



International Road Federation

5th Regional Conference
**INSTITUTIONAL ARRANGEMENT FOR
REDUCTION OF ROAD FATALITIES**

25 - 26 November 2010 | India Habitat Centre, New Delhi

**Panel Discussion on
Reforms Needed in Institutional Arrangement for
Reduction in Road Fatalities to 50% by 2012**

26th Nov. 2010

Mr. K. K. Kapila



Good evening ladies and gentlemen. We now come to the last session of this two-day conference which is the panel discussion. The intent here is to crystallize the recommendations of this seminar which we hope the government will be able to take forward in accordance with the commitment which have been given to us, and which was directed in the yesterday's opening ceremony.

Before we go to the recommendations, I will request Prof Sikdar to come up with the proceedings of these two days' conference briefly and then each of the panelists here would

contribute into this in about 3 to 5 minutes for shaping the recommendations from his perspective without duplicating which has already been said, and then we would finalize and read out the final recommendations of this conference.

Prof. P.K. Sikdar



All fellow panelists, I would like to divide the entire conference proceedings into seven major themes and will be mentioning what has been said about as a significant requirement for realization of targets for road safety. Not necessarily these are recommendations, as Chairman has already said that we will draw up from these conclusions that have been compiled.

So , first I take the theme of policy, administration and funding issues.

- (i) It has been said abundantly that, the autonomous road safety board, which is waiting for approval of Parliament needs to be cleared as early as possible with their counterparts in the states to effectively deal with road safety matters across the country on urgent basis.
- (ii) Create one center of excellence on Road Safety in every state. There should be National, Regional and Local Road Safety plans with targeted actions. Of course these are like task of Road Safety Board.
- (iii) National and International collaborations are equally important and these are critical for the success of Road Safety programmes, as many successful experiments are available from around the world. We should take lessons from those.

- (iv) To promote sustainable funding for second generation road safety programs, which are necessarily focused on crash reduction and injury prevention, are in top priority of World Bank funding so we must keep that in mind.
- (v) A portion of the country wide collection of petrol and diesel cess may also be apportioned for development and improvement of urban roads. Such a thing exists in U.S.A.

The second theme is the 'Institutional Arrangement'. Several interesting ideas emerged under this theme as follows:

- (i) NHAI has already established a Road Safety Cell and such initiatives are required in all such other agencies involved in road development in the states and centre for non-urban and urban roads. That means that municipal corporation should also have Road Safety Cells to deal with Urban Road Safety.
- (ii) Capacity building of stakeholders on road safety is a gigantic task and is required urgently to develop road safety culture in those organizations.
- (iii) Strengthening of Traffic Police and state transport departments as well as PWDs is an urgent requirement to realize the effective Road Safety delivery. That is what has been emphasized in the presentations from Kerala, Karnataka and all the other states, that there is not enough strength in human resource and expertise to deliver Road Safety, the way it is expected by people. Strengthening is required both in human resources as well as technology.

The third theme was Laws, regulations and enforcement. In this, the suggestions were that

- (i) legislation and enforcement of wearing of Helmets for drivers as well as pillion riders of all motorized two wheelers to be made strict everywhere.
- (ii) Similarly, legislate and enforce the seat belts for drivers and for all passengers of the car and all types of four wheel vehicles, both in front and rear seats very strictly. Many states still do not enforced it or otherwise law is relaxed.
- (iii) Enforcement camera to be installed, such as Red Light cameras, speed enforcement camera, wrong-way driving camera, etc so that we can catch all these violators.
- (iv) Higher penalty is required as deterrent for violations in traffic in respect of helmet, mobile phone, drunken driving etc etc..

The age old, rather small amount of penalty is not good enough at this time. There should be real deterrent penalties in terms of couple of thousand rupees for each offence.

The fourth theme of Engineering measures have generated lot of interesting recommendations.

- (i) Implementation of arrangements to promote safe systems approach for highway development process. Practically, saying that build only forgiving roads.
- (ii) Road safety audit should be considered mandatory requirements for all designs. That means that before taking up the work for technical and funding approval, Road safety audit must be completed.
- (iii) Road safety audits to be carried out further in construction as well as in operation stages, and there should be someone verifying it that compliance is there for the audit recommendations.
- (iv) All roads in the country are to be provided with signs and markings mandatorily as per IRC standards of.
- (v) All bus stops in urban environment are mandatorily to be provided with bus bays, to avoid delays, accidents, congestion etc and any safety hazard arising out of bus stops.
- (vi) Provision of pedestrian facilities, in terms of both footpath and crossings facilities in all urban streets. Road design and cross sections to meet all requirements of vulnerable road users. These requirements should be given the top most priority.

The fifth theme discussed was Education campaign and community involvement. In this theme the recommendations were,

- (i) Public education cannot alone improve road safety and should be coupled with engineering and enforcement programs.
- (ii) Education program should be carried out on partnership basis with community to give them a sense of belongingness and ownership. Success will be there only if it is designed with targeted goals. Also it was said that top down approach of educating the policy makers, bureaucrats, engineers, planners and enforcement officials is required to make any impact in the Road Safety, and it is to percolate from the top.
- (iii) Adoption of Road Safety uniformly in school curriculums to be achieved. The principle is to catch them young.
- (iv) upgrade existing driver training Institutes and schools by providing training of trainers and other advanced technology facilities , like simulators and so on.
- (v) Automated skill tests, as it is done in Karnataka and other places, may be used for driver testing and issuance of driver license in a very very transparent manner.
- (vi) All drivers in organized sector (fleet owners) should be fully trained in appropriate driving skills, and to undergo refresher courses every three years

with a built-in qualifying test. In organize sector it is easy to control and manage this.

The sixth theme handled has been Health and trauma care issues. The deliberations identified the recommendations as to,

- (i) Promote excellent trauma care system as implemented by GVK Foundation. They have already done in 9 states and 2 states they are going to do now. All states should have equivalent and similar kind of system and equipments, but it should be a similar rigorous system.
- (ii) Promote emergency services totally supported by technologies, as done in case of GVK system. GPS communication, medical technology, and everything in the top form to attend the road accident victims within golden hour.

One session was fully devoted to Innovative Technologies for Road Safety. This interesting area was also covered in this conference through a special session. The recommendations were,

- (i) Develop and implement a robust accident data recording system, with associated accident data management system for uniform adoption across the country
- (ii) All fatal accidents be investigated fully for real causes of accidents. In PPP and other projects of NHAI, the concessionaries are to be entrusted with full power and responsibility of traffic management and enforcement.
- (iii) Incorporate advanced in-vehicle safety systems for improving overall safety of traffic on road. For example, anti-lock braking system, air bags, electronic stability control, etc are to be normal features of a vehicle. Implementation of these are to be made time bound. ABS can be made mandatory in all vehicles by 2012. Airbags may be some other date and so on.
- (iv) Other advanced technologies like ITS, which can make a complete change in the road safety situation in developing countries, is required to be implemented urgently.

Mr. K. K. Kapila, the Chairman of the Panel Discussion, then invited all the panelists to give their views one by one.

Mr. Nirmal Jeet Singh



Dr. Sikdar has included some engineering measures in the recommendations. One or two more points I would like to suggest. We have the manuals for developing two lane, four lane and six lane highways which we are following, and these have been brought out over a time. There are certain differences in these manuals compared to the latest safety practices. I believe that we should carry out the reviews of these manuals and try to improve. I think the manual for six laning is slightly better than the earlier ones. So whatever new things we have incorporated now in the new manual, we should review the two lane and four lane manuals to incorporate those.

Another issue is that we need to create a special group in the Ministry also on Road safety. Earlier there used to be Traffic and Transportation Cell in the Ministry, headed by the Chief Engineer, from 1982 to 2000 but subsequently it had been dispended with and merged with the standardization. If we really want to control the engineering measures in the country, in the nodal ministry there should be a specialized group on traffic and transportation. We should be able to provide guidance to the states and also introduce the new standardization etc. through this.

Another was that earlier in 80s road safety cells were being financed by the centre. At that time in 1982, the government had decided that it will finance the road safety cells for the period of 5 years from CRF and after that states were supposed to continue from their own funding. So mostly it remained only for 5 years and after that because of the financial difficulty they could not carry on and slowly in most of the states they were closed down.

Again now the recommendation has been made that states should also have a cell. I suggest that centre is giving lot of money to the states from Central Road Fund. Thus, funds are already being given from which the expenditure on road safety cell could be allowed to be incurred. Thus, it is only required to modify the guideline for operation of CRF. This should not be very difficult. This is an administrative matter in the Ministry. It can be done. If the

funding from the Central Road Fund is allowed, states will be encouraged to set up such cells.

Another problem is that in the mega cities, the personalized vehicles are increasing at a very high rate. Almost 85% of our vehicle population is two-wheelers and cars. And in spite of all the improvements that are done in major metropolitan cities, the problem of congestion still remains. The government needs to take some fiscal measures to discourage more and more personalized vehicles and create conditions where people are forced and encouraged to use the mass transportation. Without such actions, the problem is going to remain and is going to get worse with almost 10% growth of vehicles every year. The metro ride is quite comfortable. Of course, during peak hours there is a lot of rush, and all that can be tackled. Some measures on this line could be suggested.

Another problem is that all are witnessing lot of encroachments on the roads. Especially in the urban areas, the footpaths are encroached. There are lots of activities of the motor-garages occurring on the highways. So there should be strict enforcement and all such encroachments should be removed. Footpaths are meant for pedestrians, they should be available for use by pedestrians. There should also be strict control on hawkers' activity.

Another serious problem is of vehicle over-loading. This is a very serious menace on the highways that not only endangering our road system, it is creating very unsafe situation where lot of accidents occur because of the overloaded vehicles. They normally try to go in the centre of the road. They will not allow anybody to overtake. Though there are provisions for checking the overloading, but mostly it is fined and compounded. However, there is a provision in the Motor Vehicle Act that vehicle should be stopped and extra load should be off-loaded, and then only it should be allowed to proceed. But it is seldom enforced. The enforcing agencies just put some monetary fine and allow them to go. As the Motor Vehicle Act is now proposed to be amended, the existing provisions should be more stringent and also enforced literally.

Mr. Ken Shaw



One of the first things is that a huge opportunity kicking off from 2011 to 2020 which is a Decade of Action of the United Nations. India can use this as opportunity to really stop multiplying the road safety initiatives. There are lots of things being planned during the last two years. But it is also skills which are required to implement programmes, and some of those skills are more business related and project management related. Therefore, the task is to identify those skill sets which are available, and what skill sets need to be developed so that there is good chance for the success in implementation.

The other thing is about the multi-agency involvement, and it makes a bit of slow thinking in India. There is a lot of agencies who have a stake in road safety, certainly MORTH have, also the health and family welfare Ministry, and also the Ministries of the Home Affairs and organizations like NHAI, etc. They all have a stake, but is there a way that they can collaborate and cooperate and partner together to deal with the issue which they have all got in common, and if they can focus from what the common issues are for each of the organizations and not on differences. This will give a good head start in moving forward, but it has got to start with that sort of collaboration across the agencies within the country.

Mr. Satyendra Garg

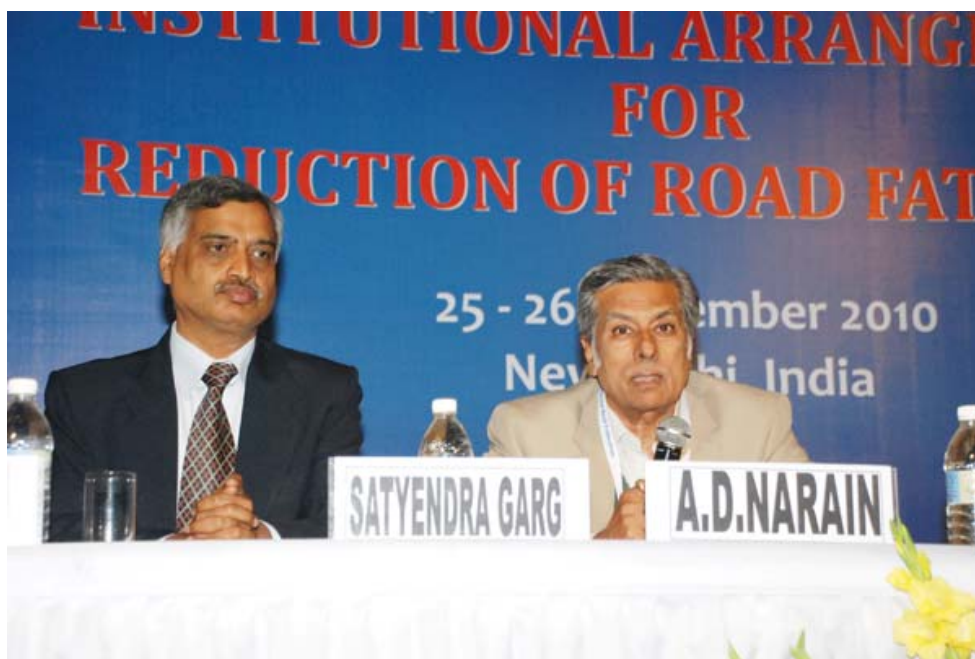


I will start with a confession. Many of the sessions I could not attend, and when the sum up was given with the details like initiatives like Road Safety Mission, Collaboration, World Bank Funding, Institutional Arrangements and all others, I felt about my confession. I have been in Delhi for about one year, and on ground I have not seen much of the things happening. We have made our own initiative in reduction of fatal accidents. But if our target is to reduce fatalities by 50% in next 2 years, I feel that we are lagging behind. Many of the things, of course, have been said, and it is high time we prioritize about what should come first and what can wait. In my view, as one speaker said that there should be policy about footpath being available for pedestrians, which is a very noble thought. The other day like yesterday we were attending a meeting of UTTIPAC, the governing body, which decides

matters on transport and traffic in Delhi. I mentioned to the Hon'ble LG of Delhi that during Commonwealth Games quite a bit of expensive infrastructure were built in terms of like footpaths, very good street scaping etc, but what is happening on the ground. Previously the cars were parked on road side, and now in last three months the cars are parked on footpaths. Of course lot of infrastructure money has gone into it, and when I come from Hauz Khas to Police Headquarters, I see that footpaths on both sides are being used for parking the private vehicles. I pleaded with Honourable LG to have a legislation that infrastructure which have been created should be rightly used. Other than Motor Vehicle Act, which is cumbersome to amend, all these things can have legislation at state level which will be much better. He gave a thought, and something might come through. But till the serious issues are addressed, the plan to reduce fatalities by 50% by 2012, would remain a dream.

To work seriously on road safety, we should prioritize and make legislations by amendment. The matter of amendment of M. V. Act is going to select committee and as the Minister has assured yesterday that the amendment bill might be in the next session. If we are very keen that fatalities decline and road discipline is to improve, we should have a stiff penalty, which we have shown to everybody during Commonwealth Games. Delhi is considered very difficult to discipline, and was disciplined totally. A gentleman was saying that his grandfather used to mention that 50 years back or 40 years back it was pleasure driving in roads of Delhi, and he took his eighty year old grandfather to the roads and showed him present situation, the same situation had come back during at least the 15 – 20 days. There are no short-cuts to improve the situation. I am all for road safety education, campaign, awareness, and everything else. But, it is high time we move faster in our actions and try to manage reduction of the fatalities, which cause huge loss to our GDP.

Mr. A.D. Narain



I look at this problem from institutional angle and I find that there are four important pillars which needs to be addressed. The pillars are engineering, police, health and education. They are all different pillars with different priorities and different masters. Each of these pillars

has different masters, they own themselves, they don't collaborate for a common cause. How do we get them to a common cause and to master over the problem. They are having their own priorities, and they just don't look at each others' priorities at all. How do we integrate them into one for a common cause. Polio was a common cause, which was health related, and therefore, health ministry took up the cause and they got it addressed on a commercial basis. This was a totally health problem and the health ministry succeeded. The road safety is not a health problem alone. This is a problem which has got four masters and how we have to integrate these four masters. I have strong feeling that as IRF we should write to the Hon'ble Prime Minister to create a Cabinet Committee comprising of these four under his Chairmanship separately only for this matter of road safety. All issues of road safety should get flagged by this honoured committee under the Chairmanship of the Hon'ble Prime Minister. Nothing else will work. Pure legislation of National Road Safety Board is a legislation which will give directions and support with money. But this is not adequate itself because it is well known that money and legislation will not help alone. There has to be also commitment to do it. Till that legislation comes, may be this committee can guide, and later can be dissolved. But to begin with, I strongly urge that this platform could be used to write to the Hon'ble Prime Minister that the matter is so grievous that it requires his consent only and none else. Till we take it to that level, we will not solve the matter. Therefore, this is one of the recommendations which I think we should send from this platform. Now going into the nitty gritty, there are number of details which we have talked. We should specifically identify some 3 or 4 important road safety programmes which we must implement across the country. Adequate pedestrian walkways totally safeguarded from intrusion of vehicles will resolve many problems. Mandatory helmet law to be enforced across the board and nobody should be able to drive on the road without a helmet.

Lane driving should be made compulsory across the country. The other issue is that the method of involving the public must be made formalized. Any project must be in public domain we must formalize the method of public consultations. We should have a public hearing of all projects, and this must be the starting point. Further, any appraising agency (World Bank, ADB, etc) give a loan on a corridor management system. They may give loan on corridor management system provided all roads safety concerns in the system have been addressed, for which a separate fund must be earmarked. In all appraisal loans extra money should be given for road safety, which has to be only for road safety details.

Even if the project is on ground, there has to be a mechanism to involve the project implementer i.e. the Owner, the Contractor and the Concessionaire. These three must coordinate with public and in the entire duration of the project to meet regularly and discuss the issues so that the public feedback is concurrently addressed along with the project progress, and the project get improved. We must identify definite road models in each state to demonstrate that these are safe roads. We must pick up those roads, identify them, do everything possible on the earth to make it accident free and replicate those road models across the country.

Mr. A.V. Sinha



On the question of safety, the first thing comes to my mind is who owns this. Minister of Road Transport & Highways, the Police Department, the Transport Department, the State Government, or the City Councils or Municipal Corporations, who owns this. According to me, the problem is there because nobody owns safety. Everyone is doing his bit and taking credit of bringing safety, we also take credit that we are trying to make safe roads, we are providing service roads, underpasses and grade separations, and we are trying to make safe roads. The Transport Department issues licenses, the driver training is also their responsibility. The Central Government makes the rules, the legislation and the state governments are also entitled for making rules. There is so much multiplicity of authority that nobody knows whose job it is to ensure safety, and therefore, in the forum like this something should emerge that who actually is responsible. We have seen some emotive speeches today that vulnerable road users are not taken care of or safe approach or vision zero, etc. These are very well stated goals, and goals are by definition end state, but practically these are not possible to be achieved. When there is a need for mobility, we cannot sacrifice mobility all together in the name of safety. I mean one shouldn't see mobility and safety detach from each other. While ensuring mobility we have to ensure safety that should be our objective. On expressways why there should be any pedestrians. The speed or mobility can be addressed with only VRU as focus. We have to clearly demarcate or delineate the respective jurisdictions of each authority and every one has to strive for safety. People are saying designs are not safe, we have to make it more safe. But then that doesn't absolve the other agencies that transport department or even ministry of road transport should not neglect other issues like say driver training, driver licensing, booking for traffic offences. It has to be a collective effort and there has to be synergy of all these efforts and ultimately it has to come into a result into safe roads. One step was the national road safety and traffic management board, somehow this is taking time. The objective of the whole exercise was to bring safety under one umbrella and empower the body who can look into every aspect of safety.

Dr. S. Gangopadhyay



I guess we all should go to the roads now and see the condition, it is terribly haphazard traffic movements and I was wondering that some of these films could be shown in this conference. National road safety and traffic management board will come through to the legislation by Govt. of India some time in future. That will be almost like CPCB (Central Pollution Control Board) which manages and collects all the information and then frame the policies as far as pollution is concerned. But many things have to be done at the state level, at the city level, and smaller cities have tremendous amount of problems as there is no public transport facilities. Those people have to heavily depend on the two wheelers and specially the bicycles. The point is that it is not necessary that all the state governments or Centre only should strive for reduction of road fatalities, all the local authorities should have the same target of 2012. It is not necessary that target and action plans are uniform, and in USA also states in the have different targets. Some states have aimed 4% reduction every year, while others say that 20% in next 3 years. I fully agree with what Mr. Sinha, who said about the multiplicity of the organizations that we have, and is a tremendous problem. DDA is having now UTTIPEC, IRC has got an urban transportation committee i.e. H8, so there are things which are not known to many. I do not know except road safety audit manual what are the other safety features that we are talking about in the forum of IRC. Small and medium size cities and towns, metro cities and then the other rural areas, and other states because it also depends on state to state now. We have established a link with IRF, and we are having regular training programmes for the road safety auditors. Mr. Kapila mentioned in one of the meetings about the model road, and I fully agree that we have to show to our society by the model road where all street furnitures and safety devices will be in place. Therefore lot of work has to be done, the council or board under approval has to have multiple of expertise like engineers, planners, economist, psychologists, etc. We have developed driving simulator, all sorts of drivers we are testing so in a way it is in our institute itself doing a bit to reduce the road safety ultimately it will boil down to reduction of the road fatalities, but that is not happening. So now it is time we have to think seriously why we are not able to reach the target i.e. what we want to achieve for reduction of road fatalities.

Mr. N.K. Sinha



Mr. A. D. Narain and all others have affirmed that there are multiple organizations, who are responsible for reduction of fatalities. The Government wanted to create a Board, but somehow it has dragged its feet and there are problems in its creation and it will take time. But, we don't have time if we want to reduce fatalities in a targeted manner. We have to act fast and I would say that IRF can contribute and coordinate with respective Ministries, respective identified organizations and will facilitate the coordination. This is the way we can shorten this process and simultaneously we make appeal to various Ministries. Then there are various issues about the VRUs and the safety provisions in the estimates, which are recommended as discussed in the meetings. Funding of road safety which should be minimum 10% as per World Bank guidelines. The funding for road safety in urban areas should be a separate issue and may be the funding should be increased to 10% or more. How to achieve this, and that is the institutional arrangement which we are looking for.

Based on the deliberations from the panelists, the Chairman exhorted.

We just heard each one of the panelists here and some very good suggestions have come up like model roads and then make them as forgiving as possible and then replicate them throughout the country. In this context, I would like to inform this house, that once the best practices were issued in what we need to do on the roads to make them safer roads in April 2010 by the Ministry of Road Transport & Highways, a letter was written to all Chief Secretaries of all States and also PWD Secretaries of all States requesting them to identify one road identified in accordance with these guidelines and come back with estimates for improvement so that at least in that state there is one forgiving road. This was followed up both by the Secretary, MORTH and by me in my capacity as Chairman, IRF. But I am astonished, nobody came forward with any estimate. That is the apathy, that's the lack of concern, total lack of concern, not a single state came forward to say that this is the road which we want to make a forgiving road; we had assured funds for that, and yet nobody

comes forward. It is a bad situation of mindset which needs to be changed and very fast. I will now read out the recommendations of this Conference.

Mr. Satyendra Garg, at this stage, wanted to answer some questions raised by audience, and he replied.

There was a mention of illegal on-street parking and why those are not penalized towing them away. The situation in 1982 and situation in 2010 are of huge difference. Now there are 65 lakh registered vehicles, and if it is done that way across Delhi, there will be no place to keep them after towing. Whatever is to be done it is to be done in a way to show others that we can enforce it. It was done very well during Commonwealth Games, but actually the sheer dimensions of it and sometimes the absence of infrastructure make it difficult. Delhi Police towing on any day like 500 to 600 vehicles with whatever little resources we have got. we are doing that and we have started a thing now I mean if you have gone to Connaught Place of late like The outer circle in Connaught Place is absolutely encroachment free nobody can park there, the entire ring road from Naraina to Ashram has been made absolutely a highway free flow road. Now we have put traffic police in the bus stops also because the maximum congestion occurs in these areas, as bus users (sometime 200 persons) stand on the carriageway and our person regulate.

Observation was that when we can do it for the Commonwealth Games why can't we do on day-to-day basis. The feature of traffic during Commonwealth Games is that public education was on. A month before the Commonwealth Games we started educating people that this is going to be the way traffic will flow during the games. The reserved lane control we started on weekends and normal days and peak time, and all those things were published by media. So we started well in advance, and publicize the whole concept, and of course, many people left Delhi for some time which reduced our traffic and that helped. Further, during the Games we banned the goods traffic on the roads of Delhi which took away 40% traffic in the daytime from the roads. All education institutions were closed and may be 5 to 7% of traffic related to education institutions was not there, and people were long holidays out of Delhi which also reduce our traffic. The most significant thing was that we invoked two provisions: (i) The 2000 rupees fine for violating games lane and (ii) possibility of arrest and impounding of vehicle. I remember Netaji Subhas Bose. He said 'you give me blood, I shall give you freedom'. So here I can say, give me the laws, I shall enforce and deliver the reduction of road fatalities.

Mr. Kapila, Chairman of the panel retorted that he can now read the recommendations. He said that, these would not be necessarily in any order. We will prioritize them eventually, but I am giving the points here which are required to be included in the Conference Recommendations. Mr. Kapila read out a list of summary recommendations, which were then opened for suggestions from the audience and Panelists. The first recommendation emerging from here is an appeal to the Prime Minister to set up a Cabinet Committee with the cabinet ministers of MoRT&H, Home Affairs, Health, Education as well as Information & Broadcasting to look into this road safety menace. The second is that the 2 Planning Commission shall be requested to earmark a budget of Rs. 5000 crores for road safety every year. The third is that Autonomous Road Safety Board should be established at the centre and states in the next one year. The fourth major recommendation is that funding for road safety can be provided from CRF, if not from other sources. The fifth important

recommendation is that amendments of Motor Vehicle Act to be speeded up in a time bound manner, and preferably in the next 6 months.

Mr. Satyendra Garg suggested here that there can be enabling clause in the amendment of M. V. Act empowering the States to legislate local laws, if so required, before the main act gets amended. The level of fine etc should be linked to Wholesale Price Index, which is revised every three years, and it should be possible to legislate by States.

Mr. Kapila continued with the major recommendations, and said that the sixth is to legislate and enforce wearing of seat belts for all 4 wheeler drivers and passengers. The other recommendations are: Legislate and enforce the wearing of helmets by both driver and pillion rider without exception in case of scooter and motor cycles. Installation of enforcement cameras at all crossings and speed cameras in identified locations. Increased usage of ITS for realizing safety on urban roads. Promote excellent trauma care system totally supported by technology, as implemented by GVK Foundation, all over the country.

Curriculums for the school children are to be developed and implemented uniformly, in line with the spirit of 'hook them young hook them early'. Upgrade existing driver training institutes by appropriate training of trainers and adding other facilities. Introduce automated skill test for issuance of smart driving licenses. All drivers in organized sector are required to be fully trained with appropriate driving skill tests, and also to undergo refresher courses every 3 years with a built in test at the end of each refresher course. Mandatory road safety audits in design before the administrative approval is accorded for any work. Road safety audits to be carried out further during construction and operation. All roads in the country to be provided with road signs and markings in accordance with IRC specifications. All bus stops in urban environment are to be provided with bus bays. Develop and implement robust accident data recording and management system throughout the country. Provision of pedestrian facilities, footpaths, FOB and cross-walks to be kept free of encroachments.

In reply to floor intervention, Mr. Kapila responded saying that cyclists we have already covered in the recommendation the last conference, which is being acted upon. In fact, I would like to share with you that we have gone ahead with the All India Cycle Manufacturers Association and some companies who produce the reflective tapes. Therefore, we will be doing the exercise of fixing the reflective tapes on the bicycles in a couple of weeks. Some tests are being done, so that this will become a part of BIS specifications for the bicycles.

The Panel Discussion was concluded by distributing mementos to the Panelists.