vehicles is increasing six times more than the growth of road infrastructure in the same duration. It is really very tough now to keep pace in terms of roads along with that of traffic load. So now even those countries which can very well afford better roads infrastructure, instead of going for more roads and flyovers, are thinking and giving more stress to alternative plan in terms of mass transport.

(2) The present status of this service:

[a] Inside the city: At present city buses constitute less than 1% [0.2-0.8% among different cities] of the total vehicles in the city. The city bus service is doing well mainly in metro cities where it represents up to 4-5% of total vehicles and carries 40-60% of total number of passengers of the city. Of the remaining people of the metro, 20% use personal vehicles [two or four-wheelers] and the rest use autorickshaw, tempo, cycle-rickshaw, bicycle, or walk to commute. However, if we consider the bus service in smaller cities, it is virtually non-existent in most. In smaller cities people move mainly by personal vehicles and by the other means mentioned above. The irony about the personal vehicles is that they carry only about 20% of the public, but occupy the 80-90% road space. Another unfortunate fact is that at present owing to poor road infrastructure, in most of the routes in most of the small cities, the conditions are not adequate for the city buses. Thus there is a strong justification to motivate and facilitate the personal vehicle users to shift towards mass transportation means.

What proportion of the total commuters should travel by MTS, depends mainly on the population of that city. For example, in a city having a population between 5-10 lakhs about 40-50% of commuters should use MTS. While on the other hand, for a city having population above 50 lakhs it is expected that 70-85% of public should use it if congestion is to be avoided. In a small city, a mass public transport system mainly means a city bus while in metro cities a local train, metro rail and mono rail are the other options in addition to buses.

[b] Outside the city: The condition of the bus service of State roadways or State road transport corporations, in most of the States, is deteriorating with the passage of time. Instead of getting upgraded due to increased passenger load, deterioration in such an important service

merely shows how neglected this department is. During the last 30 years, the contribution of the State-run bus service has dropped to one-third [from 45.4% in 1976 to 17.5% in 2006] while the population during this period has become almost double [54 crore in 1971 to 111 crore in 2008]. Both the Union and State governments have now reduced the funding of roadways. The governments now strongly feel that service should be privatized. This is the latest philosophy or concept in the government that, if any corporation becomes a non-profit-making one, just privatize it. However, I believe that there are some services like public transport and health care that really need to be run by the government only.

Privatization of any sector or service shows an open acceptance by the government that it has failed in its duty to properly use its resources and manpower and most importantly to control corruption in that particular sector. Instead of finding a solution to it, privatizing a corporation that is really very important for the poor and lower middle class population, betrays an escapism from the problem. If gradually all government industries and corporations are privatized or disinvested, the job of government would be confined only to collecting revenue and taxes. In my view privatization of a service may be acceptable if it is meant for a upper or upper middle class only. Nobody would mind if the government privatizes its airline, but certainly yes, if it privatizes its rural or city bus service.

Experts on this subject think that if run properly, there is no reason why the State-owned bus service should suffer losses. In fact, there are many examples that show that it is fetching profit. The bus service of Indore is a good example of this venture.

(3) How MTS helps: The advantages of this service both in and outside the city are many:

(a) Reduction of accidents: Major potential victims of the accidents [two-wheelers, cyclists, pedestrians] are shifted to a safe metallic box i.e. bus.

(b) It will make the traffic smoother by reducing congestion. Studies have shown that on an average the road space occupied by the bus in terms of per passenger is 10 times less than the personal or private vehicles on the road.

(c) It helps to check pollution e.g. in Delhi the public transport vehicle, that carries 60% of its commuters, is responsible only for 20% of the total pollution there.

(d) Less wastage of automobile fuel will save not only public money but also government's money given as a subsidy on petroleum products.

(e) To catch a bus while going out or returning home you have to do some walking which helps to keep you fit.

(4) Government-owned transportation is safer: Travelling in bus is considered to be safer than other modes available provided this sector is being run by the government or by a reliable organization. The reason why government-owned transportation is safer is the 'trip factor'. There are many private transport vehicles for the public that run either in the city or on outskirts of the city e.g. buses, mini buses, tempo, unauthorized jeeps [autorickshaw also comes in this category]. In order to make more money they all try to make more and more trips. They believe only in the numbers game. To fulfill this basic aim, they drive very dangerously, ignoring all traffic rules. Their masters also give incentives to drivers for doing more business. For this, they not only compete with government-owned vehicles but also with each other to grab more passengers and money. This tendency is not seen in government vehicles as its drivers do not have a psychological pressure for risk-taking or dangerous driving. This could be the reason why blue line buses kill more people than the government-owned buses in Delhi.

At present by checking fitness of the drivers and vehicles, the government is trying its best to reduce the number of deaths by the private buses. Again, it is apparent that it is not the problem of the hardware but of the software programming in brain of the private vehicle drivers. Another reason against private buses is that they do not stick to time schedule, stop anywhere to drop or pick up passengers, do overloading, not giving any concession to disabled passengers or students, poor maintenance of vehicles and poor behavior of their staff. This probably explains the reason why in and around the city, mass transportation facility should be provided by the government.

(5) It is affordable to all: Why?

[a] In context with Roadways: Social and economic inequality is a great problem in our country. A wide disparity in economic status among our countrymen exists. In other words, their paying capacity for travelling varies very widely. On one hand, there are people who can afford any fare according to their needs, comfort and safety. On the other hand, there are extremely poor persons whose only priority is the cheapest fare for their destination. They cannot afford any extra money in the name of comfort or safety. In the poor category there are further 3-4 sub-divisions, and depending on their earning they use bus, mini bus, truck, tractor, unauthorized jeeps, tempo, cycles, animal-drawn carts or walking. Although many of these poor people can afford a safer option of roadways buses,

often there is no bus for the required destination or the frequency is inadequate compelling people to travel by these dangerous private vehicles. It is this segment which really requires help from the government.

The State Government should provide transportation service to the poor category as a minimum profit-making business, considering it as a commitment to social justice. This would not only save this group from the clutches of these dangerous jeeps but also ensure the safety of other commuters on highways. Simply banning such unsafe unauthorized vehicles would not serve the purpose. Instead, the government has to address real problems and provide a solution.

[b] In the context of city buses: A similar situation prevails in city bus service. There is an extremely poor class in the city that has only one means of transport i.e. bus. For example, daily wages workers, labourers and domestic helps who hardly get Rs 50-100 a day and just can't afford other means even for a few days a month. Every single rupee matters to them. I think, it is politically also correct to say that maximum voters belong to this category.

(6) It should also be subsidized: To provide this service at an affordable rate is not an easy task for the Corporation. The government should provide some kind of subsidy and special concessions to this class. If we consider the advantages of this subsidy i.e. the number of lives that we would save especially of relatively poor vulnerable road users who are facing maximum deaths on roads and reduction in pollution and traffic congestion, it is quite justified to give some kind of subsidy to it. In no other traffic plans we would be able to get such cost effective results in such terms.

I strongly believe that among the two basic kinds of subsidies i.e. subsidy on a service and subsidy on some commodities, the subsidy on a service like travelling has fewer chances of being misused by the public. In a true sense, it would be enjoyed by the lower and middle class people. The poor fellows who use it would use it only to an extent that is required by them, in other words it is not as if the same person would start making more trips on roads because it is subsidized or cheaper. Similarly, don't expect that a person using a luxury car would come and sit in the bus just on the grounds of economy. On the contrary, if you give the subsidy to some commodity, then it is quite possible that a significant part may be used by the rich or lead to corruption. People would have a tendency to stock it more than what is required. I can give some examples that would help to understand how the subsidy given for service is more useful for the target groups. If Railways slash fares of a general coach, a person of AC category would not be motivated

for a general coach; instead a poor person would be benefited. If you reduce the fee in government schools this would not motivate the rich to shift their children from public schools to government ones.

(7) It should have more categories: Considering the need of the middle and upper class people there is need for more than one category of bus service. A better service in terms of comfort and speed, not necessarily subsidized, is necessary for that section. For example, in trains there are many categories ranging from first AC to general compartment. We see that all kinds of classes in trains are always in great demand. Similar categorization is also desired on roads. The rich believe in safe and comfortable travelling while the poor opt for the cheapest transport.

(8) Change in tax regime: At present the government is levying a higher road tax on buses as compared to personal four-wheelers, e.g. in Delhi the average tax in a year for a car costing about Rs 4 lakhs comes to Rs 500/year. While for the city bus this tax comes to Rs 13000/year, i.e. 26 times. This tax policy is more or less similar in most of the States. In this way, it discourages the bus system. This is inconsistent that cars occupy more road space [in terms of area occupied vs. total passengers carried] and pay less tax. I suggest that all such taxes including excise and others should be kept to the minimum for buses. Similarly, regarding the bus fare the State governments take more than 20% of the bus fare as passenger tax that needs to be reduced.

(9) Learn a lesson from Indian railways: At one time the Indian Railways was declared a 'business of losses' by the Rakesh Mohan Committee, but now the same Railways for the last few years has not only been making profits [Rs 20,000 crore in 2007] but is also able to reduce the fare. This is despite a fact that out of total number of passengers only 10-15% travel by trains while the rest use roads for travelling. The length of National and State highways together is three times more than the total length of the Railway network and the government is spending several thousand crore on road-making. But in return except for some octroi on highways [that too goes into the pocket of the company responsible for its maintenance] we get nothing through its roadways bus service. Thus there is still a good potential in the Roadways sector.

One more important point worth mentioning here is that in Railways, it is the freight carriage that contributes mainly towards its profit [about 65%]. If the government uses the road network for running its own goods transportation service [as it carries 60-65% of Indian freight] that will not only enhance the amount of profit but also make better use of the same manpower of the Roadways department. This would not only make this

department financially stable but also help in controlling the most vital problem of road traffic i.e. accidents. How? On highways trucks have been found to be the impacting vehicle in 65% of accidents. In the chapter of road accidents [under section 'some good and bad things about truck drivers'] I have analysed this fact in detail. There you can see, once these truck drivers start working under a big organization, it might help in correcting many indirect factors responsible for this high incidence of accidents. At present when the government is adopting a policy of disinvestment and privatization of various sectors and services that are no longer profitable, to suggest this may appear odd or a poor joke.

(10) Public transport vehicle should get priority over others:

Those vehicles that carry a good many passengers, e.g. buses should be given priority over other vehicles on the road. In many countries, there are separate lanes for buses and they also get priority at traffic signals. This rapid transportation of people can further be increased by increasing the capacity of the existing bus system. Recently, a high capacity bus system [HCBS] or Bus rapid transport project [BRT] has been introduced in Delhi as an effective way [as claimed by the government] to check congestion on roads. When people see the difference, how fast and comfortable the BRT is, they could be dissuaded from using personal vehicles. Here all the buses ply on a dedicated lane and there will be no criss-crossing in lanes by cars and two-wheelers. However, it is possible only in a well-planned city where there is extra space available throughout the route [without a break or bottleneck] that can be devoted to this rapid transit system without compromising space for the remaining traffic. Even this separate bus lane itself should be wide enough so that if one bus has some fault, then the other can overtake it without causing a traffic jam. However, regarding the usefulness of the bus rapid transport system of Delhi there are mixed reactions from the public. Therefore before using it in other cities, its results must be analyzed properly, made public and if found suitable as well as profitable it should be put into practice.

How does a check on personal four-wheelers help to decongest roads?

While targeting a reduction in the vehicles on the roads, a check on personal four-wheelers would yield better results because: [1] the proportion of space occupied by personal four wheelers on the road vs. person carried inside is very poor [2] One personal four-wheeler almost occupies one lane [3] It is a common cause for precipitating a traffic gridlocks or jams.

Example: Here we take an example of a road where the maximum speed that is allowed is 30km/hr. Now we would try to get an answer to the question as to how many four-wheelers can be accommodated



safely in one lane of a one kilometer stretch of this road in this given speed limit of 30 km/hr. The answer would depend on two factors, viz. size of the particular four wheelers [mainly the length] and the minimum safe distance that has to be maintained between the two four-wheelers without increasing unnecessary risk of collision. According to a simple formula, if you are driving at a speed of 'x' km/hr then you should maintain a distance of at least 'x'/3 meters [or 'x' feet]. In this particular example, this would come to 30/3 or 10 meters. Now if this is a case of small cars, the length or segment of one lane that would be occupied by one car would be 13 meters [where 3 meters is length of the car and 10 meters is the minimum safe distance between the two cars]. Thus on a one km stretch of a lane, the maximum number of such small cars [running at the speed of 30 km/hr] that can be accommodated safely would be $1000\text{mt}/13\text{mt} = 77$. Suppose, it is a car of bigger segment having a length of 4.5 meters, the maximum number of such cars that can be accommodated safely would be $1000\text{mt}/14.5\text{mt} = 69$ cars. Now suppose, it is a bus having a length of 9 meters, then the maximum number of such buses that can be accommodated safely would be $1000\text{mt}/19\text{mt} = 52.6$ buses.

Interpretations: 1. Here we see that in addition to the size of the vehicle the safe distance that has to be maintained between two vehicles, is equally or rather more important that determines the number of vehicles that can be accommodated safely in a particular stretch of a road lane. Here you see that the same 1 km stretch that accommodates 77 small cars, if replaced by buses having a size three times that of a small car, can still accommodate 52.6 buses. If we count the number of passengers carried in these vehicles, we find that in the case of a small car having a seating capacity of four a total of $77 \times 4 = 308$ persons can be carried while in the case of a bus having a seating capacity of 52 a total of $52 \times 52.6 = 2735$ persons [i.e. 9 times] can be transported. Practically speaking, it is much more than this figure of '9 times' as cars are on an average half occupied while the city buses frequently carry double the passengers of their capacity.

2. An increase in number of four-wheelers in the same stretch of single lane affects the average speed of all vehicles much more adversely than we usually expect. With the same example we would see how this happens. In a case where 77 small cars are running in a 1000 meters stretch at 30 km/hr, out of the total 1000 meters, 231 meters is occupied by the vehicle themselves while the 769 meters is the total inter-vehicular space that has to be shared and maintained between these cars to prevent collision [that comes $769/77$ or approx. 10 meters for an individual car].

Suppose, the number of small cars is increased to its double [i.e.154 in 1000 meters stretch], now out of total 1000 meters, 462 meters would be occupied by the cars [$154 \times 3\text{m} = 462$] while the total inter-vehicular space left now would be about 538 meters. In other words, the average space between the two cars would now become $538/154 = 3.5$ meters. So the maximum speed the cars now can have in this given 3.5 meters space would be $3.5 \times 3 = 10.5$ km/hr [average safe speed (in km/hrs) = minimum safe distance [in meters] \times 3]. Thus we see in case the vehicles get doubled in one lane the average speed instead of getting halved as we expect, becomes one third of the initial.

3. The width of a four wheeler does not affect much so far as the speed and number of vehicles to be accommodated in a particular stretch is concerned. Yes, a vehicle having more width can accommodate more persons.

[II] CYCLING AND WALKING

It is true that owing to the risk of heavy traffic on roads, we hesitate to go by walking or cycling. However, for some small jobs in the same locality, where traffic is not that busy, we can walk or can go by cycle. Sometimes, because of congestion and parking problems, you find that going by a car may take more time as compared to a cycle. Considering the problems of constant traffic jam and increasing fuel cost, I think, within a decade or so every one of us would have to keep a cycle in our house as an optional vehicle, whether or not we are willing to have. In many countries, there is provision for separate lanes for cycles. That increases its safety and thus encourages people to use bicycles.

Do we know how many health problems are being caused by our sedentary lifestyle or lack of activity? According to a WHO report Indians are paying Rs 40,000 crore every year for their lack of activity and improper diet and with every passing year this is increasing by Rs 20,000 crore. The incidence of deaths related to cardiac disorders and diabetes in India has increased to the extent of an epidemic and is responsible for the maximum cases all over the world. If we consider the growth of drug turnover as an indirect indicator, we find that every year there is about 40% rise in demand for anti-diabetic and anti-hypertensive drugs. Just the sale of drugs for these two diseases alone is more than Rs 1,000 crore in a year. If you include the total cost of the treatment [consultations, investigations, hospital care, etc] you would realize that a big share of total earnings of Indian patients is being consumed by these two diseases only. The more alarming sign is that even in the adolescent group the incidence of obesity, diabetes and hypertension has

gone up to 14%.

Now we can easily see that some 'purposeful' walking or cycling for our daily routine work not only makes traffic convenient, but also pays a lot for your health in future. Our colleagues who did not follow this principle might develop one of the above mentioned diseases or get overweight and would be forced by the physician to go for some hard physical activity. You may spot them walking without a break in winter at five in the morning wearing monkey caps and with canes to scare away dogs. The reason is that the motivation 'force' behind them is their wives who take the advantage of their past experience of sending the stubborn children to school in the morning. Now for fitness they will have to do all purposeless physical activities not only to burn calories but also burn their money and valuable time. Thus you can realize how effectively some purposeful walking reduces the burden of many purposeless physical activities imposed on you later in life.

[III] NEED FOR BETTER TECHNOLOGY

Most of the automobile companies, although working globally, have double standards. They do not launch vehicles of latest Euro standards or fuel efficient vehicles simultaneously in developed as well as in developing countries. It has been seen that India and Asia are lagging far behind by a long time in getting it. Nowadays in India we are enjoying almost all the latest or world-class technologies in every field. Then why do we lag behind with respect to automobiles? In general, the present Indian vehicles are less fuel-efficient and much more polluting than their counterparts in developed countries. In India the bureau of energy efficiency under energy conservation act has proposed norms on fuel efficiency that has been based on the weight of vehicles. When the bureau tested the present Indian vehicles on road for their fuel efficiency, only 40% of small cars [965-1080 kg] and 25-30% of mid-segment cars [965-1530 kg] could pass the test. It's very shocking that none of the bigger segment cars [above 1980 kg] including the SUVs, could clear the test. Both petrol and diesel vehicles performed badly in the fuel efficiency test. It is interesting to note that these are the results after relaxation in norms.

In developing countries pricing comes first over the other priorities and commitments. This is the plea that companies often use to convince us. Is it really so? We, the customers, if asked to choose the priority among the three features of vehicles viz: luxury, safety and environment-friendliness, most of us would choose luxury first, safety second and environmental as third. Is it right? Companies also play with the same psychology that out of two additions in cars i.e. environmental friendly and luxury friendly, it is the luxury-friendly addition that is more convincing

to customers. It is easier to impress customers by adding some other luxury features to cars in the same budget than adding some environmental-friendly technology. It is also a fact that luxury addition is the demand from the customers while the environmental-friendly addition is the demand either from the government or from some so-called environmental activists who are thought to be a hurdle for any industry. The attitude of the company is, 'in India who cares for rules'. So they try their best to sell as long as possible and if some uncontrollable situation or pressure comes, they would see to it. Why bother at outset? 'Sab theek ho jata hai' is the guiding principle.

The government is planning to impose a tax in addition to excise tax on these fuel-inefficient vehicles. Depending upon fuel efficiency it will range from 8-25% [Those vehicles having fuel efficiency more than 90% will be spared]. Why are these companies so reluctant about the fuel efficiency and it is equally surprising why the government is so lenient to these companies. For example, as per the standards prescribed by the government of India, the Indian diesel vehicles of Euro-3 are legally entitled to emit three times more nitrous oxide as compared to European standards. I don't even understand the concept of allowing fuel inefficient vehicles to run in India after imposing an extra tax on these. If something has been found hazardous for human health in other parts in world, how could it be safe for Indians? What does it show? If some medicine has been found harmful or is banned in other countries, will the government allow it for Indians after imposing some extra tax? It is a clever use of 'concerns for health' for revenue generation.

[IV] CURB MISUSE OF SUBSIDY ESPECIALLY FOR DIESEL

The number of diesel vehicles, especially the diesel based cars, both in the small and large segment, is increasing every year by approximately 100%. The detailed statistical data have already been discussed in chapter 8 [vehicles on road] under section pollution. Why are these diesel cars increasing in numbers? The main reason is that diesel is more subsidized than petrol. People get back easily the premium or the extra cost given for it. Needless to say that the government has to bear heavy losses for this. In other words, the subsidy given for the diesel is being used for 'luxury'. This in a true sense is the misuse of the subsidy. The provision for subsidy is acceptable if it is utilized in mass transportation vehicles like buses and trucks and to some extent in the case of taxis, where this can help to check inflation. However, if this is a case of personal cars or SUVs, this would certainly be called the luxurious use of the subsidy. It is not only the question of heavy losses to the government only, but also the question of public health

as relatively more deadly diesel is being consumed to spew toxic fumes over pedestrians and two-wheelers. In this regard the government has recently in 2008 imposed an additional excise tax [Rs 15000 to 20000] on SUVs, MUVs and luxury cars above 1500 cc capacity. Though this will certainly increase the government's revenue, but, we have to wait to see whether it would curb the misuse of diesel subsidy effectively.

[V] WITHDRAW OLD OR POLLUTING VEHICLES

Old vehicles are more polluting and carry more risk of accidents. Although there are strict laws and provisions for penalty for the polluting vehicle, we hardly see their implementation in Indian cities except in metros. Commercial vehicle owners have been found to be more reluctant in this respect. But there should be universal and strict criteria to define the road life of vehicles. While deciding road life, we should also take into consideration facts like, commercial or personal vehicles and run on petrol or diesel, etc. Vehicles after this period should be removed at least from urban areas. Even vehicles fulfilling the pollution criteria are found safe for travelling, they should be allowed only on the outskirts of the city or in rural areas.

[VI] DISCOURAGE PERSONAL VEHICLES IN CONGESTED AREAS

This can be done in two ways: [1] Congestion Charges - In some cities and countries [London, Singapore] this is already in practice. Congestion charges are claimed by [a] The help of an electronic device fitted in the vehicle. When it passes through congested zones, it is sensed by the roadside equipment in this area. [b] Taking the photograph of number plates while entering these zones. In both the cases the information is passed on to the RTO and the dues are claimed through a letter. In some areas, the congestion charges are taken only during peak hours or charges may be kept high for peak hours. [2] Use a separate transport system in congested zones that is non-polluting or non-motorized, e.g. Cycle Rickshaw.

[VII] INCOME TAX

You may be surprised how tax and traffic decongestion are related. Income-tax can play a great role in decongesting the traffic. But at present it is not playing its role as effectively as expected. It is quite possible that a person may be having many cars in his own name or by proxy, but may not be a tax-payer or a PAN card holder. People go to showrooms and make cash-down payments of several lakhs to purchase vehicles. Bribing by gift of some expensive cars on Diwali day or New Year day is quite common by high profile dealers for getting their illegal jobs done. It is frequent to see in a tax raid, tax-officers find 2-3 vehicles parked

in the premises, but surprisingly, the owners of the houses say that these vehicles do not belong to them. If the tax department wishes, it can take away these vehicles. This is despite the fact that the glove compartment of the car has receipts of all services and insurances charges in the owner's name.

Targeting the people of this class who are having many cars in their houses just for luxury without a genuine need and probably through the income earned without paying tax is extremely necessary. Sometimes, the Income-tax department sends letters of enquiry to car owners with the policy that those who respond are to be grilled. The respondents then feel like 'Aa bail mujhe maar,'(inviting the ox to hit you) while for those who ignore it, no more further enquiry is made. While sending these letters to only those car buyers who are living in the same city are chosen for the enquiry as pursuing those who are living in some other cities is considered a futile exercise as the revenue, if it comes, will increase the collection of other tax region only.

Every year 15,51,880 cars are sold in India. I want to know from what percentage of buyers the tax department is really able to make a genuine inquiry to find out whether or not these buyers are income-tax payers. Is the number of tax-payers increasing with that of increase in the number of the cars on Indian roads or with the growth or turnover of the automobile sector? I don't think so as in India only 3 crore people pay income-tax and their number is increasing with every year by 3% only. [as from 28.4 million in 2002 to 31.5 million in 2006]. Out of these three crore tax-payers, in only 1.35 lakhs of cases the annual income is more than 10 lakhs. Considering the present tax limits, most of car owners should fall within the tax net.

In the Income-tax department either there is a shortage of manpower or lack of will. As far as lack of will is concerned, it is very unusual for someone to say no to 'Laxmi'. So I believe the former reason must be the correct one. I would like to emphasize the importance of manpower with an example. As doctors working in an intensive care unit, we use several monitors to get the vital information regarding various body systems of critically ill patients. This information is very well shown on monitors and in addition to it there are alarms for our attention. But all these monitors will be of no use if there is no competent and vigilant doctor who can not only pick up and interpret this information but can also react accordingly to save the life of the patient. Similarly, in Income-tax dept, there is no dearth of information but probably of manpower only. In an era of information technology, effective means are available to get the desired information against any tax evasion. In fact all information

is only a few clicks away on their computers, but this vast store of information on the computer is of no use unless of course it is utilized. It is true that a machine cannot replace a man howsoever advanced the technology may be.

Here's a Tip: Cars should be sold by a company only to those who produce a PAN card, or a copy of tax returns filed. This number should also be mentioned on registration papers. It should be mandatory for the local car Showroom of Company or RTO department to send information regularly to the income-tax office. Besides, it should be made compulsory to keep copies of the last returns filed along with other necessary papers with the vehicles. The Income-tax people like traffic police should make a random checking on roads just to confirm whether copies of the last returns filed is there in the car and also whether the same PAN as mentioned in the original registration paper. Secondly, it should be made compulsory that vehicles be registered only in the city that has been mentioned in tax returns. That will ensure whether owners actually belong professionally to the same city or not. It has been found that people instead of registering in the city from where they have purchased vehicles, go to other cities either to save road tax or for some other reason. Now with this new rule most of the vehicles would be confined to the same area. Thus the town planner can actually know how many vehicles are running in the city while going for reforms in infrastructure for the betterment of the city traffic.

Every law has some flaws. So we have to be prepared for that. [1] Because it is possible after filing a single tax returns in that particular year in which the vehicle was purchased, the person may disappear. Random checking on the road will ensure that they regularly pay the tax. [2] PAN number should also be mandatory for the person who takes a second-hand vehicle, otherwise he may buy on someone else's behalf and soon after this he would get it transferred in his name. [3] At present those who have income from agriculture are exempted from tax liability. People may misuse this provision. If they purchase personal four-wheelers or SUVs, this itself indicates that they are not poor and should not be considered eligible for exemption.

I assume that some day a law would be enforced where fast moving cars on roads will be looked at by Income-tax people just as some fishermen see moving fleshy fishes in a pond. However, under the prevailing circumstances, it is a far off dream.

[VIII] INCREASE POWER PRODUCTION

An adequate power supply would cause lesser consumption of

diesel for power generation [personal, in commercial markets, industrial, etc], thereby reducing pollution. A huge amount of diesel is being used for keeping the malls or commercial complexes air-conditioned which is another example of luxurious use of the subsidy. To discourage such use of subsidized diesel, the government has proposed to fix a different price rate and colour for diesel being used for this purpose. However, unlike diesel cars, the use of diesel for power generation is not a preferred choice for the users. The cost of power by using diesel is 4-5 times greater than the power we are getting. Since the government has failed to provide a proper supply of power, people have no choice but to go for this costlier option. If hundreds of workers are sitting idle in a factory owing to power shut down, what choice the factory owners have to deal with it except using diesel? So, unless the government targets the root cause of the problem, I don't think that different price structures for diesel are going to solve the problem. It will just open one more front for corruption.

Similarly, adequate power generation will also favour electrification of Railways thereby reducing its consumption of diesel [227 crore liters per year]

[IX] ENCOURAGE NON-POLLUTING OR ALTERNATIVE FUEL

(a) Compressed natural gas [CNG]: The government has started making it compulsory to convert diesel vehicles into CNG in an attempt to minimize pollution. CNG does not contain toxic PAHs or SO₂ and it runs more quietly producing lesser vibration. Its main disadvantages are its short supply, a high vehicle cost, requires a distribution system, shorter driving range and a heavy fuel tank. It is interesting to note that the drive for CNG conversion is confined only to commercial vehicles for public transportation like buses, taxis, and autorickshaws and that too in some selected cities. In most of Indian cities the number of such vehicles is around 3-4%. On the other hand, a rapid rise of personal diesel and petrol vehicles are nullifying the advantages of the government's drive for CNG conversion. Thus we see that practically pollution is caused mainly by private vehicles [80% of total]. The big question is why the government is hesitant to pressurize personal vehicle owners for CNG conversion. Is it really the shortage of alternative fuel, lack of will or fear of boomerang effect of this drive like that of MCD demolition case?

(b) Liquid Petroleum Gas [LPG]: The government has allowed the use of liquid petroleum gas as fuel in vehicles. It is better to go for a company-fitted kit instead of local available kits that may not be fire or leak proof. As regards fuel economy, CNG is cheaper than LPG. Since the availability of CNG is a problem, in the near future more LPG-

based vehicles are expected to run on roads. Both LPG and CNG-based two wheelers have also been launched recently in the market. Although gas-based vehicles have been found to be as safe as petrol or diesel one. However, it is a matter of investigation whether this is true in cases of accidents also? Are the gas-based vehicles more prone to catching fire at the time of an accident?

(c) Battery-powered or electric Car: Now battery operated four and two wheelers are available. The advantages are that the design is very simple as there are no complex parts like fuel pump, combustion system, pollution and noise treatment mechanism. The disadvantage is that its batteries need a lot of space, require 6-8 hours charging time, short range of drive [100 miles for car and 60-80 miles for bike] and after logging a certain distance batteries require to be changed. Unless some compact and powerful batteries with less recharging time as with lithium ones are available, its acceptability is not going to increase.

(d) Solar-powered Cars: It uses the solar energy to charge batteries that in turn provide power to the vehicle. They are basically electric cars with an extra facility of continuous charging while driving. They have the advantage that their driving range is higher [135 miles]. When weather is cloudy or driving at night the car depends on batteries, so such cars have all the disadvantages of the electric car.

(e) Hydrogen-based car: This seems to be the most promising and best pollution-free alternative to the present fuel. This promises a big hope for the future generation vehicles. Hydrogen vehicles are ready to move from laboratory to roads. Some Indian companies are working on it and within one or two years probably they may be able to launch in India. Initially, they are planning for a hybrid car, i.e. operating both on petrol and hydrogen-powered engine. What's the principle? They use hydrogen as a fuel with the help of fuel cell. Hydrogen stored in the vehicle with the help of a fuel cell is combined with the oxygen chemically to produce electricity that is used to run the vehicle. It emits only water vapour, making a carbon-free emission. *Advantages:* All the problems associated with the electric or battery-based car will go away with the hydrogen fuel cell. Large amounts of hydrogen can be stored in the pressurized tanks that occupy less space than batteries for the electric car and also less than the present fuel tanks. Hydrogen, in the form of water, is the best source for it and that is available in the world in such abundance that we will never be in shortage of hydrogen. Considering all these, this can be the best replacement for the petroleum products and can be called an ideal fuel. *Disadvantages:* Affordability and the cost

of cars and availability of the fuel station for hydrogen refilling would be a big problem. Even in some developed countries where it is available, there are just a few refilling stations. So they are finding it practically difficult to use it on a large scale. In India, in so many years when the CNG is confined only to a few cities, how can we dream of a hydrogen car?

(f) Compressed air as fuel: French engineers, along with an Indian company, have claimed that in a few years they would be able to make a compressed air-based engine. The car will be driven by compressed air stored in the carbon fibre tank built in the chassis. The tank of the car can be filled with air from a compressor in just three minutes. If plugged into the mains, an in-built compressor will do the job. It is mainly for towns but can be used for a long journey with some additions.

(g) Green fuel or bio-fuels:

(1) Ethanol: It has been used successfully after blending it with petrol and it is being regularly used in many developed countries. Up to a blending of 10% the vehicles do not need to change its design. Blending by 24% is a usual norm in these countries. However, some countries like Brazil have designed vehicles that can run on 100% ethanol. As for India, the government has recommended a compulsory blending of 5% ethanol since November 2006 and 10% from October 2008. However, the present status is that even for 5% blending as against the demand of 50 crore liters, only one-fourth demand could be met. So, without adequate measures and foolproof policy, it would not be able to achieve a blending of 10% for many years. Besides this, the government policy towards excise duty and the willingness of the oil companies [as these would have a much less profit margin] will also determine its implementation in India. In India, its main source is sugarcane and it can be made available at the cost of around Rs 21-22/liter.

(2) Bio-diesel: It is made from a plant *Jatropha* but at present it is not available on a large scale. This can be blended easily up to 20% with a little modification in the present diesel engines. Dr Rudolf Diesel, who got the diesel engine patent in 1898, first used bio-diesel to run this engine. The *jatropha* plant has some excellent qualities. It can grow easily in waste lands and poor soil with little rain. It is resistant to diseases and is also not grazed by animals. In India, out of total 3.29 million hectare of land nearly 50% is either waste or degraded that can be used for it. Besides this, it will give employment to villagers and fuel for their cooking and lighting. The Planning Commission is encouraging

it in India and a target of 10% of the fuel demand would be met by bio-diesel by 2017. Let us see what happens.

[X] OTHER MEASURES

(1) Keep smaller vehicles as an optional one: Those who have four vehicles should also keep a two-wheeler like scooter with them. They can use any one of vehicles according to the need. Use car only when more persons have to travel or if heavy shopping has to be done.

(2) Pooling of personal vehicles: Pooling of both four and two-wheelers while going on the job will not only help in conserving fuel and decongesting the roads but will also improve social relations with your colleagues.

(3) Change timings or days of closure: e.g. Schools, offices and markets.

(4) NGOs: Considering the present reluctant attitude of the government, there is a strong need of NGOs or environmentalists to think about it and intervene.

Other suggestions that may not find favour are: 1. Only one vehicle per person. 2. Registration only after proof of parking space. 3. Restrict use of certain vehicles on certain days of the week.

Chapter - 13

HOW TO DECONGEST CITIES [PART II]: MEASURES FOR ROAD INFRASTRUCTURE

A proper road infrastructure is extremely essential for an uninterrupted and a smooth traffic. The various measures that are helpful are as follows:

[I] DE-ENCROACHMENT

Various types and causes of encroachments have already been discussed in the chapter of 'Biography of Urban Roads in India'. Now the question is how to get the public space back? The solution to this problem is really not easy. This is the only measure that does not require any money but a very strong political and bureaucratic will. The probable solutions and those who can really help in this regards are;

(1) The public: The people are the beneficiaries as well as sufferers of this complex problem and at present, there is no campaign against the malady.

(2) The District Authorities: They can really change the look of a city provided they have a bureaucratic will. At present they are only detached spectators of the drama of encroachments. Whenever there is an increased pressure from the public and the media, they make a half-hearted attempt to tinker with encroachments. Though there is a provision for penalty of Rs 2,000 and/or six months' imprisonment for the encroacher, I am not aware of one single example of such punishment in the city of Agra. Unless these authorities have a determination to curb this, no law, regulation or punishment to curb it would be successful. I believe that even the most recent method for keeping vigilance on unauthorized constructions by 'google earth' i.e. keeping a regular record through satellite-operated photographs of the colonies and the city would fail miserably.

Gone are the days when officers among the district authorities used to be strict and refused to yield under pressure. They used to take the decision in the larger interests of the public. Their bags and baggage were kept ready to wait for transfer and were hardly ever discouraged by these 'transfer punishment' for a good cause. But now throughout in their posting period, they avoid intervening in controversial problems. You may frequently spot them in other kinds of 'non-controversial social work

like cutting ribbons, flagging off a cross country race, annual function of some school or presiding over a kavi sammelan, and the like. I can only say that many officers come and go in a city but only those who really do something for the betterment of the city especially who remain firm and strict against all odds are really remembered by the people of the city for a very very long time.

(3) The local politicians: It is true that local politicians usually take keen interest in the common public problems especially related to essential civic amenities. Since the common public seriously suffers from illegal constructions and encroachments, we expect their active intervention. But, in spite of the fact that the politicians have a good cause to support, they seem to be least interested. Why? Politicians also have their own guidelines for such interventions. Had it been a matter between the public on one hand, and the local government authorities or opposition party on the other, they would have felt greatly delighted to intervene. However, the matter of illegal encroachment is mostly between two groups of the public only. On one side, there is a group of influential people responsible for illegal encroachment, while on the other there are the common citizens who are the real sufferers. Politicians would always avoid intervention because their consideration of 'political gains vs losses' is what guides them in such matters. Whatever side they take, it is certain that they will certainly displease one of the groups. They can't dare go against even a small group of the public. If at all they intervene, they would prefer to join the defaulters' group because this group is powerful, influential, and rich and would help the politician at the time of election. Secondly, most of the politicians are themselves responsible for many such illegal encroachments and illegal constructions which may also be one of the reasons to suppress their voice against encroachments.

(4) The Ruling Government: The government is nothing but a group of seasoned politicians. Their strategy is in no way different from what has been described above. At present the concerned ministries are not able to take a firm decision or action in this regard. The reason is the same. The government in all controversial issues between two groups of 'general public' whether of demolition order for illegal construction or reservation issues or Mandir-Masjid dispute, etc, cleverly passes the ball into the court to decide.

The strategy of Delhi Government in MCD's (Municipal Corporation of Delhi) sealing drive against the unauthorized business establishment is a typical example. When the government approached the court to get an order against illegal constructions, it did not realize that it was opening a Pandora's Box, or that it could boomerang on it. However, once there

was politicization of this issue, it softened its stand. In India, unity for wrong reasons occurs quickly. The message to the masses is that while doing illegal work like encroachments, always do in large numbers that make it semi-legal. For the rest you can manage by making a louder voice or protest in a big number whenever any drive against encroachments is initiated. Any way, it will be a milestone judgment in the MCD case whenever it comes as it may decide the fate of illegal constructions all over India.

(5) The court: In present circumstances, the judiciary appears to be the only body which takes decisions purely in the larger interests of the general public. We cannot expect this from politicians and administrative authorities. Probably this is the reason why more and more suffering people are going for PILs for their city problems. One may call it a judicial activism. I believe this could be the view of the politicians while majority of the people in India welcome the intervention of the judiciary.

(6) The public: I come to the public again. Ultimately, it has to do something. Gentlemen, if you have made a house in some residential area it would mean you are going to spend the rest of your life here peacefully and safely. So it is a matter of suffering for years if something goes wrong with this area. Why should the majority suffer owing to the illegal acts of some people? Besides the traffic-related problems, these illegal commercial activities affect the safety of your family and house. It is true that for a single person it is difficult to fight against the law-breakers as it causes lot of tension and enmity. Then what to do?

Step I: First of all you get united by making a local welfare society or association in your area.

Step II: Through this society inform in writing or serve a notice to all shopkeepers or persons causing encroachment in that area about inconvenience that the residents are facing. A clear message should be given to all shopkeepers, stating that you are not against their business, but it is the collective duty of shopkeepers not to cause traffic inconvenience to the people of the locality. These shopkeepers can be suggested for jointly keeping a man who can manage traffic and parking there. Through the same letter they may warn that if the shopkeepers do not take necessary action, a complaint will be lodged with the concerned authority. Since a majority of small local shopkeepers thrives on the local population in that area, so in most cases we would get a positive response. However, there would remain a class of big showrooms that may not care for your suggestion or may not consider your problems seriously. They need to be tackled in a different way.

Step III: There already exist guidelines and laws that are in our favour. The only thing is that you have to do is to have a copy of all such rules and regulations with you and to register the complaint or protest in time in front of the proper authority. Instead of single-handedly, you should make this complaint in a group. If we meet the authorities in a group, it would not be easy for them to favour the encroachers and those running commercial activities. Always send a copy to the higher authorities of the concerned department. It has been seen that local media help a lot in this regard. However, the media alone cannot solve the problem unless we come forward to solve our problems.

Step IV: Use 'Right to Information Act' : This is a boon for the public or a good weapon given to the people. For example, we have a right to know from the district development authorities about the number of illegal construction cases pending for actions and records about such complaints in the last few years. We can also know what action has been taken so far or why action is pending and the names of officers responsible for action and the remarks made by senior officers, etc.

Step V: Take help of Court : It is not always easy for the public to go to court, especially for small matters and also not easy to get the verdict in time. This option should be used for some major issues when other methods have not yielded any results or when there is utter hostility among the district authorities.

[II] ROAD WIDENING

Although de-encroachment can solve the problem of traffic congestion to a great extent, with the increased traffic load, a time comes when you feel that existing roads need to be widened and there are some areas in the city that need an actual road widening by land acquisition, officially. To get extra road space from the residents is a big hurdle. In this regard the powers conferred to the authorities in the metro are greater as compared to smaller cities. Whatever procedure the government adopts, compensation should be adequate and quick so that fewer people go to court for a stay order. If people are not getting adequate compensation and go to court, then the project might be delayed and the cost will go up. If we consider this hike in the project cost due to delay, it would be much more than the actual compensation. In such cases, despite road widening, a small scattered leftover area owing to 'pending under court' reasons, acts as a bottleneck and defeats the very purpose of road-widening and people continue to suffer. We should be practical rather than going by old and lengthy procedures.

[III] PROPER PARKING SPACE

It is made available by the Municipal Corporation, Development authority or by owners of the commercial complexes. Every city in India is now facing an acute shortage of parking space. A few important points that need consideration in this regard are:

(1) No Roadside Parking: For parking vehicles an extra land space other than roadside should be made available by the government. This is only possible when the government leaves enough space at the time of town planning. Instead, it is frequently seen that the actual road side space is used for parking lots. This severely compromises the smooth traffic through that area. Intentions behind roadside parking appear to be more of revenue collection than solving the problem of traffic congestion. The policy of the of the local development authorities is that it tries to sell out as much road side space as possible. Even some leftover lands belonging to nazul, etc in cities are being legally captured by the land mafia with the help of local administration. This may not be true of the capitals but this certainly happens in smaller cities.

(2) Whether to charge or not: Parking space is costly as the prices of land are rising. An average-sized car occupies about 23-sq.m. of parking space. If you go for a shop or commercial space of similar dimensions on rent in the same locality, it would be much costlier as compared to parking fee. So it seems quite justified that a parking fee should be charged provided an extra space other than the roadside is made available to it. A higher parking fee may be allowed to the areas that are more frequently visited [like railway stations] or more congested or having a high local land cost or multi-level automated parking lots. This is a common policy in some congested cities of USA, Europe and in Asia, like Tokyo.

Although from the business point of view it sounds correct to charge a parking fee, there is one point that I would like to mention here. It has been seen that while developing an area, the developer or the authority already increases the actual land cost to compensate for the land loss due to bye-laws i.e. lands for roads, parks, parking space and community services. In other words, whatever loss that occurs to the developing agency owing to parking space, is adequately compensated for when fixing the final land price. Thus the authorities should keep this fact in mind while fixing parking charges.

(3) One-time Parking Tax vs Spot parking fee [by contractor]: One time parking tax is an alternative suggestion for the parking fee. The government should charge an appropriate amount from vehicle owners

at the time of registration of vehicle in the name of parking tax and can make parking free of cost later on. This would probably be more acceptable to the people and the revenue also, not through contractors, will directly go to the government. It is a fact that money earned by the government through letting out the parking contracts is much less as compared to money that is earned by parking contractors and the government officials who help the contractors to get the contract at a very low price. For an example, the contract for one of the parking spaces in Delhi for one year was given for Rs 5 lakhs only while the contractor made Rs 2 crore out of it in the year 2006-07. Not only this, a large proportion of the contract fee remains unrecovered from these contractors as they frequently disappear after producing false papers regarding security.

In addition to increased revenue, this one-time parking fee will also check nuisance by parking contractors and the parking mafia. In spite of the agreement with the government, these parking contractors are free to fix any parking fee and with the help of their muscle men they use all means to get higher parking fee. Sometimes even rich people show their resentment against this not because of money but because of harassment or annoyance over the wrong trend. Thinking from the people's angle, if one has to go for three or four places for some small jobs, one loses a lot of money from one's pocket. This amount could be big for a person with an average daily earning. This one-time parking tax will also eliminate the tendency of the public not to park at a proposed space, thereby reducing the chances of haphazard parking.

(4) Parking space for commercial complexes: Regarding the parking space in commercial complexes, you find enough space as far as the sanctioned layout plan is concerned. However on actual site, you do not find that much space. In fact these complexes need more parking spaces because in addition to customers, a significant parking space is also required for their own employees. One should realize that to become successful, parking space is the key requirement and more important than the location of the mall or the commercial complexes. There are several examples where big malls or commercial complexes have failed either due to the narrow approach road or due to lack of parking spaces. So don't go only by the calculation of cost of parking space in terms of its return, instead, go by the overall sale or total turnover that would increase due to proper parking space. Just because of the parking problem, many popular established showrooms in old city are now being shifted from congested markets to the newer open areas in the same city.

[IV] FUTURISTIC TOWN PLANNING AND CONTROLLED URBANIZATION

The road infrastructure should be planned on a long-term basis, keeping in mind their future utility. The question is how to define a long-term planning and what length of time is enough to be called a long-term planning. The answer depends mainly on two factors viz: what is the present population or size of the city and how fast the city is growing. The problems of small and big cities are different from each other. So the long-term planning is different for small city from that of a big or metro city. A city having a population of 10 lakhs may require a different kind of solutions as compared to those having a population of 1 crore. For example, metro rail or more flyovers is the need for the bigger city.

Regarding the rate of growth, cities which are State capitals or become the hub of industrial, business or commercial activities, grow much faster. These activities generate more employment and prosperity in that area thereby increasing the purchasing power of the people. Owing to better living conditions more and more people get attracted to settle there. However, every good thing has its side effect and perhaps the most important side effect and cost of any developing city that we face is the traffic-related problems. If we do the town planning keeping in mind the above points, the long-term results would be much better. The measures that are sufficient for 20 years for a slow growing city may not be sufficient for even 10 years for a rapidly growing city.

Traffic conditions are better in metropolitan cities than in smaller cities, but I am sure that people of these metro cities may not agree. But certainly I can say that they are privileged to have better funds for infrastructure, better law enforcement authorities, and bigger in manpower in all the concerned departments. The majority of metro cities are basically State capitals so problems directly attract the attention of the highest authorities of the State. It is the disproportionately rapid rate of rise in number of vehicles in metro rather than the infrastructure that responsible for traffic congestion. In smaller cities infrastructure and bad town planning are the main reasons. Those who are not satisfied with the traffic situation in their metro city, I would suggest to them to visit smaller cities of India. Only then they would realize the difference.

Good town planning is as important as the layout plan of a new house being constructed. Proper town planning not only ensures a smooth traffic for a very long time but also saves many unnecessary expenses made for short-term solutions. It is always better to make revisions and corrections on paper instead of regretting later on. Following are some of the points that need to be considered for planning:

(1) A good number of parallel roads with adequate width and inter-connections, at least two ring roads, adequate by-passes are the basic requirement for the smooth flow of traffic. Besides, properly-spaced industrial, commercial and residential areas are necessary for reducing traffic congestion and accidents.

(2) Various facts related to vehicles are to be taken into account e.g. total number of registered vehicles in that city, rate of rise in vehicles every year, vehicles entering the city in the day time for the purpose of some commercial activity. Besides daily visitor vehicles, there are a significant number of migrant vehicles which, after being registered in one city, have shifted to another city. Although it is mandatory to register new vehicles within one year after migration under M.V. Act, people are reluctant about it. Thus, it is very necessary to know the actual number of vehicles for proper town planning.

(3) Whenever space permits, it is better to distribute the population density evenly in developing areas. A vertically growing city does not favour a smooth traffic as there is a sudden load on roads during the peak hours. Another important fact that is not related to traffic and yet is equally and rather more important is that an increased density over a particular area is responsible for a rapid fall in the water level of that area.

(4) Modernization of infrastructure and traffic reforms should benefit all types of commuters on roads. After all, it is public money and all commuters on the road contribute to infrastructure. However, the present equation is that in India only 10% population has motorized vehicles, but the cost of the total infrastructure, the air pollution and the risk of road accidents are shared by the whole society. Any enhanced facilities for the motorized vehicles adversely affect the safety of non-motorized vehicle-owners or pedestrians. So in town planning the government should properly consider the requirements for the non-motorized vehicles and pedestrians also [like separate track for cyclist, footpaths or pavements].

(5) When the city acquires a big size, it is better to start satellite townships around this city. Development authorities should develop relatively a large area as a satellite township that is independent for requirements like schooling, markets, entertainments and other commercial and official activities. This will minimize the unnecessary commutation of the people from the satellite towns to the main city.

(6) Long-term planning saves many trees from being cut. Besides the cost, the other thing that pains us most while going for frequent road widening is the young trees that have just started providing shelter to commuters are sacrificed.

[V] MAJOR REVISION PLANS FOR OLD CITY AREAS

It is very difficult to find a satisfactory solution to traffic problems in the old congested areas of the cities. These areas would need a major revision for town planning. With one example I may probably explain what I mean for a 'major revision'. Nowadays, while making some highway, in addition to widening of previously made roads, new highways are being made through the areas where previously no road existed, e.g. Noida Express Highway. Similarly, many new link roads are being made through totally new areas just to connect some important highways like that of Suez Canal. This may provide a better solution and also meet the demand of time. Similarly, if we want to have a permanent solution to congested old city areas and to an already established unplanned city area, some new roads and connecting roads through the virgin areas have to be made.

Busy spots like bulk or whole sale markets, bus and railway stations and big offices may require shifting to peripheral location in the city. This is especially necessary for the whole sale markets as they attract a significant heavy traffic inside the city. Right from the beginning we should not allow a single market area to develop disproportionately to an extent that it starts enjoying very high reputation in and around the city. Instead, we should ensure that many such market areas are developed simultaneously in all important corners of the city.

[VI] LOCAL OR COMMUNITY MARKET

In residential areas, there should be separate and fixed place for commercial activity. It should not be that any one can open a shop of any kind, any where, any time.

(1) The market and shops should not open directly on the road, instead into by-lanes or service lanes.

(2) There should be a separate plot or plazas for local vendors of vegetables, fruits, snacks, etc. We really need them and if we don't give them adequate space, they will start mushrooming on every corner and crossing, causing great inconvenience. You can't remove these small vendors or suppliers of the essential items from the urban landscape. You can live without malls in your area, but cannot without a `subziwalla`.

(3) Some space should be left for liberal parking and for any further use of land if the area develops beyond expectation.

[VII] MANAGE SCHOOL TIME CHAOS

Besides morning and evening rush hours, there is a third peak hour in the afternoon that is caused when schools get over. Nowadays there is an increasing tendency among parents to drop their children by

their own vehicles. The reason could be either the safety of the child or that the school does not provide transportation. There is a sudden temporary increase in personal vehicles, autos and buses that cause a great chaos on roads. The schools are mushrooming very fast and are being opened in residential areas where narrow roads are prone to traffic congestion. A significant number of children die or are injured during their trip to school. No comprehensive data is available as to how many children are killed or are injured on their trip back from school. Sometimes children are packed in cycle rickshaws, auto-rickshaw and vans worse than animals or chicken. This problem can be reduced by:

(1) Keeping a closure time difference among the schools belonging to one particular area [not necessarily of the whole city]. In spite of the fact that this congestion can be reduced to some extent by keeping a difference of 15-20 minutes in school timing, school authorities quite often fail to have an understanding for this, may be because of ego in choosing the time. Sometimes they listen only when compelled by district authorities.

(2) Schools should have some parking space to accommodate vehicles at peak hours.

(3) School buses are much safer and will also reduce the traffic burden. Regular maintenance of school buses is also necessary.

(4) Making a pool of personal vehicles like that for offices.

(5) Admissions in schools may be restricted to areas of residences of children.

(6) Some laws have to be made to fix the maximum number of children in an auto or van, otherwise these auto-drivers will continue to make new attachments or modification to accommodate more and more children in them. Every time, if any accident takes place involving such an auto, we make a big hue and cry for it. However, we should also consider the other aspects of this problem. The most important well-wishers of kids in the world are the parents of kids themselves. Is it really possible that the parents of such children are unaware of how their kids are being carried to schools since every day they come to see them off and receive them? In my view most of them know this fact and probably due to economic factor they find themselves helpless to intervene. If they ask the auto driver to reduce the number of the kids he is carrying by half, he would then ask for double the fare for their kids.

[VIII] PROPER TRAFFIC REGULATION

A good traffic system is extremely necessary for smooth traffic and decongestion of the city. In fact, the traffic system should be considered



A traffic policeman on duty here told me to put the road-dividers this way. It will prevent traffic jams as well as traffic, he said.

to be an important component of the road infrastructure. Upgrading of city infrastructure without a proportionate increase in the traffic personnel will not give the desired output. It will be like making an excellent garden without the adequate number of care takers and gardeners.

The role of traffic authorities and important aspects related to traffic control have already been covered in chapters 2 and 7. Besides that some other ways of helping the traffic control are as follows:

(1) Traffic Wardens or Volunteers: These are some sincere and dedicated persons from the community who assist the traffic police in controlling traffic at important junctions. They can check the papers and can report any traffic violations and irregularities to the traffic police for further action. On some special occasion in the city like festivals, fair, games, they can play a constructive role. Under the new scheme wardens can inform traffic authorities by phone regarding any faulty signals, improper parking and encroachment.

Considering the fact that traffic police is already overworked, more and more people from among us should volunteer to help them. Sparing 2-3 hours for 2-3 days in a week for the traffic of your city can be of great help in traffic control. Anyone of us can enrol as traffic warden and after some basic training by police, can start the job. Alternatively, it is possible that some local societies and organizations may adopt a crossing for traffic control.

(2) Help from defence personnel: Defence personnel could be better traffic regulators. They have been found to be stricter in regulating the traffic. Both in-service and retired defence personnel can be involved in traffic regulation. Though a war occurs once in 10-20 years, it is the fear of war that costs a significant national budget. That we can't deny. However, this is also a fact that a more serious war is going on roads. If some of the defence personnel could be involved for traffic regulation on deputation on a regular basis that can be of great help. Similarly, we can depute some retired defence personnel on ad hoc basis for traffic control.

(3) Use of Roundabout: Instead of traffic signals, use of roundabouts have been found more useful. The advantages are: [1] They eliminate the use of policeman. [2] A large roundabout calms down traffic and reduces road accidents by 40%. [3] They are especially helpful when more than four roads join at a spot. [4] Emission is reduced by 20% as compared to signaled intersection. A study shows that out of total fuel 11% is wasted with engine idling at traffic signals and in traffic jams. Keeping the engine on for three minutes consumes an approximate amount of petrol that

could run your vehicle one km. longer.

(4) Intelligent Traffic Signals: We know that traffic flow at intersections is not always the same from all directions for all the times. Thus Installation of Intelligent Traffic Signals [ITS] will help to regulate the traffic at intersections. It gauges the volume of flow of traffic from all directions and automatically adjusts the cycles accordingly. In addition to it, this can be equipped with video camera and Automatic Number Plate Recognizer [ANPR] camera that will send the details of the number plates of the vehicles flaunting the traffic norms to a central server for generation of challan slips.

[IX] CORRECTION OF INDIRECT FACTORS

The government should also find solution for some indirect but significant factors in relation to problems of road traffic. It is important that besides taking measures against the direct causes, it is also necessary to discuss here some indirect but very important factors in relation to road traffic.

(1) Check Urbanization: At present the total urban area is 2% of the country's total land area. But it accommodates 28% of Indian population. In recent times the rate of urbanization has increased significantly as every 10 years, urbanization is increasing by 31% [from 1991 to 2001]. At present urban areas are facing a double burden of the population growth. In addition to general population growth of 2% per year, it is also accommodating an urbanization of 3% a year. According to studies, the present figure of 28% is expected to get doubled by 2030. What would happen to civic amenities and road infrastructure that are already on the verge of collapse, when urbanization will be doubled? This process of rapid and unplanned urbanization is affecting the infrastructure very seriously. Unfortunately, very few researches and studies have been done in our country showing a correlation among various facts e.g. urbanization, trends in income, population, vehicular numbers, etc.

Thus we see that the reversal of urbanization and the prevention of migration of rural population to cities is an extremely important step now. How to check urbanization? If we really want to solve it, then we have to go deep into the problem to get the answer for 'why rural population migrates? In other words, when to call a rural person an urbanized one? I think any person who starts getting a good opportunity for jobs, better school for children, better hospitals for treatment, better civic amenities, markets and means of entertainment can be labelled 'urbanized'. To avail of better things in life is the basic right of every citizen and if it involves

migration, then nobody can prevent him. The only way to check it would be to provide all above-mentioned urban facilities in rural area. This is certainly not an easy task. However, some efforts have to be made to tackle the situation. It is not mandatory that all these facilities should reach the last village, but at least we can make it available to the level of smaller towns and tehsils. If these smaller towns are well-connected by a road network to its dependent villages, we would be able to reduce this migration to a good extent. Thus we can achieve the goal of better uniformly distributed urban, civic amenities. The states of Gujarat, Haryana and Punjab are making good efforts in this direction.

(2) Curb Corruption: Corruption and the lack of proper planning are the two most important factors that are responsible for wastage and misuse of most of the government's money, the public's money. The top government officials know it very well and one Indian Prime Minister admitted that more than 85% of the money sanctioned goes to corruption. It is sad to see that in spite of a frank admission, there are no effective steps to curb it. The situation has become worse now and young politicians feel that now only 5% of the sanctioned money reaches the common people. According to Transparency International's Global Corruption Perception Index, India is enjoying the 72nd rank among the 179 countries of the world. But if we consider the black money kept in the Swiss banks by the people of any country, as a parameter of corruption, India is on the top. The confidence of citizens in its government and politicians has already dropped to a very low level and a more worrying fact is that now citizens are rapidly losing faith in bureaucrats also. This high level corruption is more adversely affecting the development of the nation. The so-called will, determination and commitment are lacking amongst the senior officers. The irony is that often corrupt people are assigned the job to check or make enquiries against corrupt officers. It is strange that corrupt people are expected to remove corruption!

If we consider the Public Work Department (PWD) in road-making only two or three groups are involved. The first is of the government officials who do the planning, sanction money, supervise and approve when the road constructed is completed. The second group comprises of the private contractors who do the job. The third group is of politicians who remotely and cleverly supervise the funds or the budget. There are very good rules and guidelines regarding allotment of contracts of road works, its payments, quality check, etc. Thus theoretically it looks very easy to find out the black sheep easily from this channel. Why government finds corruption so difficult to tackle is really difficult to understand. Though

from time to time there are formal press releases and statements by the government that corrupt officials will not be spared. God knows when this 'now' will come.

Now the public and media should come forward against corruption. The Right to Information Act can help us in this regard. For example, if a new road is being made, you have the right to demand sample of materials and you can inspect an old work that has been completed and the work that is going on. If you ask for the sample the authorities are bound to give it to you in a proper manner for lab testing. Under RTI act you can also see other records regarding road construction, like names of contractors, dates of start and completion, rates of work, amounts paid and so on. Besides the poor quality of material, the other common mode of corruption is the difference in the length, breadth and thickness of the road in records as compared to the actual one at the site. If you suspect any foul play or any underlying corruption you may inform the media or may complain to higher authorities in the State, or to the anti-corruption bureau or vigilance departments.

After all it is public money so the public has every right to know how effectively it is being used. I believe the contract should not only be given for construction but also for its maintenance for a certain period. The money should be released in installments during this total period of contract. As compared to small-level contractors big companies have been found to be a better choice as these are not only better equipped in road making but also easily traceable if something goes wrong later on.

Similarly, for cleanliness on roads, you may enquire from the local corporation about the actual number, place of posting and attendance register of various sweepers and sanitary inspectors and supervisors in your area that are responsible for cleanliness.

(3) Population Control: If you consider causes for India's top problems, population explosion is the main denominator for the first five most important problems of our country like poverty, illiteracy, health, unemployment and would be contributory to almost all the problems in the country [food shortage, water, electricity, etc]. So how can it spare the traffic-related problems? Tremendous rise in the population is a significant cause for traffic congestion and overcrowding on roads. This increased number of vulnerable road users can easily become victims of accidents, especially if some speeding heavy vehicle drivers lose control. In many of the developed countries there are few pedestrians and two-wheelers on roads, so there are little chances of vulnerable road users getting victimized in such situations as the uncontrolled vehicles have nothing

to collide with except the fixed objects and getting hurt themselves.

Similarly, this population load affects significantly the planning and budget for the infrastructure. Population explosion is perhaps the most important issue for the country but unfortunately the least discussed among politicians. Perhaps bad memories related to family planning programmes during the Emergency regime have brought the population control measures to a standstill with the result that no political party dares to touch it or include it as priority in its manifesto. Every government wants to deal with this issue very softly. We ourselves do not want to co-operate and listen to population control programmes, but just want a solution from the government. At present, the concerns for the population is mainly confined to the editorials of newspapers and other print media. However, most of the electronic media is presently busy with encouraging superstitions or exorcism and taking the tantra, mantra, ghost stories more seriously as compared to the more relevant issues like population.

[3] Poverty or Economic inequality: Now, instead of three classes [high, middle or low], we need at least ten categories to define the economic strata of Indians. Considering this fact, how is it possible for the government to cater for the traffic related needs of the people whose earnings range from Rs 20/day to Rs 20,000/day? It is a fact that requirements, strategies, attitudes, views among commuters on roads vary greatly according to their economic and social levels. In developed countries, the majority of people [especially middle and low classes] fall in a short range according to their earnings, so that every government plan benefits the larger section of the population. This is not only helpful in the field of road traffic but also in other areas, like health and education. However, in India due to vast disparities in their economic strata, there is a compulsion on the government to make more plans and strategies for different categories. Even if the government has the best intentions to do so, I believe that it would find it tough to do so. This fact has also been discussed in chapter 12 in section 'Better Mass Transit Systems'.

I totally agree with Noble Prize-winning economist Amartya Sen, who has called India a country of contradictions. Unity in diversity or incredible India sounds very good and gives us a good feeling. We feel satisfied and proud that we are united in spite of wide disparities, like those of languages, religions, cultures, ecology, geography and so on. However, there are some more facts with great diversities that we should also pay attention to. Out of 10 wealthiest persons in the world four belong to India yet there are 37 crore people earning less than Rs 20 a day and 80 crore earn less than Rs 80 a day. Indian medical facilities have advanced to the extent that even the people from developed countries

are coming to India for their treatment and yet India has the record of maximum number of newborn deaths in the world to its credit. India's brains are occupying the top positions in top companies all over the world and yet only 20% of its people are able to have education above high school. Similarly, as far as the individual signs of prosperity are concerned i.e. pot belly or obesity, our country is on top now and yet every year 7000-8000 poor people commit suicide due to hunger. There is no dearth of such contradictory records in our achievements touted prominently. Yes India is incredible!

In India, there is unequal pace of economic growth. A wide gulf in relative economic status among Indians exists. Unfortunately, the gap between the rich and the poor is widening rapidly with time, so that the rich are getting richer and the poor are getting poorer. I distinctly remember when the Finance Minister was asked by a correspondent at the time of budget declaration for the year 2008-09 about this increasing gap, he cleverly answered that it is a political question and there is no truth in it. However, in this regard as compared to FM, I believe more in illustrations of cartoonist R K Laxman that give much more realistic pictures of social and economic inequalities in India. According to a survey by an industrial body called PHDCCI, during the last 25 years [between 1980 to 2005] the gap between the lowest and the highest per capita income has increased from 2.5 times to 3.8 times. In absolute terms, the gap between the two groups has increased from Rs 5,700 to Rs 15,000. This clearly indicates that the advantages of our resources, planning and economic policies are not uniformly reaching out to all the needy groups.

Chapter - 14

HOW TO HELP ACCIDENT VICTIMS

Trauma care for the road accidents victims is the most important aspect of road traffic. This is the one aspect where not just commuters and drivers but every one of us should pay attention. This discussion has been divided into three sections. Firstly, I will discuss as to what is the actual care that a road accident victim really deserves, then about the ground reality or the present situation of trauma care in India and lastly what exactly is expected from the government and the society to improve care of such victims.

EXPECTED TRAUMA CARE FOR ACCIDENT VICTIMS

The management of the road accidents victims can be divided into two parts: [1] pre-hospital care and [2] treatment or care in hospitals.

[I] Pre-Hospital Trauma care

What should we do at the accident site? This basically includes an attempt to rescue the injured from the accident site, call for a help, provide first aid and arrange for transfer of the injured for a definitive care. This help can be provided by co-passengers, bystanders, other drivers, dhaba owners, police, villagers, etc. We don't expect trained paramedics or an ambulance immediately [within few minutes] so the role of the people just mentioned or the first responders, even if they are not trained, cannot be overemphasized. Bystanders should not feel inhibited to help due to fear of some legal hassles or actions.

Step 1: Rescue the victim: It basically means to remove the injured person or persons who are trapped either inside or under the vehicle or lying on the road so that the much-needed first aid can be given and also to prevent any further trauma by other moving vehicles on roads. Sometimes, an unusual situation like a vehicle catching a fire or plunging into water or slipping into a ravine can arise requiring other emergency services also. This rescue work can be initiated by any one and does not require any medical background.

Step 2: Call for emergency help: Make a call for an ambulance or for patrolling or local police and to the relatives of the injured by checking his identity. In India, calling the police to the accident site is equally

important as that of an ambulance. The reason is that the public reaction may be hysterical after some accident, so controlling the crowd can be an important job in such situations.

Step 3: Start providing some first aid till formally trained para medical personnel come. If no ambulance or health facility is expected at the site then don't wait and arrange some transportation to rush towards a hospital.

Precautions by accident victims that ensure better aid: In such situations the following precautions or preparations are very helpful to help accident victims.

1. Keep the vital information readily available, e.g. important telephone numbers, name and address, information regarding medical insurance, blood groups, any history of major diseases and drugs that are used for it, phone number of some ambulance, etc. This information can be kept inside the purse, along with documents of the vehicle, on a sticker on the dashboard or in the mobile phone. Any one including you, co-passengers or rescuers can easily use it and would enable to provide medical treatment to accident victims within the "golden hour".

2. Keep An Emergency Kit: Planning ahead for danger can make the difference between life and death. Besides a first-aid kit and tool kit, some more items may be of great help in such situations e.g. emergency light, fire extinguisher, large screwdriver, pair of pliers, rubber hammer, pointed iron rod to unlock the jammed door, flash light, extra batteries, etc.

[A] The First Aid

As per the definition, first aid is defined as the initial medical help to an injured person at the accident site and during the transfer till a definitive medical help is available or the casualty recovers. The purpose of first aid is to prevent deterioration in the condition and to maintain the vital functions during this period. The first hour after the trauma is called the 'golden hour'. Even in this golden hour it is the initial four to five minutes [called platinum period] that are very critical. If proper first aid is available, road accident victims have a much greater chance of survival and a reduction in the severity of their injuries. First Aid in the first hour after the accident can increase the survival chances by 70%.

The description that follows is basically for the non-medicos or primary responders [commuters, laymen, bystanders, etc]. A detailed discussion of these actual measures from the point of view of paramedical

staff is beyond the scope of this book and I suppose that needs a formal training with the detailed text. Remember, don't hesitate in such a situation on the premise that your knowledge is very poor in this regard and you fear that you might do harm to the injured. Remember the only fact that your intentions are the best, you are the only one around him to help and something is always better than nothing and this 'something done for' can really save someone's life.

I am not going to discuss what is being done in developed countries or is to be done ideally, instead what is practically feasible in our circumstances. We start dealing with the most severe conditions towards the less severe one. Secondly, here we would discuss more dealing with some serious injuries and as to deal with minor wounds or cuts, we assume every one of us is used to in our daily life.

1. Ensure Vital Functions of the injured: The very first aim or priority of first aid is to ensure or establish clear Airway, Breathing and Circulation [ABC]. Look for consciousness, breathing and pulse of the injured. If there is no respiration and heart/pulse then start immediately a Cardiopulmonary resuscitation (CPR). Take the person on some hard floor and put him on his back. CPR involves two activities: chest compressions along with mouth-to-mouth breathing. Place the heel of one hand over the center of the person's chest, between the nipples. Place your other hand on top of the first hand. Keep your elbows straight and position your shoulders directly above your hands [figure A]. Use your upper body weight (not just your arms) as you push straight down on (compress) the chest for two inches. Push hard and push fast: give 100-120 compressions per minute. Put your palm on the person's forehead and gently tilt the head back. Then with the other hand, gently lift the chin forward to open the airway [figure B]. Kneel next to the person's neck and shoulders. Pinch the nose and breathe into the mouth for one second [one after every four to six chest compressions][figure C]. Continue CPR until there are signs of improvement or until emergency medical personnel take over.

Remember, time is very critical when we are helping an unconscious person who isn't breathing as within a few minutes of the stopping of heart, irreversible brain damage can occur. The most common causes of immediate deaths after accidents i.e. within a few minutes or in first hour or during transportation are respiratory arrest, excessive bleeding both external and internal and injury to vital organs like brain.

2. Choking or respiratory obstruction: Choking or blockage of the



Figure - A



Figure - B



Figure - C

airway or throat is a frequent complication after an accident. The cause of this choking may be aspiration of the recently ingested food, blood trickling down from the mouth or nose, broken teeth or any food items present in the mouth at the time of accident [pan, gutkha, chewing gum, etc]. If the obstruction of the airway is complete, death can occur within few minutes. The chances of death increase if the injured is unconscious, as he is not able to spit or cough it out. To clear the choking, turn the injured on the side with head end a little low so that blood or other contents come out with gravity. It will also relieve any tongue fall that frequently aggravates the choking in an unconscious patient. If it is a complete obstruction owing to the presence of some material inside the wind pipe, then use the Heimlich maneuver where you give five quick upward thrust over the upper abdomen above the umbilicus. If still it is not cleared and the person remains choked, then start cardiopulmonary resuscitation (CPR). Sometimes chest compressions used in CPR may dislodge the material from the trachea.

3. *Bleeding Wounds:* After ensuring a proper cardio-respiratory function, look for any wounds or external signs of injuries. If there are multiple wounds, priority should be given to those that are bleeding profusely. In such cases the best way is to apply a direct pressure over the wound by hand with the help of a clean piece of cloth. Usually it requires more pressure than we usually expect, so instead of fingers, use heel of the palm for the pressure. Maintain this pressure for sufficient time as usually it takes 4-5 minutes to stop. So do not look frequently to confirm that bleeding has stopped or not as this may dislodge the fresh clot that has just formed and cause rebleeding. Instead, wait patiently. Sometimes it may even require 15-20 minutes. If it is a case of limbs or head, you can apply a tight bandage or clean cloth around it for sustained pressure. If still bleeding does not stop then instead of removing the dressing, apply more over it and try to rush to hospital.

4. *Fracture:* Fracture is the most common type of injury that we see in accidents [40-50%]. A fracture or dislocation in a limb is suspected when there is abnormal mobility, limb deformity, feeling of crepitus or grating due to movement between the two fractured segments of the bone. In fracture, even a slight movement causes disproportionate or severe pain. Sometimes the underlying fractured segment of the bone can come out after piercing the skin. Immobilization or the splinting of the fractured bone is the basic aim regarding first aid of fracture. One should not try to correct the alignment of the fracture instead do splinting with the help of some available wooden stick or metallic bar and apply a gentle pressure bandage.

In cases when a part of the limb is totally detached or amputated,

sometimes it is possible to join it with the body with the help of microvascular surgery. Collect this severed body part in a clean polythene bag but do not add water into it [if available, normal or isotonic saline [0.9%] may be used] and place this bag in another bag with cold water. The wound of the remaining limb on the body side may bleed profusely. In these cases tie a tourniquet just above the site of the amputation.

5. *Chest or Abdomen injury*: Open wounds of the chest can affect respiration severely by sucking in the air through the wound. It can be minimized by covering the wound with a piece of polythene and putting a bandage over it. This may help to reduce air being sucked into the chest. In abdominal wounds the intestines may come out. Don't try to push them back into place. Cover the wound with a wet clean cloth dressing. Don't remove any large or more deeply embedded objects. Don't probe the penetrating wound or attempt to clean it at this point. At present our principal concern is to stop bleeding.

6. *Head Injury*: It is the most common cause of mortality in road accidents. It should be suspected when there is a wound over the scalp and there are associated symptoms like convulsions, evidence of paralysis or weakness in limbs, deterioration in the level of consciousness, state of confusion, bleeding from the nose or ear, etc. When head injury is suspected, the patient should be kept in a lying-down position preferably turning to one side. In this position the vomitus or blood from nose or mouth would come outside and the chances of aspiration of it into the respiratory passage would be minimized. Keep a watch for any breathing irregularities, consciousness or any convulsions. In case of bleeding from inside the ear, instead of plugging the ear, get the injured to lie down with the injured ear facing down. If there is bleeding from the nose, this could be from injury inside the nose or due to head injury. A bleeding from the nasal injury usually stops when you pinch the tip of nose for a few minutes while bleeding due to head injury rarely responds to this maneuver.

In case of an eye wound, do not attempt any cleaning or washing of an open eye injury. Cover the eye with a clean soft cloth; place a stiff covering on top to counter any pressure coming on the eye. This is important because the contents can be squeezed out even through a very small wound.

7. *Spine Injuries*: Road accidents contribute 45-50% of the total spinal injuries. When someone has a spinal injury, additional movement may dislocate a vertebra causing further damage to the nerves in the cord and thereby can paralyse the lower part of body permanently. Thus the very basic aim in this situation is that we do not hurt him more

during resuscitation or shifting, by keeping the person immobile and safe until medical help arrives. Some precautions are:

[a] DO NOT move, bend, twist or lift the person's head or body even a little bit, unless it is absolutely necessary like surroundings or the vehicle in which he is trapped are not safe. Otherwise, wait for the trained medical personnel to arrive and handle the situation. Do not remove a helmet if a spinal injury is suspected. [b] In case he needs CPR, do not tilt the head back when attempting to open the airway. Instead, place your fingers on the jaw on each side of the head and lift the jaw forward. [c] If at all you need to move the person [e.g. choking by vomiting or blood], at least two persons are needed. One person should be stationed at the head, the other at the person's side. Move the person as if you roll the carpet i.e. the whole body is moved as a single block without any twisting or tangential movements. Keep the person's head, neck, and back in line with each other while you roll him onto one side. [d] For keeping the person absolutely immobile, place a tape across the forehead, and secure the person to a board to keep head, neck, and back areas from moving at all. Place rolled towels on both sides of the neck and body. While doing this, don't interfere with the person's breathing. If necessary, use both of your hands, one on each side of the person's head to keep the head from moving. [e] Extreme precautions are necessary while shifting such patients for the definitive treatment. There are three possible stages in shifting where abnormal movements can occur. These are: [i] taking out the injured from the vehicle to nearby place i.e. rescue [ii] taking from this place to ambulance [iii] taking him from ambulance to inside the hospital building.

(8) *Shock*: Shock or a fall in blood pressure after the injury is mainly due to excessive bleeding [external or internal] and due to severe pain. It is indicated by weakness, pale and cold skin, rapid and weak pulse and a low blood pressure. Breathing is shallow and rapid with sign of air hunger and the person shows overly excitement, looks anxious, confused, thirsty and feels fainting.

Look for the cause of the shock. The management of external bleeding has already been discussed. If you feel that in spite of adequate check on external bleeding the patient is still having or developing features of shock or low blood pressure, then look for internal bleeding. Have the injured person lie down and loosen the belt and tight clothing and cover the person with a blanket. If possible, position the person's head slightly lower than the trunk or elevate the legs. This position reduces the risk of fainting by increasing blood flow to the brain.

Whether to feed or not: This is a very common mistake that we allow the injured to drink water etc or keep on pouring water into the mouth at the site or during shifting. It is safer not to give the patient anything to eat and drink. Even if the person complains of thirst, give nothing by mouth. This is to protect the patient from vomiting in case he needs anesthesia for some surgery, or has a head injury. In an unconscious patient this water instead of going into the stomach can go into the respiratory passage and can choke it.

[B] Transportation of Victim to Hospital

The next course of action is the transport of the victim from accident site to an appropriate nearby hospital. If the ambulance team has already joined the rescuers, the team will make an arrangement for transport, once the job of giving the first aid is completed. If no ambulance services are expected to reach there and the condition of the patient is deteriorating, it is preferred to arrange some other transport. For this a van, bus or any vehicle having a long seat is preferred where there is enough space to keep the patient's back straight and the person accompanying should be able to care for and resuscitate the patients if necessary.

1. Shifting to ambulance: The patient should be carried on stretcher so that the spine remains stable. If a stretcher is not available, a hard board or ladder or a flat seat of a bus can be removed. While shifting, the patient's back, neck and airway need to be protected. So always take the help of other persons if needed. If the patient is unconscious, gently place a large folded cloth or towel under the neck so that the neck doesn't sag against the ground. If there are no evidences of internal injuries, head or spine injury, the patient can be shifted in a sitting position.

2. Care inside ambulance: Paramedical staff can continue the remaining part of resuscitation procedures or can administer other therapy required for it e.g. IV fluid line, oxygen, drugs, etc. Sometimes owing to the presence of crowd, inadequate light outside and better facilities inside van, you feel more comfortable in giving the first aid inside the ambulance. During transportation keep a watch over patient's breathing, pulse and blood pressure and if possible pulse oxymetry.

If the ambulance team is in contact with a hospital, it can inform them well in advance about the specialist/specialists who would be needed and also the preparation to be made when the patient arrives at the hospital. This is expected to help doctors match the timing to perfection. Even blood grouping can be done on the way so that the blood of the corresponding group can be arranged in advance. The drivers should avoid over-speeding as this may not only be a cause of another accident but also the bumpy ride can be risky for the injuries.

3. *Choose a correct destination:* Besides giving first aid, the pre-hospital care team should assess properly the severity of injury so that they can transfer the injured to a proper hospital according to the level of care required by the patient. Thus the team should also know about all nearby government and private hospitals in that region, not only in terms of distances but also regarding the level or quality of care available there. This will avoid an unnecessary referral from one centre to the other. Sometimes a case of serious or multi-system injuries, requiring a quality care with urgent surgical intervention, is first carried to a small centre where nothing more than the facilities of dressing are available and ultimately it has to be taken again to a better center causing loss of precious time.

On the contrary, a patient having minor injuries is taken to a highly specialized center for the treatment and that unnecessarily increases the burden on these centers owing to less important cases. Thus in cases of serious injuries or multiple injuries, instead of smaller, prefer to go for bigger hospitals even if they are situated a little far away. Simple wound cases or fracture of limbs or where the condition of the injured is quite stable can be taken to smaller centre.

[II] Definitive care at hospital

The two dire medical emergencies that I know are the delivery of a distressed baby and a severely bleeding trauma victim, where every minute or rather every second counts. That is why an in-house dedicated trauma care team is to be there for 24 hours. Their response time to the alert call/siren should be like that of defence personnel or commandos. There should be clear-cut strategy or drill for the management of trauma cases. Medical authorities in the city should honestly evaluate its efficiency regarding trauma care in terms of response time, quality care in severe cases, and dealing with a sudden load of very high number of victims.

(1) Primary or Emergency care: We cannot deny the importance or the role of many minor but extremely important procedures for saving trauma cases [e.g. intercostal intubation, endotracheal intubation, treating shock with blood and IV fluids, etc]. They can be performed with low priced equipment or facility, e.g. laryngoscope, endotracheal tubes, self-inflating bag, airways, suction apparatus, etc. It has been seen that many times it is not the availability or funds that is a problem but the lack of an organized approach or will instead.

(2) Specialized care: Comprehensive trauma facilities in hospitals under one roof are the cardinal requirement for the best results in dealing

with the serious trauma patients. The trauma of the accident victims varies widely involving a wide range of specialist [orthopaedic, general surgery, neurosurgery, thoracic and vascular, plastic surgery, etc]. Besides this, a tertiary level ICU care including ventilator and round-the-clock availability of investigations are extremely necessary if we really want good results.

The definitive care is purely a job of the specialists, so a detailed description is not necessary here. However, pre-hospital care is really an area where every one of us can contribute, that is why this has been discussed here in greater detail.

PRESENT STATUS OF TRAUMA CARE IN INDIA

This was mainly the 'theory part' that we have just discussed above and now we come to the ground reality in our country. If we really want to improve our trauma care we have to go into details to understand ground reality today. For every death that occurs in a road accident there are 15-16 persons who sustain serious injuries. So, considering the present death rate in road accidents as 1.15 lakhs per year, there are around 17-18 lakhs injured people needing emergency help and treatment annually in road accidents only. However, if we include all the trauma cases, this figure would be much higher and according to a study on the present status of trauma care in India, about 150 lakhs injured people expect trauma care in India annually.

Trauma care in India is still in an embryonic or nascent stage. Trauma care is neglected in most parts of the country and whatever there is, is very sub-optimal and mainly urban-oriented. Except in capital cities, in most of the districts the pre-hospital care, adequate hospital care including critical care facilities and availability of team of super specialists for polytrauma is virtually non-existent. Even in metros, so far as government health system is concerned, both the pre-hospital care and adequate hospital care are less than satisfactory. The fact is that at present, both at the Centre and a State level, there are no organized trauma care services or controlling units. Owing to this, the outcome in road accidents is extremely poor especially in the polytrauma or multisystem injuries. This is also reflected by the facts that mortality in India in serious accidents is six times greater than in developed countries and similarly the mortality rate per kilometer of travel is also seven times more than that in foreign countries.

It is an irony that in India a severely injured road accident victim lying in a pool of blood may fail to attract the attention of even a single person among the commuters or the spectators standing barely a few feet away, while on the contrary a struggling human life 70 feet deep in the bore well, may attract the attention of the whole nation. I don't

see any example worse than this to see such a discrepancy in attention and attitude of the Indian society as well as of the government towards human life. Similarly, in a terrorist attack or communal violence, even a few injured get much better care or attention so much so that not only the Chief Minister, even the Prime Minister feels it extremely essential [or rather a political compulsion] to visit the victims and show their 'serious concern' or sympathy to them. In actual fact, this 'show of serious concern', instead of helping the victims, causes more problems to the treating doctors who, instead of giving real treatment, are more occupied in maintaining a law and order situation and on commenting on medical bulletins to media that becomes hyperactive in such situations. On the other hand, dozens of injured in an accident may fail to get the attention of even local authorities. Evidently, emphasis must shift.

[A] Present status of Ambulance Service

At present no national or regional guidelines exist for pre-hospital treatment plans and transfer protocols. In the absence of guidelines, decisions about evacuation of the victim and the choice of the destination hospital are often made individually by patient's relative or those who come forward to help.

1. *The Service:* As far as emergency help is concerned, most of the time it is not the ambulance or first-aid team, but the common public or relatives who hire a transport to take the injured to the hospital. Even in metros which have relatively better health care, only 16-20% of victims are transported by an ambulance.

2. *The response time:* As compared to developed countries, in India, the average response time is much longer with the result that lives are lost that with a quicker response time might have been saved. In developed countries, the average response time is eight minutes and facilities for telephone or asking for help is available at less than a mile. Thus, implementation of the 'golden hour' concept still appears a distant goal in India.

3. *The Number of Ambulances:* The total number of ambulances is less than 10,000 in our country and they mainly belong to private hospitals or NGOs. These are supposed to provide help for all kinds of medical emergencies and are not dedicated to trauma care only. At present only 30% government hospitals have ambulance. The Ministry of Road Transport and Highways has provided 509 ambulances for road accident victims under National Highways Accidents Relief Service Scheme (NHARSS) during the last nine years(2000-09). Considering the total number of trauma cases [as mentioned above] this number is too small to manage

them. Although many private hospitals in big cities are providing efficient pre-hospital care this covers only a very small area or segment of the population.

4. The Training Status of team: Currently, only 4% of the ambulance personnel have been found properly trained for handling trauma victims. It is really sad to find that the most unskilled staff are given the job to handle the most delicate task! Regarding the number of paramedics in the ambulance, it varies considerably. One-third of ambulances serve only as transport vehicles with only a driver and no paramedic staff. Only 28% of the ambulances have two or more paramedics.

5. The Equipment: The type and quality of ambulance equipment for emergency life support and monitoring are very poor. Only a few are equipped for providing airway support and appropriate splinting. Most of them lack a comprehensive network operating between hospitals and ambulances.

[B] Present status of Definitive care

Care for trauma victims is offered either by government or private hospitals.

(a) Government hospitals: So far hospitals of Delhi, state capitals and those that are associated with medical colleges or universities, are providing a reasonable good care. However, on the other hand, the district hospitals often lack adequate infrastructure for management of polytrauma in terms of trained staff, supply of consumables and critical care. The poor public health infrastructure means that patients often do not receive appropriate care promptly. This delay compromises the results. Some ground realities/facts in relation to most of the government hospitals can be summarized under following points:

1. A very high mortality rate even after reaching the hospital: It is true that deaths occurring at the spot or within few minutes, that are largely due to severe impact, are at present not under control even in the developed countries. However, it is very very sad to find that even among those who are reaching alive to the hospitals, a significant number dies during the hospital stay. In developed countries, only one out of 200 seriously injured accident victims dies in hospital while in India one out of every six seriously injured victim dies after reaching the hospital. Even in metro cities, out of the total deaths, 48-64% victims die after the hospital contact. There is little to imagine for the smaller towns or rural areas. Thus, response time and pre-hospital care are not the only important factors determining good results, the quality of post-accident

definitive treatment at the hospital also has a bearing on whether an accident victim survives or not. So even if you shift or transport the accident victim in the best possible way to the hospitals, you cannot relax thinking that now the things would move in order.

2. Available personnel and their skills often do not match the needs of the patients: There are not many dedicated trauma surgeons in India. Most hospitals are capable of dealing with mainly orthopaedic problems, hence only if it is purely a fracture in limbs, a good survival is expected. In the remainder, where there are multiple injuries, the results are poor. Responsibility is not clearly defined. In the absence of clear assignment of responsibility among specialists, clinical decisions are often delayed, putting patients with multi-system injury at a greater risk.

In a majority of district hospitals in the public health system, the casualty medical officer is the only one to respond. This is a striking paradox that the most seriously injured patients are frequently being dealt with by the very junior and inexperienced doctors. The concept of a dedicated trauma team that includes various super specialists to tackle emergencies of different fields is not there at all levels.

3. There is a lack of adequate facilities: It is really impossible in most of the district hospitals to start an operation at short notice. The much-needed investigations like X-ray, ultrasonography, CT scan, blood tests, etc. are not available under one roof. If at all some of them are available, it is only up to 2 p.m., while facilities for such tests for all the 24 hours is virtually mandatory for a proper trauma care. Often, willing and competent doctors feel handicapped for want of such facilities. It is also true that whatever equipment or facilities are available in the government hospitals they are not properly used owing to lack of co-ordination or drills. We blame unnecessarily the lack of funds, etc.

4. High referral rate: According to studies conducted by WHO Collaborating Centre for Injury Prevention and Safety Promotion, nearly 30 to 40 per cent of the cases in government hospitals are being referred to another one. This could be due to poly trauma requiring super specialists, lack of critical care or lack of some special investigations like CT scan under one roof. This frequently delays the definitive treatment and hence the survival.

(b) Private or corporate hospitals: In India, in general, about 60-70% of health care services are provided by private health sectors and if we consider it for the trauma care, even much larger groups seek private treatment. Private and corporate hospitals that provide tertiary or quality care are located mostly in metro or big cities. No doubt they

provide much better trauma care in terms of specialists, modern diagnostic and imaging facilities and intensive-care units. In any case they are very costly. In India or developing countries, pedestrians, cyclists, two-wheeler riders and passengers in buses, constitutes more than 70% of the injured and belong to lower or middle socio-economic groups. These groups cannot afford out-of-pocket payments for health care in such better equipped private health facilities.

Besides these big hospitals, a large number of small clinics and nursing homes are also providing the trauma care across the country. However, a majority of them lack critical care or comprehensive trauma care facilities. Such small set-ups are suitable only for simple injuries.

WHAT IS TO BE DONE?

Despite significant overall progress in many other medical fields, 'Trauma care for all' continues to remain a distant dream in India even in 2010. For an example we have world class medical facility for cardiac and other diseases, though this quality care may not be accessible to all. However, trauma care for accident victims is still not available to even those who can afford it on their own. There is a need for an affordable, effective and well-organized trauma care system to receive, stabilize and treat all the victims of accidents.

As we have discussed in chapter 2 [Road Accidents], the trauma care at a national level can only be provided through a big organization like the government. Thus there is a need for an independent single agency in Ministry of Health under which all the trauma care medical units of the state and National trauma systems can be brought together.

The three main aspects or pillars of the trauma care are [1] referral or specialized trauma centers for providing advanced care to serious or polytrauma cases [2] Smaller or satellite trauma centers capable of providing care for simple cases [3] an excellent pre-hospital or ambulance service. It has been found in surveys that out of total deaths in accidents, about 24% can be prevented only by providing simple trauma care after accidents while 46% can be prevented only by providing much advanced trauma care and the death in rest 30% is not preventable by any intervention except by taking primary preventive measures.

What would be the best module for trauma care? Although some modules have already been suggested by the government in the last few years, still I feel there is a need for more serious discussions on this subject. A detailed discussion of this planning is beyond the scope of this book. However, I would like to mention some relevant points that need greater attention or elaboration.

[A] Whether to form a separate chain of trauma centers or existing health services to be involved or upgraded?: So far as advanced trauma centers are concerned, I believe a separate chain is essential and this should not be merged with the existing health system. Nothing is wrong if geographically they are located within the premises of the existing government hospital complex. However, it should be totally independent in terms of budget, power, transfer policy, etc. Why?

1. Trauma care is an entirely different kind of health care. The team or specialists, the type of work, the requirements regarding equipment and the design of building are entirely different. Trauma care needs not only surgical specialists but also a highly specialized set-up that is quite different from that of present centers that are providing all types of care.

2. The state-run health services in most parts of the country are on the verge of failure already. I believe if the trauma care is merged with the existing medical networks, the chances of success are much less. If you want to start a new industry and if you join a unit already declared sick, I believe there are greater chances that the project will not succeed.

3. If the defence services, ESI or railways can maintain their separate chain of health care, then why not trauma care? Among the top three killers i.e. cardiac, cancers, and the trauma, we see in many metros or big cities exclusive cardiac or cancer centers are being opened. However, we do not see this trend for trauma centers either in government or corporate sectors.

4. At present, already there are hundreds of health schemes or national health programmes that are being run through the existing health system. In fact, the present district hospitals are the outlet for the implementation of each and every National or State health programme irrespective of the fact whether its infrastructure allows it or not. In such a scenario, proper justice to trauma care will remain doubtful. Even the concerned authorities would easily find excuses if this programme does not yield desired results.

5. Considering the magnitude of the burden of trauma patients, I feel the hospital capacity would be totally used in catering for them and it would hardly be able to provide any service to non-trauma cases.

6. Why did the government realize that in the Ministry of Surface Transport, there should be a separate department to deal with highways with independent power and funds? Similar grounds also exist for the need of separate section in Ministry of Health for the trauma care.

[B] About the Location of advanced centers: If some new trauma centre is to be started in an area the question comes where it should be located, inside the city or along the highways? As far as location of the advanced trauma centers is concerned their utility would be more cost effective and purposeful if located within the city. The reasons are: [1] A significant number of accident victims come as a result to accidents occurring inside the city. [2] Out of the total trauma cases road accidents constitute only 23-25% while the rest are owing to other kinds of injuries and come mainly from the city and need a similar kind of medical facility. [3] Highways [State and National] constitute only 6% of the total road networks so it will not uniformly cover all the road accident victims. What would we do for other 'district to district' roads that constitute about 14% of the total road network? As far as location within the city is concerned, it should preferably be on the ring road as it can be approached easily from all directions.

Regarding the total number of such advanced centers and choice of the cities for their location, it can be decided according to budget available, population density of the particular region, number of accidents occurring in that area [I mean purely on non-political basis and irrespective of the fact who represents the area or the constituency].

[C] About Satellite trauma centers: The smaller trauma centers are supposed to deal with simple cases. In this regards, unlike specialized centers, it is quite justified that the hospital that already exists on roadside or hospitals of the towns on the way, may be upgraded for this purpose.

[D] About mobile services: Today with the advancement in the mobile phones network, it is quickly possible to involve such units. I believe it is this area of mobile health units that needs greater attention both in terms of number and quality of service. The reason is that at present the various small health centers, that are present on the highways between two cities or in the nearby towns, are so poorly equipped for trauma care that you hardly get anything beyond the dressing of the wounds and that too only for a certain hours of the day [up to 2 pm]. Ultimately, these serious cases have to be referred to specialized centers and valuable time is lost in this. We don't feel this scene will change in the near future even if we start taking action right now. In this situation these mobile units are better because they are especially equipped for accident cases. In fact, this well-equipped van with a good team would become a 'small mobile hospital' and instead of taking the patient to such a center, it can be said the center itself would reach the patient. Besides this, while providing primary care on the spot and inside the van the victim continues to move towards the specialized hospital, thus

minimizing the time lag between the accident and of definitive care. If we consider in terms of budget required, their installation and running cost that too for 24 hours would be much cheaper as compared to upgrading these community centers.

Laws regarding Responsibility of Doctors and Hospitals

Following the Supreme Court order in 1989, the Motor Vehicles Act was amended in 1994 to make it mandatory for doctors to render medical aid or treatment without waiting for any procedural formalities, unless the injured person or his guardian, in case he is a minor, desires otherwise. The Supreme Court has observed: "Every injured citizen brought for medical treatment should instantaneously be given medical aid to preserve life and thereafter the procedural criminal law should be allowed to operate in order to avoid negligent death. There is no legal impediment for a medical professional when he is called upon or requested to attend to an injured person needing his medical assistance immediately. The effort to save the person should be the top priority not only of the medical professional but even of the police or any other citizen who happens to be connected with that matter or who happens to notice such an incident or a situation". Thus all hospitals in the country must compulsorily provide basic minimum care to accident victims, irrespective of their ability to pay. Hospitals should also avoid unnecessary referrals i.e one cannot refer the injured to another place on the ground that medico-legal cases are not dealt with at that place.

Practical Problems for Doctors and Hospitals

The court has the best intentions in giving strict instructions to the private hospitals in favour of such victims. However, the court should also look upon its practical aspect that the management of a critically injured person is not confined to dressing or bandaging only, instead it involves a lot many things. It may require a prompt intervention of more than one surgical team requiring use of OT, ICU, investigations, lots of medicines and disposables if we really want to do the best in favour of the victims. Even if the doctors do not charge any fee, there is going to be a significant financial burden to the hospital maintenance. If in such a costly affair where there is uncertainty about the payment or the patient expresses inability to pay later on and coupled with the fact that the incidence of accidents is increasing very fast, it would not be practically possible for every private hospital to help such victims as best as possible. It is quite possible that under pressure of courts, these hospitals may admit these cases on record. However, that sometimes may not be more than a formality as further steps regarding the management may not be

that prompt.

At present even in most of the government hospitals, most of the medicines are to be bought by the patient's people themselves. In such cases how does one expect that private hospital should arrange it for them? As far as implementation or execution of this law is concerned, even the most prestigious private hospitals of Delhi that have been given highly subsidized lands for hospital buildings [thus having moral and legal commitment to serve] are still not giving the subsidized or free treatment to the minimum quota allotted to them. If the government has no control over these real big profit-making hospitals sitting right in the National Capital, how can it expect that the other smaller hospitals lying thousands km away would follow it?

Instead, there should be some practical solution to it. There should be arrangements for some buffer funds, insurance policy for such victims at the national level [from government, highways authorities, RTOs, etc.], making urgent contact to some NGOs that have shown interest in helping such cases, tracking the relatives of the unidentified immediately with the help of network of police, radio and television, etc. To streamline these services, I feel there is a need for a National Programme for the road accidents victims like that of polio, TB or AIDS.

Responsibility of driver of the vehicle causing accident

Following the amendment in Motor Vehicles Act in 1994, it is mandatory for the driver/owner of the vehicle to take the accident victim to the nearest doctor or hospital. It reads as follows: when any person is injured or any property of a third party is damaged, as a result of an accident in which a motor vehicle is involved the driver of the vehicle or other person in charge of the vehicle unless it is not practicable to do so on account of mob fury or any other reason beyond his control, take all reasonable steps to secure medical attention for the injured person. He should give on demand by a police officer any information required by him or if no police officer is present, report the circumstance of the occurrence, including the circumstances, if any, for not taking reasonable steps to secure medical attention as required under clause (a) at the nearest police station as soon as possible, and in any case within twenty-four hours of the occurrence. Otherwise he may be charged for 'hit-and-run case'. If no other vehicle is involved in the accident e.g. you crashed against some tree or other objects, there is no compulsion to inform the police.

If a mob gathers and you fear for your safety, then take your vehicle and run to the nearest police station and tell them the situation.

In case a charge is being made out against you, you must know under what section you are being booked and always keep a copy of complaint with you. In the benefit of you and your vehicle, it is advisable in such circumstances always try and resolve the matter amicably with the other party. Proceedings of the formal charges may be a big nuisance to you. Once a complaint is lodged, you will have to hand over all necessary papers of the vehicle, including the driving licence and the vehicle will be impounded by the police station for a very long time.

What is expected from the society?

Today the passerby commuters hardly pay any attention to the dying accident victims. Remember that your contribution will not only help others but you yourself may require such help. Nobody knows who will fall victim of road accidents. Even the VIPs, whether it is Princess Diana or ex-CM Sahab Singh Verma or former union minister Rajesh Pilot, have lost their lives in a road accident. You never know what would be the situation at the time of the accident. You may be either a sufferer or a rescuer at the time of accident. The injured person inside the vehicle or on the road may be alone and lying unconscious in the pool of blood. He may be rich and able to afford the expensive treatment, but here he is totally at your mercy. Why have we become like this?

In today's world of kaliyug where the people are not paying attention to their real parents, why do you expect that some moral teaching would effect a change in their attitude? We should think of some more practical solutions. A passer-by can at least make a call to such a unit/police. Considering the very poor ambulance service in India, I feel that there is a tremendous scope for various charitable organizations in India. Instead of waiting for the government to think and rethink and then implement any firm policy as there are so many ifs and buts, it is expected that we ourselves come forward to help/start such services in and around our city. It is true that making some big trauma care centers requires much more budget and planning for charitable organizations but running an ambulance service is something that can easily be considered.

It is true that there is no dearth of donors in India. There is an extremely rich class that never hesitates in donating bags of gold and jewellery for temple construction. It would be much better if this class also makes some donation for the construction of trauma hospitals as the building of the hospital is in no way less than sponsoring a temple. It would be much better if you earn the blessings of god through serving the crying victims of road accidents.

Above all, it is up to the people to shed their apathy towards

an accident victim because of hassles they may suffer later. Remember it could be you who could be the victim and you could die because of someone else's apathy.

Accidental Deaths and Organ Transplantation: a neglected issue in India!

Present status: At present in India, every year around 1 lakh people need kidney transplants while 60,000 people need liver transplants. For these people an organ replacement remains the only dream for cure. But actual transplant is possible only in 3% of these cases while rest of the cases ultimately die in due course of time mainly due to unavailability of the organs. To prevent organ trafficking, the present Human Organs Transplantation Act [1994] restricts the living donors to blood relatives and spouses only. But at the same time, it legalized the concept of cadaveric transplant or organ procurement from brain dead patients. However, even after 15 years since this Act has come into existence, a cadaveric transplant programme has yet to take off in India.

At present whatever transplant surgery is being done is mainly based on living donors. Even in cases where the blood relations are ready to donate, only in one third of cases it is actually possible after the tests and matching. So for the majority of such dying cases cadaveric transplant remains the only hope. Unlike most developed countries, where cadaveric transplantation programme is very successful [In US 80% and UK 70%], in India it is possible only in less than 2% cases. On the contrary, more than 1 lakh accidental deaths occurs every year in this country, but only a handful of cadaver transplants take place. Thus a proper cadaveric transplant programme in India where we can utilize the organs of these dying victims of the accidents could save a large number of dying patients from the end stage organ failure.

What are the hurdles?: The main reasons why organs are not donated or cannot be procured can be summed up as follows.

1. Unlike eye donation, [that is possible after actual or clinical death of the patient], other organs like kidney, heart and liver have to be removed at the brain-dead stage where these vital organs continue to work normally. So the relatives feel that the patient, in reality, may not be dead. When his heart is beating, he looks normal, so why remove organs in such circumstances? This is what they ponder.

2. There is lack of awareness among family members as well as doctors.

3. Lack of infrastructure for organ procurement and transplantation in that geographical region.

4. It could be against one's religion.
5. Fear of body mutilation, not getting the body back in time, harassment in paper work, etc.
6. Misbelief about missing organs in future births.

On the other hand, this is also true that many a time the family members have a desire to donate organs but they do not know how to go about it or even the hospital staff does not know how to take the initiative in such cases.

What is to be done? The following issues need to be addressed:

[a] Proper Infrastructure: The first and foremost requirement is to establish a proper infrastructure for cadaveric transplantation in India. This includes:

1. A proper national database or centralized registry online for all the patients that are waiting for organs. This should be based on several factors like blood group and tissue typing, medical urgency, time on the waiting list, geographical location, etc.

2. Establishment of an organization of transplant coordinators: Although in India we have many medical centres where adequate facilities for transplantation along with competent transplant teams are available, it is the network of the transplant coordinators or agencies that are mainly lacking. Whenever an organ is available, transplant coordinators come into action and coordinate mainly with the three teams, viz: 1. hospital authorities where the brain dead patient is under treatment. 2. The nearest retrieval team that can come and remove the organs from the brain-dead patient. 3. The transplant team. Based on the national registry, they locate the most eligible waiting recipient in the country and make arrangements for its transfer to the recipient where that particular organ transplant team is waiting to do the transplant.

To prevent damage, the organ transfer should be quick and that frequently requires a helicopter or air service.

3. Besides, a separate local team of counselors to guide and motivate the relatives of the brain dead to donate the organ is also required. 'How to approach the relatives of a brain-dead patient' is a very sensitive issue and needs a very good understanding. Here we can take the help of local social organizations, psychologists, religious leaders and the family physician of the patient who is in contact with the family for a long time and on whom they rely more. Obviously, the doctors of the transplant team are not allowed by law to do this by themselves.

[b] Financial: The organ transplantation is not only costly from

the recipient's point of view but also from the donor's [cadaveric] point of view. For a brain-dead patient to become a donor, he has to be kept on ventilator or life-support machines, so that blood circulation continues. Following the consent of the family this ICU care has to be continued till the blood tests, tissue typing is completed and an organ retrieval team comes to do its job. This ICU care is very costly. Although most of the time the recipient may agree to bear these expenses, who is going to be the recipient can only be known after the basic evaluation of the donor. So till then who will be responsible for the expenses? Here arises the need and role of medical or third party insurance.

[c] Social: Like blood or eye donation, people should come forwards to discard superstitions and change their attitudes towards organ donation. Organ donation is a way of "giving something back" to the society. It costs nothing. If one dies, one's organs can save the life of several people [at least 8-10]. A young person of productive age group who is attached to a dialysis machine could return to full-time work after receiving a kidney. It is essential that our family and loved ones know our wishes, so that if death occurs, the family should let the attending doctor know about what the deceased person wanted. One can carry an organ donor card or can indicate his wish for an organ donation on driving licence.

In some countries, like Belgium or Austria, there is a concept of 'presumed consent'. If one has not specifically mentioned that he does not want to donate the organs, then it is understood that the organs can be removed at the brain dead stage. However, in India, right now it would be too strong with a scope for its misuse, so probably it needs a thorough debate before making such a law.

[d] The media: In addition to doing some sting operations and informing the police about illegal activities of organ trades, the media should also address all the real issues or hurdles [as mentioned above] that are related with transplant programme in India. Sometimes an over-enthusiastic approach of the media in scandals related to organ trades can cause great humiliation and embarrassment to the whole transplant fraternity. During the last decade the transplant programme has virtually come to a standstill. How it can be justified that a wrong practice of a handful of professionals should be made a ground to make a generalized image of whole transplant programme as if it belongs to a group of mafia or vultures.

Chapter - 15

PETROLEUM SUBSIDY: RIGHT OR WRONG?

The petroleum subsidy that used to be a minor issue a few years back has now become a very vital issue that is capable of not only affecting the economy of the country but also the fate of the government in power. Though this issue is not associated with the traffic problems directly, it affects our fuel economy, environmental policies, automobile industries, transportation and the pocket of every commuter on the roads significantly. At present whatever knowledge we have about petroleum subsidy is mainly based on the information given by the government and oil companies. We should know this in a little more detail that would probably help us to make a correct decision about this. In this regard, here I am raising 11 relevant points in relation to petroleum subsidy, please go through these and decide yourself for an answer regarding the need for petroleum subsidy in our country.

[I] Petroleum Subsidy: a discount or real loss?: I would try to explain this with the following example. Suppose some garment company makes an item with a production cost of Rs 50 and keeps its selling price Rs 100 at its outlet. If due to some business policy the company sells these same items @ Rs 80 instead of Rs 100, then it would be called a discount of Rs 20 per item. The company does make profit [Rs 30], but not to the extent that it chose initially [Rs 50]. Now, if the similar item is sold @ for Rs 30, then it is an actual loss to the company amounting to Rs 20. Almost similar situations also exist with the various petroleum products.

At present [Dec. 2009] the production cost of petrol at the refinery level is around Rs 20 only and the proposed selling price including all taxes comes around Rs 49. The government is obliging us by giving a relief of Rs 4 in the form that instead of charging Rs 49 it is charging Rs 45 per litre. Now you can very well understand that this so-called 'relief of Rs 4 in petrol price' is basically a discount and not a true loss to the government. Thus it is the various central and state taxes [that too at incremental rates] and other complex charges like freight equalization levy, cess, reduction charge, RPO factor, etc, that really make it costlier by 145%.

As for under recoveries in petrol or diesel, it basically fits in with the definition of discount where the profit is not as per the agency's [oil company or government] expectations but certainly the company is not in loss. Yes, as far as under recoveries of kerosene and LPG are concerned it probably belongs to losses or true subsidy. Despite the loss on LPG and kerosene, the profit earned on petrol and diesel causes a collective net profit to these agencies.

As common citizens, we frequently see that news related to petroleum pricing have a paradoxical messages, making the common man utterly confused. For example, on one hand, a few weeks before the proposed hike, there are news like 'Subsidies driving top oil companies bankrupt', 'Oil companies are bleeding and losing 'X' hundred crore Rupees per day due to subsidy', while on the other hand, we also read that 'Despite incurring heavy losses, India's oil companies are among the top profit-making companies of the country. The Oil and Natural Gas Corporation retained its position as the highest corporate taxpayer and paid Rs 9,557 crore on its profit for the financial year 2007-2008'.

Even in the days of the severe crisis when crude oil prices were at record high [April-June 2008] the ONGC earned a net profit of Rs 6,636 crore in three months despite paying for the subsidy for all petroleum products [i.e. domestic cooking gas[LPG], kerosene, petrol and diesel]. What does it mean to the people? When asked about the discrepancy in these statements, the company people frequently explain that this profit is actually not on petroleum products but on the sale of lubricants, etc. It is like some automobile company commenting on its profit that it is not on the sale of vehicles but on the sale of accessories.

Similarly, the story of the government, the second party that suffers similar so-called 'heavy losses' due to subsidy, is also very interesting. On one side, there is news or statements like 'petroleum subsidy bill has reached a staggering high and is severely affecting the government's budget', etc. Yet on the other hand, we see the news that government earned from taxes Rs 1,50,000 crore in the year 2006-7 [that was only Rs 40,000 crore in 2004]. This shows that in spite of the discount and so called subsidy the actual income of government is increasing. Since the consumption of petroleum products is increasing by 11% every year, revenue is also bound to increase.

These paradoxical and contradictory news items force us to believe that the two so-called big losers i.e. oil companies and government 'play' in such great sync not only to make a huge profit out of the oil industry but also play with the psyche of the common man to get his sympathy. The general public at large, which is not aware of the real situation, thinks

that whatever the government is doing is correct and justified. What a drama! In view of all this, the plea made by the government and oil companies regarding price hike is more like frustration that despite the oil industry being a very lucrative 'business' having vast potential of huge profit making, the two are not getting the profit up to their expectations.

[II] Subsidy: a moral commitment of the government: There is a question why we need subsidy and why it should continue?

In India, there is a great economic inequality. This subsidy is basically a temporary or interim measure to support the poor till the government is able to remove this disparity. This is almost similar to that of a reservation issue in our system where the government feels that a socially backward or underprivileged segment of the population needs a special consideration. So reservation in various jobs and education systems is nothing but the subsidy to a special social segment till such a period when the government removes the social inequality. It is an irony that still in 62 years neither the economic nor the social inequality could be reduced or removed in our country. So far as the issue of reservation is concerned, at present not a single political party has the courage to reduce the reservation quota, instead, all are trying hard to approach 100%. Then why does the government not want to continue the subsidy for petroleum when the basic reason or philosophy behind it is the same.

[III] There is almost a direct link between petroleum prices and inflation: A rise in a petroleum price affects right from the industrialist to the poor man on the road. The hike causes a disproportionate short as well as long-term cascading effect on all fronts and commodities. Surveys have proved that a hike of petroleum price by 4-5% can increase household budget of the common man by up to 23%. The fuel category carries a significant weightage [4.7%] in WPI. It is frequently seen when there is a rise in diesel cost by 10% the truck operators invariably increase the freight charges by 20%.

Hike in petroleum prices in June 2008 serves as a perfect example to explain this. Immediately within a week after hike in the petroleum prices, the inflation rate sharply increased to a record high of 11.05% of its 13 years duration. More importantly within a short period of one week a rise of inflation by 2.31% was also a record. That was much more than expected by the learned economists of the government who expected a rise only by 0.5 to 0.6%. In such cases even if the government reduces the price of the petroleum if permitted, the vast 'after effects' of the inflation rarely get reversed. This we observed in January 2009 when the fuel price was decreased [petrol by Rs 10 and diesel by Rs

5] but we did not notice any significant reduction in the prices of basic commodities. Here it is necessary to mention that in India we are using the Wholesale Price Index [WPI] while most developed countries are using a more sensitive index i.e. Consumer Price Index (CPI) to calculate inflation. It is observed that the actual inflation as per CPI [i.e. retail price of commodities at your nearby grocery shop], is 4-5 times more than the government figures of inflation rate. This contrast between these two indices of inflation i.e. Wholesale Price Index and Retail Price Index was also very much evident in July 2009 when the petroleum prices were hiked. At this time the WPI was minus 1.5 while the RPI was above 8 showing how misleading the WPI is.

The government ultimately has to choose one out of the two measures to help the poor viz: providing subsidy on the petroleum or taking measures against inflation and other extensive after-effects caused by withdrawal of subsidy. I believe the former is better. However, the government avoids choosing the former option because the brunt of subsidy has to be borne by the government itself while in case of choosing the latter option the brunt is borne by the poor of the country and is not a headache of the government in power.

I think that those learned economists in the Finance Ministry who do not favour subsidy should seriously analyze each and every aspect of subsidy honestly with short as well as long-term implications before coming to a decision. There is a class among the modern economists who believe more in the growth rate of the country than its inflation rate. They feel now that the Indian economy is growing fast, so why worry about the rise in the inflation rate. I don't know what this so-called 'record above 9% growth rate' really means to the poor who are using kerosene for lighting a hut or a domestic help using city bus to commute. For them it is more important to know whether this '9% plus' growth rate is really improving their standards of living and lifting them above the poverty line or not. I believe out of the two i.e. growth rate and the inflation rate, it is the faster inflation rate that affects much more adversely the common man and creates more economic instability in our system as compared to a slower growth rate of the country. I also believe that a faster growth rate mainly helps the people of higher economic strata while a low inflation rate benefits people of all economic strata.

[IV] Why such a hue and cry for a small amount of subsidy?:

The issue of petroleum subsidy is probably being disproportionately exaggerated. Out of the total subsidies only 4% belongs to petroleum while the bulk of the subsidy [87%] goes to food and fertilizers. Petroleum subsidy at present is well below the 1% of the GDP and presently even

the total amount of all subsidies is less than 2% of our GDP. Furthermore, this total Indian subsidy is lesser even from average subsidy of the whole world [that is around 4% of the GDP] including the most developed countries. Then why are the learned economists so much against the subsidy business in India.

[VII] Is the reason for 'Misuse of subsidy' adequate to discontinue it?: Besides economic burden to the government, the misuse of the petroleum subsidy is another strong point that is against subsidy. Let us examine whether there is any other variety of subsidy that is not being misused to lesser or greater degree. Regarding fertilizers subsidy, all farmers who are using fertilizers are not genuinely poor. It is a fact that rich farmers are benefited most as they purchase in bulk. In some North Indian States farmers are millionaires and have been maintaining a rich life style, having SUVs and all kinds of luxury items. Similarly, the major part of the highly subsidized food does not reach the genuinely poor man, waiting at the receiving end for the various reasons [sent to black market, the actual poor are not having ration cards, food get rotten and damaged, FCI has not been working in all states having relatively a more poor population, etc]. Thus both food and fertilizers subsidies that constitute 87% of the total bulk are also not fulfilling their duties. Does it mean the government should stop it; or should we stop providing food to the poor at cheaper rates?

If in a langar (food court) of a gurudwara or in any temple, if some well-to-do people also join to have free food, does it mean the organizers should stop this trend? Certainly not. Similarly, it is true that in the Reservation Policy for jobs and education for socially underprivileged class is also being misused by the rich ones of the same classes. I don't think that any government at present time has the courage to withdraw this reservation facility merely on this ground.

If we are unable to curb the misuse, then it is our system's fault and not of the poor at the receiving end who are struggling to meet their two ends. So instead of stopping it, we have to find ways to minimize the misuse of subsidy. Modern government economists and the policy-makers now strongly hold that time has come for 'no more free lunch'. Unfortunately, many of the critical decisions on Indian economy are taken on the basis of some international studies and surveys, by the economists who know India more by reading rather than by experiencing it in the countryside. As regards politicians, as a rule, only those who are NOT in power say that petroleum subsidy should continue.

[VI] Why a huge tax for such an essential and useful commodity?: Today the government uses petroleum as a cash cow. Why

are taxes on petroleum products levied heavily similar to things like alcohol? In India, the total government amount of taxes [52%] on petroleum products are the highest among most of the Asian and developed countries. What does it show? Does petroleum belong to some entertainment or luxury items? As for diesel, except for diesel-based cars and personal utility vehicles [that constitute about 2.5% of the total motorized vehicles] we don't see any misuse or luxury out of the diesel that is being used by trucks, buses, farmers, or trains. Similarly in regard to petrol, in about 87% vehicles that are being used, it belongs to two and three-wheeler categories. I think most of the owners of these vehicles belong to middle class and use it judiciously and are in need of subsidy. Of course, car owners, both petrol and diesel-based, are financially secure and certainly are not eligible for subsidy. Our approach should be 'how to keep them out from this subsidy' rather than making a general opinion that increasing the price by tax would discourage misuse.

Just for information: the three main sources of income to the government are petroleum, alcohol and VAT.

[VII] Centre vs State issue: Out of the total revenue collected under different names from petroleum products, Centre and State governments share 63% and 37% respectively. Petroleum is mainly an imported item; the States are neither producing nor importing it directly, so the states have no reason to tax it. Then why are they getting disproportionate or huge revenue out of it? If at all, tax is justified on petroleum, it is the Centre that has the sole right to it. Why don't State governments come clean on this issue? It is very interesting to see that all the criticism or the public wrath regarding the price hike goes to the Central Government while the State governments enjoy only the revenue with 0% criticism.

[VIII] What about the 'forcefully-availed subsidies'?: Every year the government fails to recover large amounts of money from various private and government persons under various services like electricity, telephones, housing, etc. In the Power Sector only, State governments lose Rs 27,000 crore every year that goes waste due to under recovery and theft. Besides, on various government officials and politicians large amounts of bills concerning electricity, telephones, rent of forcefully occupied government residences, etc, remain under recovered every year. Though on record it remains as pending, everybody knows that it is next to impossible to recover it. So I believe all this is nothing but a forcefully-availed subsidy. This amount is many times more than petroleum subsidy but does not seem to be a big issue for the Government or the Opposition or for the futuristic economists of our country. Seeing the callous and reluctant attitude of Indian government towards one of such problems, i.e. forceful pos-

session of the government residences by its officers and politicians, the Supreme Court has sharply commented that 'even God cannot help this country'.

[IX] Why this subsidy pains government?: In case of direct subsidies like petroleum, the government is directly paying a monetary benefit to the people of India, as if the currency and money are directly being transferred from the government's pocket into the public pocket. For example, to purchase one litre of petrol that costs Rs 49 to the government, you have to pay only Rs 45 as the remaining balance is contributed by the government. That looks very odd. On the other hand, there are many more areas in which the government also provides a financial help to the countrymen, like health, education, etc, which are nothing but an indirect form of subsidies. The only difference is that instead of giving the money directly, it provides certain facilities to the people at a cost lower than the actual one. Out of the several thousand crores rupees under these various schemes of indirect subsidies about 85% goes waste or does not reach the actually needy people. But we don't raise this issue of waste in such schemes in that proportion which we make for the loss or misuse of petroleum subsidy.

Collecting large revenue from the public as tax and again re-routing it in the form of indirect subsidy to the public has some economic relevance only when our system works honestly largely in the interest of the general public. It has been accepted that out of Rs 100 that is taxed from the common man, only Rs 15 reaches again to him through these indirect subsidies or services and remaining 85% siphoned off in corruption. While in case of the direct subsidy the reverse is true despite the fact that some of it may be utilized by the rich, most of the budget allotted is utilized by the public only. In the present system of governance, if the government could reduce the tax burden on common men that would help them more than providing some little help after taxing them heavily.

A huge bulk of tax remains significant only politically, as while distributing the same money through various indirect subsidies the government has another chance to show as if this money is being paid in its behalf. However, the fact is that this is the public money that is being returned back to them in the form of various plans or indirect subsidies. Secondly, the government officials and politicians find indirect subsidies more useful as money passes through many sieves, meaning hands, so that it is 'properly' filtered before it reaches the poor.

[X] Need for more transparency in company's data: There is enough evidence to believe that the figures of losses by oil companies

or the government are exaggerated and notional. They are calculated on the global price of petroleum product basis instead of actual production cost at refinery level. I read on May 23, 2008 [Before the hike on petroleum when crude oil prices were at record high of \$130/barrel] that oil companies are losing Rs 600 crore per day. Then after the steepest hike in petroleum price by the government with simultaneous drop in oil price from \$130 to \$120, again on Aug. 9, 2008 I found that the combined loss of oil companies is still Rs 600 crore. I wonder how this data could be manufactured.

The companies cleverly include in subsidy many such expenses as are not paid in actuality. For an example it also includes all the expenses of the concerned departments and ministry of petroleum, including salary, bonus, etc. of all staff right from peons to seniormost officers. It is not less than a few thousand crore. So the balance-sheet of oil companies should also be scrutinized by some independent agency for the bogus expenses. With the help of these exaggerated figures, oil companies start making pressure and try to earn sympathy of the public and media.

[XI] Government is refractory to lower the price when situation permits: The companies and the government which do not lose any opportunity to hike the price are equally reluctant in lowering the price when the conditions permit. For example in June 2008, when the price was raised, the cost of crude oil was \$119/barrel. When the cost of the crude oil dropped significantly, the government refused to lower its price making a plea that the break even point for the companies of 'zero loss' is around \$67/barrel. Anyway, when the crude oil price touched the point of \$67, it again refused to slash the price saying that now there is devaluation in the Rupee so the break even point has come down to \$57. Even at the time when the crude oil price touched the figure of \$55, the government categorically refused by making the plea that 'it has just touched the desired figure and let it be maintained for some time say 4-6 weeks, only then we can consider to slash its price. Another plea by the government in this regard was that the companies have just started making profit so let them earn some profit for some time so that they can wipe out the net losses that have been incurred in the first half of the year. "Reducing the price of petrol and diesel now will wipe away this golden opportunity" it maintained.

However, when the crude oil touched the figure of \$43 it became difficult for the government to ignore the public pressure and had to slash the prices. Since the declaration of slashing the price was made just before the parliamentary elections, one was compelled to think whether

it was a matter of coincidence or government tried to get a political advantage. We also observed that when the oil prices started going down from August 2008, the ATF [air turbine fuel] was reduced by around 60% while during the same period the petrol for surface transport was reduced only by around 20%. I don't know what does it signify! I can only say that in India to commute from one city to another, a number of people using the planes, trains and roads everyday is around 1 lakh, 1 crore and 6 crore respectively.

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Dr. Sanjay and his wife Dr. Meeta are deeply concerned with the present environmental problems and believe that everyone of us can play a role at an individual level to improve our environment. In their new house, they have designed a different kind of domestic water harvesting for reusing the domestic waste water for kitchen garden and the lawns. Besides, they have also installed a modified rainwater harvesting system that requires less cleaning and can store more water in case of heavy rains. They are using the solar energy for hot water and garden lights.

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